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Introduction

About the Subject.

Niels Bohr, a great physicist and a Nobel Prize winner, confessed that when he started his career he tried to take up economics but once he realized this subject was too complicated for him he got lured into nuclear physics¹. Normally this story is told with the anticipation of the “understanding” smile of the audience. In fact, Neils Bohr was right – the truth is the subject of economics is a lot more complicated than the subject of physics.

This book is precisely about that very complicated subject – economics.

About the Name.

Older people once they see the name of this book might recall the work of Friedrich Engels – *Anti-During* – which they must have studied in colleges and universities in the Soviet era. In his work, Friedrich Engels laid out three components of Marxism rather than argued against the economic vision of Eugene During, a petty-bourgeois ideologist.

I liked that approach. This is exactly why you are about to learn about the areas of economics of which many authors of contemporary Economics textbooks have no idea about or have a misconception about.

So, why exactly “Anti-Economics”?

Apparently because using this name I want to turn the reader’s attention to the fact that economics – in its current state – has lost a sense of reality. And the so-called “Economics” is a leader in this evolving trend.

About the Contents.

Economic studies normally result in building hypotheses of various levels of credibility. This provision undoubtedly is directly related to the contents of my book. It contains new notions of the subject of economics – competing with those of “Economics”. The book analyzes the issue of the of public wealth source. It also

¹ Another Nobel Prize winner, Leo Landau, had bad luck with economics. In 1922, he graduated from Baku Economic Institute. He made his name as a physicist.

suggests answers to whether economics is a science and explains the public destination of economics.

The “Economics” textbook by G. Sloman – to which we will repeatedly refer – claims that: “The majority of people think that economics is money. In some sense it is true indeed”.²

However, money is first and foremost prices. Therefore the fundamental challenge of economics was and still is to explore the meaning of commodity pricing.

“Economics” “crafted” with the scissors³ of its author – A. Marshall – has for three centuries now been replicating the pricing hypothesis, which strange as it may seem has never been subjected to critical analysis. A. Marshall himself self-critiqued his practical knowledge, and he was probably right. Indeed, it is real practice that rejects the mechanism of equilibrium pricing as offered in “Economics” textbooks.

This book suggests a new price hypothesis based on the acceptance of possibility of the sales transaction on condition of concurrent profitability of the transaction for both parties. The scheme of compromise pricing enables to understand many actual processes taking place in market economy, while helping to fill with content the category of commodity price in all its forms: wholesale, retail, stock prices...

A principally new section for economic publications is the one dedicated to the definition of objectives in economic systems. This part provides an overview of one of the fundamental characteristics of the management system for societal financial and economic activities: definition of objectives. It turns out that the qualitative content of a defined objective is definitive for the nature upon meeting the said objective.

The two forms of definition of objectives: economic and non-economic stipulate for simultaneous existence of two affine areas of human activities in the modern world.

² G. Sloman. Economics. 5th Edition. Translated from English and edited by S.V. Lukin – St. Petersburg: Piter, 2005, Page 18. This textbook is particularly interesting since its annotation suggested the textbook was “the most famous textbook in economic theory”. (Page 4)

³ Marshall Scissors, Marshall Cross – establish economic schemes that illustrate the main approach of “Economics” to the substantiation of equilibrium pricing.

In one of them, the purpose is to derive revenue and profit. The rules of this form stimulate people to cut costs, ramp up sales volumes, increase production efficiency. This is the area of material goods production, trade, and finance... This is the area to which the publisher of my book belongs: he measures his expenses with estimated profits from his sales. This is the part of our life dominated by economic definition of objectives.

But there is another one in which revenues and profits do not determine the goal. If you, my dear reader, are a student or an instructor then you belong right here. Along with you are scientists engaged in fundamental research, doctors, government officials, housewives, the military, etc. And the goals they all set are non-economic. Yes, a teacher is paid to do their job. However, the result of their work cannot be measured financially. This is why schools run their activities differently as opposed to industrial enterprises: they have difference evaluation criteria for their performance.

The borderline of these two realms, with different forms of definition of objectives is penetrable. By moving from a university classroom into a convenient store we easily walk from one realm into another.

Speaking of a society in general, it is quite interesting to realize and extremely important to ascertain where the border between economic and non-economic definition of objectives should lie, and what the consequences for its wrong demarcation are.

About the Genre.

I want to say this straight: Despite the fact that many might quit reading this book at this point, it is quite a scientific work. There is, however, one mitigating circumstance: this book uses the lowest possible academic level of narration. The degree of complexity of narration quite conforms to the objective level of development of the area of intellectual activities: this book is dedicated to – economics. Any attempts to substitute the contents with a meaningful sciolism would fail to conceal the fact that borrowing of exterior form from natural sciences does not add any scientific charge to economics. Practical contents of economics

require a relevant form. It might be identified over time. This book offers one of the possible scenarios.

I am not going to claim that this book is a page-turner. However, I tried to make this narration interesting and understandable not just for the professionals.

The Features.

Number one.

Those of you accustomed with reading economic literature might possibly be a little surprised by the lack of constant references to authorities and multiple quotations. This is not about me trying to stand out; though getting lost in the myriad of other names is not my intention, either.

Our research libraries are filled with books in which one cannot find any original thoughts of authors among hosts of quotations and references. These books are more of anthologies. There are plenty of books I'd characterize as "economic potpourri" whereas there are few truly informative ones.

The feature of this book is that it contains no thoughts and ideas of other people.

Number two.

A national financial and economic system is not just a subject of research for economics but is also a source of need for such a research. Therefore I have to say this straight: The book was written by a Russian author, and this fact had a definite impact on its form and substance.

Number three.

A vast majority of those striving to master economics view it as a magic key to success and riches. The illusive existence of such a key is actively maintained and advertised. Economic literature and academic lectures are filled to the brim with stories of financial wonders that happen when applying this or that newfangled method. These legends may as well originated in fairytales of ancient shamans about unbelievably successful mammoth chases.

"Anti-Economics" does not create any illusions, nor does it cherish any overstated expectations.

Chapter 1. The Purpose of Economics

Economy and economics.

It is rather difficult to define “economics” using the Russian translation of this term. First, the term “economy” or “economics” in the Russian language is extremely overloaded since it has many affine meanings.

In Russia, the term “economics” normally encompasses the entire financial and economic realm of activities – we are used to a cliché: “economic growth rate”. Here, economics is a material production system, a national economy, and a commodity producing system.

Economics, in accordance with existing conceptions, is something holistic yet freely dividable into parts without losing its determinacy. The world economy includes national economic components. However, the division does not stop there. We easily use terms like “sectoral economics”, “regional economics” and even “economics of a settlement”.

Enterprises, even the smallest of them, trading centers and banks also have their own economics (economics of a market participant), and they have their own economic departments employing economists: junior, senior, chief economists, etc.

All of the above refers to practical economics; however, there is also economic theory. Academic economics has several disciplines. In our colleges and universities, there are several types of “economics”: mechanical engineering economics, construction economics, labor economics, and even that of procurement – a truly complicated field.

The uniqueness of the term “economics” is also that economics easily merges with such inclusions-determinations as “micro” and “macro”¹. It should be noted

¹ These “additions” first appeared in the works of John Maynard Keynes (1883—1946), a British economist and columnist.

that there is no other field of intellectual activity that would be subject to such a partition. There is no “microphysics” or “macrophysics”. There is a common science of physics that studies the entire world, from macro- to micro levels. There is no micro- and macro chemistry, biology or medicine. The same is true about social sciences: there is no macro-philosophy or micro-pedagogy.

There is a newspaper in Russia called “Economics and Life.” Its name suggests that economics is not life, and it is exactly is not described in the paper.

However, there are suggestions (not refuted by anyone so far) that economics can have various concentrations. In the most concentrated form it turns into politics (according to Vladimir Lenin) though in its initial consistence – according to many – it would be nothing but housekeeping².

The term “economics”³ evolved as some sort of a neologism in the author’s theory (Alfred Marshall). This is not just economy, not political economy, and not economic theory or economic science. This is something different.

The author of this linguistic fad – Alfred Marshall – used it to determine the outcome of a mix of economic and mathematics. This mix with mathematics (i.e. not arithmetic) turned this novelty into what was perceived as a new feature of economy.

The combination of liberal arts with mathematics was quite a trend at the time (at the turn of XIX Century).

John M. Keynes, the author of a comprehensive biography of A. Marshall, wrote that then Marshall was just starting his career, the idea of applying mathematic methods in the economic science was already in the air, however, at the time that idea did not yield anything substantial. Marshall emphasized the influence of the work by Curno – “Mathematic Principles of the Wealth Theory”. Keynes viewed

² The word “oikonomia” (“Oeconomicus”) is first mentioned by Xenophon (Ξενοφον, circa 434 – 359 BC) in its initial meaning – housekeeping.

³ However, the English “Economics” should be transliterated as “Iconomics”.

that to be a natural reaction of the mathematician from Cambridge (i.e. Marshall), however, the works of Ricardo as well as for, certain hints to algebraic interpretation of arithmetic examples of Mill (Book III, Chapter XVIII, § 6 — 8.) regarding international costs. Alfred Marshall must have inevitably gone through all these stages before he wrote his “Economics”, according to Keynes.

Some researchers believe that Marshall’s introduction of the term “economics” applied greater practicality to the notion of “political economy”.

However, in its current state his “Economics” is theory-dominated. But if the emphasis is on mathematics and statistics, “Econometrics” would inevitably emerge.

We agree that A. Marshall’s combination – “political economy + mathematics” – is still not a definition of the subject.

These definitions were made later.

One of the first definitions was made by Lord L. Robbins⁴. He believed that “Economics” studied human behavior from the standpoint of a ratio between purposes and limited means that may have different application.

According to one definition used in a textbook by S. Fisher, R. Dornbush and R. Shmalensee⁵, “economics is a discipline that studies society with limited and deficient resources, a society that decides what, how and for whom to produce”.

The definition of “economics” was provided in a homonymic textbook by C. McConnell and C. Brew⁶: “The subject of economics is a search of effective utilization of rare resources in the production of goods and services in order to meet materials needs”.

⁴ Lionel Robbins (1898-1984) - a British economist.

⁵ S. Fisher, R. Dornbush, R. Shmalensee, Economics, M., 1993. Page 1.

⁶ C. McConnell, C. Brew, Economics. M., 1955. Page 97.

We should particularly emphasize the definition of “Economics” made by P. Samuelson and W. Nordhaus⁷. These authors suggest that “economics” is a combination of two sciences under one name: micro- and macroeconomics. They argue that “Economics is a science on how society utilizes limited resources for production of valuable goods and distributes them between various groups of population... There is a significant difference between macroeconomics – which studies the functioning of economics in general – and microeconomics which analyzes behaviors of certain components such as industry, companies and households”.

Let’s note that the authors of this definition created a rather contradictory construction. It is clear that two sciences “combined under a common name” cannot have the same subject of research. Otherwise they are united by a substance, not a name. But the very fact of acknowledgement of partition of “economic” into several independent departments is quite significant, it should be highlighted and remembered.

There are plenty of definitions like the ones mentioned above. Most of them agree on this: “Economics” is a science that studies the means of distribution of limited (rare) resources for production of material goods.

The analysis of many definitions of this subject suggests that their authors that queued up after L. Robbins, tried to formulate the key task for economics thereby laying the functions of its theoretical substantiation and comprehension upon “Economics”.

I would note that the very interpretation of “Economics” as a manual to distribute scarcities contains a solid amount of slyness.

To begin with, “Economics” books contain neither methods for determination of a degree of scarcity (deficiency) of resources nor means for their distribution.

⁷ Samuelson Paul A., Nordhaus William D. Economics, 13-th ed. 1989. Page 5.

But the point is different. In real world, we are not going to find any field of professional activities that would aim at forming the decisions described in the established definitions of “Economics”.

The aforementioned definitions (and many other, similar ones) could be correct on condition of discreteness of economic activities. In that case, at some point of time some social institutions could differentiate resources by degree of their scarcity, and distribute them on the premises of their concern for resolving the problem of forming instructions of “what, how and for whom to produce”. But practicing economists do not explore scarcities and do not distribute them, either. Undoubtedly, any definition just as any comparison is far from perfect. But one should not anticipate anything else in case a definition is represented as a blessing from above.

The definition of the subject of economy (economics) is arguably the most complicated issue. And the answer to that issue should be sought in the processes of evolution of this field of intellectual activities of a society.

Therefore let’s refer to the origins.

The three sources, three components

It is believed that economics originated from Xenophon.

It is worth noting that the ratio of quoting his “Oeconomicus” (housekeeping) is extremely high in modern economic literature. This is not typical for ancient Greek authors. At the same time, contemporary scholars mostly use just one fragment – its name. This is possibly due to the fact that the name enables to describe the level of economic knowledge of that time as rather primitive and limited to housekeeping, essentially, a natural economy. This “fact” kind of testifies to the existence of progress the economy made in two and a half millennia: from counseling on housekeeping to managing the global economic system.

It is difficult to say who first used this technique but in Montchretien's⁸ "Treatise on Political Economy" one can not only find advice to Louis XIII on how to manage the state property in order to ensure prosperity of the state. Even the name of this work – "political economy" which according to the author meant "the art of the state-run economic management" – was chosen by Montchretien intentionally: in order to oppose the contemporary view on economics as a theory of public economy to the views of the ancient thinkers that understood the term "economics" as managing private households.

However, the concept of limitations of economics at the moment of its origin just by forming the algorithms for solving problems of managing simple households is quite dubious.

Plato in his "State" puts a thought in the mouth of Socrates on the division of mathematics, astronomy and a number of other sciences. Long before higher mathematics turned into an established scientific field Plato identified its earthly and heavenly branches. While the first one is engaged in counting objects and visible forms, the second one is busy with numbers, regardless of their relation to reality⁹. This is precisely the path – from simple to complicated, from concrete to abstract – that all natural sciences went through. It is obvious that economics which constantly claims to its equality with other sciences including natural sciences also defends a similar sequence of its evolution from its initial state to the current one: first was the primitive "Oeconomicus", then emerged the higher economic matters.

Speaking of the contents of the works of Aristotle and Xenophon it turns clear that economics (economy) in their understanding was to a large extent different

⁸ Antoine de Montchretien (circa 1575—1621) – a French economist.

⁹ See Plato. The State. Book X.

from the modern concepts. In the view of ancient authors, economics was a description of a housekeeping technology.

Xenophon's "Oeconomicus" is a collection of commandments based on the systematization of practical ways and methods of that time which led – in the author's opinion – to prosperity of households. In order to make sure of this it is sufficient to look at its table of contents. It included:

Households of good and bad household owners.

Household improvement.

On organization of household. Housekeeper. The meaning of housekeeper.

Weaning away wives from cosmetics and training to improve personal health through caring about a household.

Manager. Manager selection and training.

Quality of manager.

Integrity laws for servants.

The need to study farming.

Soil and its cultivation.

Sowing.

Harvesting and grain peeling (refinement).

Gardening.

Attentive and negligent farmers.

The skill of treating and managing people...

Thus, the work of Xenophon is indeed about housekeeping, i.e. a collection of instructions. There is no economics in it, at least, in our customary understanding of economics. There is only one fragment in which surplus of income over expenses is acknowledged as the source of wealth increase. No matter the important of this provision, one conclusion is not enough to make up a full-fledged science.

Even the term "science" had quite a different meaning in the Xenophon times.

Let's refer to the source:

“Once I heard Socrates talk about housekeeping. He said something like this:

– Tell me, Krytobul¹⁰, is it true that housekeeping is a name of some science, just like medicine, blacksmithing or carpentry?

– Yes, I think so, replied Krytobul.

– But can we explain the subject of housekeeping just like we could explain the subject of each of those sciences?

– I suppose, said Krytobul, – a good owner's business is to properly manage their household¹¹.”

As we can see, the author here equates science with what we today normally call “best practices”.

It is curious that despite all the rage and frenzy about “Oeconomicus”, another work of Xenophon “About Revenue” (Peri poron)¹² is almost never quoted in economic literature. Yet it is dedicated to a very interesting and, undoubtedly, economic subject. In this book, Xenophon not only suggested an economic model for the development of the Athens state – which was in a crisis – but even substantiated it using many factors (geographic, natural, raw materials, demographic, etc.).

Two and a half millenniums ago he virtually proved the need for shaping and implementing an intelligent economic policy.

Moreover, the work of Xenophon “On Revenue” is also a great example of a political pamphlet in support of Ebul's financial policy. In his work, Xenophon presented that very same specimen of “concentrated economics” which was

¹⁰ Krytobul, the son of Kryton, a close friend of Socrates' – still a young man, rich but negligent about his fortunes, fully indulged in amatory pleasures.

¹¹ Quotation: “Athenian Xénophon. Socratic Dialogs”, M.-L. Academia, 1935.

¹² See Ancient Greece Anthology. Edited by D. Kallistova, M. “Mysl”, 1964. Translation by E.D. Frolov.

impossible to separate from politics. By all means this was not a book on housekeeping or description of housekeeping examples.

It is worth noting that Aristotle identified two types of wealth: natural and monetary. In order to denote a science of natural wealth he used Xenophon's term "economics" (science of housekeeping), whereas to specify the science of monetary wealth he used the term "chrematistics" (chrema – possession, fortune). Thus, even the antique classics' works one can identify the features of three relatively independent fields of intellectual activities that laid the foundation for economics in its contemporary meaning. Each of these fields has its specific address for the result derived within such field.

First. Household management is economics.

Second. Wealth accumulation process is chrematistics.

Aristotle (considering his negative attitude to wealth accumulation) did not have any authoritative followers in terms of developing his idea of separation of the science of wealth as an independent brand of science. However, both in the works of researchers and in real practice we constantly face the division between financial and economic fields of human activities.

Third. The State management. A branch of economics that creates an intellectual product designed for the state management should be called "polysomia"¹³ (in harmony with the previous two).

Concerning the third field.

It was not pointed out in any works of ancient thinkers, at least in those accessible to us now. However, according to Xenophon's "On Revenue" ancient Greeks were systemic in their approach to managing the state, in budget formation and allocation.

In the budgeting processes of those times (and even today, though) there were lots of uncertainties and unformalized. That did not let Aristotle or Xenophon explore

¹³ Polis (Greek: pólis), a city-state.

and describe the algorithm or technology for setting up these processes. This is possibly why there was no such work as “Oeconomicus” that would be dedicated to instructing in asset management of ancient Greek polices. However, the absence of such work still does not indicate ancient Greeks did not have those problems or that they did not resolve them.

But ancient Greece was not a starting point in the evolution of human civilization. Early sprouts of economics can be found in even more ancient layers of civilization.

The Big Bang

Naturally, no one is going to reconstruct the process of economy formation for certain based on the bones of our ancestry and the shards of their cookware. Therefore all we can do is build hypotheses based on “economic archeology”.

I will take my chances and suggest that the first resemblance of a society evolved during the Big Bang era. This was the period – a moment in history when humankind had to face the problems that demanded evolvement of areas of intellectual activities known today as philosophy, physics, mathematics, psychology... and, of course, economics.

In fact, economics is a rather separate issue in this category since this field was most closely related to the most important issue of the evolving society – the issue of survival, both short term and long term survival.

The Big Bang, in our aspect of interest, which provided for the first impulse to the development of civilization, was revealed during the transition from the product obtained by a man from Nature to establishing agreed terms for dividing the same. Initially, at the early stage of societal development there was a moment when a product procured by a flock became its property, and secondly, the distribution of this obtained product was done according to the rules defined by all the members of this flock. The socialization of a product procured individually and collectively united temporal and constantly falling disintegrating groups of anthropoid species

into some sort of a stable community (flock), whereas the established (formed through purposeful thinking pattern and those than became the result of inevitable compromise) rules of distribution of product procured from Nature determined a brand new – human – nature of such community. An alternative to dividing a product by rules is a free fight without rules which testifies that the form of unification is a band, not a flock.

Let us identify the key moments in the proposed scheme of mental restoration of processes of formation and distribution of a cumulative product of the primitive flock.

First. A product procured from Nature in a fight by all the flock members gets socialized.

Second. The rules of cumulative product distribution become formalized (as a result of fighting between conflicting interests) and known to all the flock members; these rules are based exclusively on instincts.

It is hard to ignore the fact that the first and second conditions and their combination create a process called today... budgeting¹⁴ in this case in its natural and real valued form.

But what's most important for us in the proposed hypothesis is that the intelligent rules of distributing a procured product were established during the Big Bang.

The formation and application of these rules, undoubtedly, represented nothing less than pre-economics. This is when the foundation for shaping future criterial and definitive bases of economics¹⁵. However, it is there that we find the necessity to resolve social challenges – the rules should have accounted, for

¹⁴ It is obvious that even then, at the dawn of civilization, the methods of fighting the inevitable attempts to avoid both the socialization of procured products by certain individual and the privatization of common good were relevant and important. This is how coercion was evolved and with it the first sprouts of law.

¹⁵ The filling of common kettle approached the apprehension of such category as “value” – a mammoth is clearly more valuable than a hare.

instance, product sufficiency for maintaining the elderly and feeble members of society. And most importantly: right from the start of pre-economics - when survival was the most acute problem - there was an inescapable element of uncertainty: how to divide, how must to keep, considering it was unknown when the next helping of product would be procured¹⁶.

Even at that stage, the origins of civilization, the problem of finding equilibrium through maintaining certain proportions was being resolved.

The problems that originated at the dawn of human civilization when distributing a procured product are still valid and current nowadays. Nobody could then explain and evaluate the part of common product accounting for hunters. And today there is no objective ground for determining the part of the state budget for defense, for example. It was true then, it is still true today. Eventually, every time any particular number in the budget pops up, the algorithm of its formation is labeled: "Top secret". Any country faces the same situation when making its budget as first occurred when ancient people shared the mammoth's carcass.

The process of transition from pre-economics to economics starts from the formation of family and ends with the invention of money.

The decay of patrimonial system of society laid the foundation for future division of economics into "macro" and "micro". Both fields of intellectual research gained their specific addressee that was interested in their results.

In order to shape the phenomenon of "economics" the process of community's decay into families became necessary. But that process along was not sufficient. A family was formed as an element of economic system under influence of the emerging monetary circulation.

¹⁶ Forming the rules of distribution of products included the need to overcome the instinct of primitive direct egoism. Those rules implied survival not of a certain, not necessarily the most strong individual, but survival of the entire community. The understanding of significance of a flock for the author (authors?) of the rules of product sharing meant the transition to mediated egoism and became the first element of the game we currently call "politics".

Money is not only the most ingenious invention of mankind but there arrival led to the most drastic changes and transformations in human history. A community of people equipped with a measure of value was reborn and turned into a society. The changes occurred at the level of definition of objectives: They created division into types of activities pursuing economic and non-economic purposes (See Chapter III).

The very invention of money enabled us to unite something that cannot be joined by any methods of physics and chemistry (a cost price is nothing less than a sum total of human labor, machinery, energy and materials formed through their cost), and bring together the past and present (capital investment and current cost).

Question: Was there any economics prior to the arrival of money and is swapping an element of economics? I reckon the answer is negative.

The invention of money created a possibility and necessity to review and economy, regardless of its size, as a single complex. A swapping of a spear and axe is still not economics – it starts when a seller of an axe analyzes their possibilities and reflects on rational use of the received moneys. Maybe he chooses to keep the spear. And maybe he does not. This is a moment for making a free, intellectual managerial decision.

This free choice has a particle of economics.

The source of wealth

Money is a unique instrument simply because with its help we can find something common in absolutely affine goods. This something common is normally value.

A value (cost) is pure abstraction. However, behind this abstraction is a substance inherent to everything in this world that is reflected in money, it makes is a real tool with which most social interaction are performed.

It must be admitted that the issue of the source of wealth (this is exactly what we are going to discuss here) has long been fiercely debated by researchers of

economic processes. Because of this, we should take a quick journey into the thesaurus of world economic ideas and schools in order to realize one thing: how the conception of the nature of wealth evolved and transformed over time.

The first known author to launch the discussion around the source of wealth was Thomas Aquinas¹⁷. While admitting the divine nature of wealth (everything belongs to God, and a man is just a user of thing wealth), he still divided it into natural (yields of land and craft) and artificial (gold).

Montchretien we earlier mentioned not only introduced the term “political economy” but also was the first researcher who suggested their own version of the source of earthly formation of wealth. According to his theory called mercantilism (from Italian “merchant” – trader, merchant) the growth of wealth of the state originates from foreign commerce.

William Petty¹⁸ explained the emergence of wealth by the interrelation between labor and nature (land). His popular expressions included: “Labor is a father and the most active principle of wealth, whereas land (soil) is its mother”.

This idea was further developed and reflected in the teachings of physiocrats (from Greek “physis” nature and “kratos” – force) which were based on the fact that the true wealth of nations were not moneys but rather produce of agriculture.

Adam Smith¹⁹ suggested his labor theory of value, the essence of which was that the only source of value of labor, and value creation involved not just direct labor but also materialized labor, i.e. “transferred value” of the applied means of production.

David Ricardo²⁰ believed the only source of product value was labor. He concluded that a capitalist’s profit was unrequited labor of a worker.

¹⁷ Thomas Aquinas (1225-1274), a medieval philosopher and theologian.

¹⁸ William Petty (1623–1687), a British economist and statistician.

¹⁹ Smith, Adam (1723-1790), a Scottish economist and philosopher.

²⁰ Ricardo, David (1772-1823), an English economist.

Karl Marx and Friedrich Engels²¹ developed the labor theory of value and showed the origination of added value as an historic form of added product and the forms of its reflection: profit, interest, rent.

Marx and Engels were practically the last ones to discuss the origins of human wealth.

Representatives of economic thought of later generations did not emphasize the issue of wealth origination: they were a lot more concerned with finding answers to their contemporary challenges. Therefore the idea of equilibrium of value (wealth) and consumed direct labor and materialized labor was firmly accepted and established. So did the idea of taking away of part of wealth created by worker's labor by capitalists in the form of added value.

The idea of human exploitation is quite productive politically, and any attempts to disprove it get constantly confronted with the unconquerable "facts of life", thus demonstrating to us some visual examples of crying inequality of real (actual) producers and maximal consumers.

However, when Marx wrote about exploitation he was only half right. Exploitation is truly there. But this is no exploitation of one man by another but rather of a Nature by a Man. So whatever was dubbed "class struggle" was nothing else but a struggle for redistribution of the energy "pie" between competing social groups. This pie was taken away from Nature using collective efforts of all humankind.

Nowadays we distribute (mostly playing by the rules but sometimes without the same) exactly the same we did from the moment of creation of our civilization – a product procured from Nature, essentially, the energy taken away from Nature.

Since the times of a primitive flock, this product has not only immeasurably grown quantitatively, but has also changed qualitatively. Nowadays the

²¹ Karl Marx (1818-1883), a philosopher, economist, and a political columnist;

consumption of game does not constitute a thousandth of a percentage point in the aggregate public consumption. Humankind that initially fought for survival is now speeding up on its path to colonizing Nature. Using joint efforts of all living creatures, mankind takes from Nature ever more energy. It is this energetic “due” of the conquered Nature that crafted the foundation for our ever growing wealth. It has long been noticed that the level of prosperity reached by a certain country is closely related with its relative indicators of energy consumption²². This relation has a substantive rather than formal nature.

A human’s physical strength reinforced by its intellect turned into labor which, being equipped with capital and framed by social institutions, became able to indefinitely draw energy from Nature.

The source of human society’s wealth is energy in all its manifestations. The purpose of human labor is to direct the transformation of Nature's energy into the form that enables its consumption by man.

Human labor is not a source of wealth since in the process of labor a man never actually add any additional energy to that initial value he drew from Nature. By using technological tools and machinery to transform, use and consume energy, a man merely reduces the value of natural force initially procured from Nature – due to unavoidable transformational losses. Therefore human labor is not a source but a way to shape societal wealth. Labor influences certain types of Nature by others, and makes sure the first ones are brought to the form which enables it to

²² Below are the data in countries with similar climatic and natural conditions (Source: Energetik magazine, No. 11, 2003):

	Consumption of electricity (Thousand kWh per one citizen)	GDP per head (1999), USD
Norway	24.7	25,100
Canada	15.9	23,300
Finland	15.8	21,000
Sweden	14.5	20,700
Russia	5.0	4,200

meet human needs. A man uses the same method to promote a more comprehensive extraction of Nature's energy in the consumed products.

Human labor is not a source of wealth because the aggregate wealth increases as humans slowly but surely reduces their physical presence in the area of material production. An ever growing part of human activities is aimed at the direct replacement of labor efforts with work performed with the use of natural forces. The amount of own energy used in the processes of production is reduced relative to the energy value of goods consumed or accumulated by humans.

Human labor is not a source of wealth yet for another reason: creation of material wealth is not the ultimate purpose of social activities. The growth in material goods enables to reduce human presence in reproduction processes (i.e. those contrary to creative or innovative ones) and, what helps achieve the highest value, the highest level of wealth – augmentation of the amount of free time, i.e. the time utilized for creative and intellectual development of humans.

Public material wealth does not derive from labor but rather human labor, i.e. using labor and its tools. Public wealth is the energy of Nature transformed and adapted for use by men. Artificial material products are used in the processes of energy transformations. And natural material resources are used for shape those artificial material products²³.

It is Nature that gave a mammoth its energy value in the form that was accessible to humans for subsistence, Nature also gave energy potential to trees that shared that potential in a fire of primitive flocks. Nature created a cave with the temperature environment that protected our ancestry from cost. Since then, the changes mostly influenced the length in the chain of energy transformations from the initial energy-intensive natural resources to the end product consumed by a

²³ They were, in turn, the result of energy transformation that took place in abiocoen long before evolvement of humankind.

man. The essence of these transformations has not changed over time. Humans still consume Nature's energy as they in the early days.

It is crucial to emphasize the interrelation between such categories as "source" and "measure" when discussing human wealth. Intuitively, we come up with direct relation: the more is taken from the source the higher is the measure. However, this is not true.

In pricing we find the reflection of the public relations system that has been evolving over centuries. The system of prices (see Chapter II) that we all operate is adjusted not only to the correspondence of production to consumption, but also to sustaining the social aura which keeps and develops society in all directions available to it.

Moreover, there is a significant layer of public values that were shaped exclusively through using emotional (creative) energy of people. The value of these creations is also involved into the social convulsion. It cannot be denied just as it cannot be denied that any intellectual or creative activity of humans represents a process of transformation by an intellectual of earlier extracted, transformed, redistributed and consumed natural energy into emotional energy²⁴.

Therefore a price of product and a value of natural energy accumulated in any specific commodity do not match, and they only closely correlate for the most part²⁵

Management and economics

²⁴. This is precisely what the references 23 point to. The amount of statistical data confirming the close relation of the value of created social goods with the level of energy consumption in various countries is enough to accept this provision as trivial.

²⁵. For more information about this problem see **Britské listy** <http://www.blisty.cz/> ISSN 1213-1792 07.11.2006.

The entire chain, from the starting point – extraction of natural energy in all its forms – to the final point – consumption, is comprised on continuous and renewable processes that include:

- Social production (reproduction),
- Turnover and accumulation,
- Distribution (redistribution) of material goods.

The problems of setting up processes of creation, accumulation and distribution of aggregate world wealth at all levels, from a family to nations are addressed by the management system.

When analyzing the ration of management and economics a conclusion suggests that management is a tool of economics.

However, it is not that simple.

Economics is the only area of human activity that behaves like the legendary Midas, a Phrygian King, who was famous for turning anything he touched into gold. The difference, however, is that economics turns other types of activities it deals with into...economics.

So why marketing, management, enterprise management, government management, etc. are all economic disciplines studied in business schools and departments? What is the generic feature in its substance that helps attribute these areas to economics? There is only one answer: all these areas use cost (value) indicators.

Any activity that applies rubles (dollars, pounds, francs, euros, etc.) as its tool inevitably turns into a part of economics.

Cost indicators that economics are equipped with play a very important role in the economic management system. They were the ones that helped shape common public and economic complexes of all civilized countries. Their extensive utilization helps create an organic management system and cement the connections between its areas and levels. Cost indicators are the key and universal

tools that enable economics to perform its functions including forecasting and recommendations.

Wide expansion of economics resulted in the fact that currently various areas of human activities fall within its scope. Therefore many believe economics determines the direction of management of production of material goods and services, financial activities and the government sector.

However, these are illusions.

No one sane would make and responsible managerial (including political) decisions based entirely on economic arguments. Management, i.e. authority or power, implies responsibility. Economics is irresponsible and therefore it is only an element of management though economics constantly claims it has more to its name.

One of the utilitarian purposes of economics is to provide management processes with timely and systemized information including evaluation of situation and forecasting its development.

In the process of management activities in all areas and all hierarchic levels, the single most important challenge is to provide sustainability of economic system in the process of its evolution and transformation. Any qualitative and quantitative changes that entail disproportions in any economic system are both a consequence of its development and a reaction to the direct or indirect influence of competing systems and external factors. The management efforts themselves, aimed at equalizing economic system, also create and reinforce these disproportions with enviable regularity.

Economics has its ways to fix the processes of formation and evaluation of the disproportion levels in society's economic and financial system.

The only way to ensure stability is to correct the structure of all resources the society has at its disposal in order to achieve proportionality in the development of both separate elements and the entire economic and financial system.

The influence management at all levels of the global economic and financial system is aimed at changing the structure of a body of used resources including the process of exclusion of some types and inclusion of other resources. By influencing the structure of resources management solves the problem of elimination of emerging disproportions by achieving stability together with dynamism of development of the managed system.

Thus, in order to liquidate enterprise losses (losses are an indicator of existing disproportions) an equipment and machinery structure may be changed, a personnel structure may be changed, as well as the structure of consumed materials, energy costs, product mix, etc...

Fall in exchange rates (an indicator as well) may lead to management impact on changing the structure of the state-owned finances, international borrowings, and the asset structure of commercial banks...

Budget deficit, inflation, unemployment – are all indicators of disproportions that evolved in society's economic system, and the methods of their rectification include structural changes in terms of income and expense items in the state budgets, the structure of allocation of earnings of commercial enterprises (due to the increased or decreased tax burden), etc.

It is worth emphasizing that an economic system of any society at all stages of its evolution changes under influence from both exogenous (external) and endogenous (internal) factors. The economic and financial system of any society is both adaptive and aimed at achieving proportionality and equilibrium. Such factors as unemployment growth, increase of inflation, overstocking and deficit are not only indicative of a disbalance in the system but also reflect natural processes of bringing economics into equilibrium and proportional condition.

Exogenous factors are formed by the management system, whereas endogenous – by immanently inherent to the economic and financial system of society. Both are targeted at achieving the common goal: the system's equilibrium. Therefore

overcoming crises in financial and economic area is an algebraic sum of action of exogenous and endogenous groups of factors. It is impossible to find out which of these two groups prevail in the solution of this or that managerial problem.

Sustaining balanced development, to which any element of an economic system strives for, resembles acrobat's balancing on their wire. Only the conditions of economic management are a lot more complicated and severe: the rope constantly changes its tilt angle and is always rocked by external forces while the movable cargo constantly changes its center of gravity. There are plenty of rope walkers on the rope at the same time while they all have alternate routes and directions. Not all of them are able to keep balance, plus there are many of those willing to get on the rope and test themselves.

The desired equilibrium can be reached by forming a proportional structure of resources used in the processes of production and distribution of material goods. The search of optimal proportions is probably the most important challenge the economics has always faced. Among the said proportions is the one between consumption and accumulation.

Interindustrial and intraindustrial proportions are adjusted in the management process when shaping the resource base at all levels and in all areas of the global economic system. Modern economics is able to orientate management to eliminate and avoid the most salient disproportions. However, disproportionality is a constant, permanent condition of any economic system. Proportionality is some kind of an ideal, and possible, instantaneous condition, that is subject to continuous disproval in the economic practice by means of development processes and adjustment of production to the changing external environment. The purpose of management is to build a harmonious economic system, i.e. a system that is able to constantly evolve without creating any internal disproportions. This purpose is akin to searching a scheme for universal public welfare. It is impossible to reach but we should strive for it by all means.

It is worth admitting that the “scarcity” problem based on the earlier cited definitions of “Economics” is permanently dealt with by economics.

The problem of finding equilibrium in the economic system inevitably leads to identifying deficient types of resources that limit the development and identification of “bottlenecks” in the structure of equipment or in the professional and qualification structure of employed labor resources.

The identification of resources that limit production development and the bottlenecks in production chain is a starting point for the development of activities targeted at developing new machinery and applying advanced technologies. By suggesting the methods of evaluating an economic effect, economics enables heads of production enterprises to select those technological innovations that help resolve the issue of “scarce” resources with maximum efficiency.

However, a broad variety of resources may fall under the “scarce” category: scarce resources under the terms of one production may turn common or even surplus for another type of production. Technology change or transfer to new types of products may immediately turn a deficient, rare resource into its direct opposite. And these processes constantly take place in every company, every enterprise. It is there and not on some government level where the problems of solving “bottlenecks” and distribution of resources that hamper industrial process. This is why the notion that “a society with limited deficient resources decides what, how and for whom to produce”²⁶ - is false.

If we admit that “Economics is a science that studies ways of distribution of limited (scarce) resources for production of material goods”²⁷ then it would be natural to question: which science studies ways of distribution of unlimited (not scarce) resources?

²⁶ S. Fisher, R. Dornbush, R. Shmalensky. *Ekonomika*, M., 1993. Page 1.

²⁷ C. McConnell, S. Brew. *Economics*. M., 1955. Page 97.

Besides, I would like to notice that with reference to the terms and conditions of a company or enterprise the issues of industrial resource distribution are related to the competence of technological, not economic departments. This is also an indicator of the fact that economics is not there to allocate resources.

The substance of the aforementioned definitions of “Economics” may be more comprehensible if we consider that there has not been a single moment in human history when the economic system was in a state that enabled to build it completely anew. There has never been such a period of time when society could have a single free instance during which it could evaluate “scarcity of resources” and possible ways of their distribution in the preoccupation of a problem of “for whom, what and how much to produce”.

At any moment in time any and all resources that any given state, region, enterprise may have are already distributed and already accepted, moreover, the decisions on setting up production and utilization of material goods are practically made. Thus, a free will of a management authority is strictly limited by the inertial trend of development of the social economic system at all its levels.

Even the annually passed state budget is for the most part formed and reconciled before its development process even begins: there are schools and hospitals, there is an army of government officials and the military, orders have already been placed for long lead-time products... All of the above must be and will be financed.

Yes, there will be adjustments – the structure of a new budget will be different from the previous one. However, this will happen not just in accordance with evaluations of emerging disproportions but also as a result of other factors.

A society through its institutions decides what adjustments need to be made into the established economic and financial entities based mostly on non-economic reasons. There are other factors that are not taken into consideration. They go way

beyond the scope of economics. And their influence is unquestioned, while in some cases – even prioritized.

Naturally, the problem of searching an equal and proportional condition can be positioned in many ways and resolved by many fields of the society's common economic system.

Executives are managers in the three key areas of activities (production, circulation-accumulation, and distribution) that require affine intellectual products which are formed by various economic methods and have different shapes and forms.

With a certain degree of simplification, one can identify three directions (areas, strata) in the global system of societal economic processes management:

- Management of product-good-service-making (industrial) activities,
- Management of society's financial system,
- Public management.

Each of these three main directions corresponds with the three relatively independent branches of economics: microeconomics (economy), finance economics (chrematistics), and macroeconomics (polysonomia). And though one would like to compare their significance and acknowledge the selected directions as levels of the economic system, one should rather withhold from doing so. And though we are quite used to the understanding that there are various levels distinguished by some priorities in the common financial and economic system, in real life, however, the forms of connections the government authorities, financiers and industrialists make cannot be unambiguously interpreted as a system with rigid subordination.

Currently one can discuss the existence of at least three significantly different fields within the common intellectual activity – economics, rather than discuss the branches of economics (micro- and macroeconomics). These fields of economics

create affine information products designed for use in management processes at various levels and areas of the common societal financial and economic complex. Each field of economics solves the problems of approaching equilibrium, proportional state in their respective scope (areas, levels) of the common financial and economic system. It is worth emphasizing that the elimination of disproportions in one field (level) of economics immediately creates the possibility of forming a non-equilibrium condition within the other field.

Thus, a drive to cut production costs through reducing salary potentially stimulates the growth of unemployment which is viewed as an indicator for reinforcing disproportionality at the government level. At the same time, fighting inflation through raising the Central Bank interest rate entails the ratio between own and borrowed funds of manufacturers of goods and services, while not at all promoting their desire to form an optimal structure of their resource utilization.

The information required for searching methods and means of achieving equilibrium and proportional resource structure substantially varies in all of the three aforementioned areas of management. In market-oriented economies there are three relatively independent areas of research, each of which provides results for its own area of management. In their daily operations, millions of business entities do not use either the Valras law or the Sey rule. The public governance does not change depending on the results of research aimed at improving the labor compensation system in any field of economy.

The use of results shaped deep within the inner structure of economics suggests that the society has clear understandings of its qualitative characteristics. In this connection, one can say the following: Most people involved in management are sincerely convinced that economics delivers to them a product of scientific nature.

Is that so?

Natural sciences and unnatural sciences

Among the many classifications of sciences the most applicable and convincing ones are those that divide them into natural and liberal ones (humanities). And once there is such a division then apparently there should be a system of priorities.

Economics is considered to be a liberal art.

Back in my youth, I worked for a few years in the United Institute of Nuclear Research in Dubna, Russia. Working over in that R&D center enabled me to study and compare my research – a fundamental science, physics of atomic nucleus – with the area of my professional interests – economics (more specifically – economics of sciences).

One of the jokes by physicists that were quite popular at the time was the one concerning the classification of sciences. All sciences – they joked – were divided into natural and unnatural ones. Of course, this joke is less current and relevant nowadays since at the time unnatural sciences included Marxist and Leninist philosophy and political economy of socialism, as well as history of the Communist Party of Soviet Union. However, my favorite economics also fell into that category. That was very offensive.

No offence today, especially given the fact that I tend to agree with this division. If one identifies physics as a science, it is worth admitting that economics is not a science.

Or vice versa.

The division to sciences²⁸ into exact (natural) sciences and liberal ones (including humanities) seems today as something self-evident, while this demarcation is been there for no more than one a half century. This customization of sciences division into two classes by the object of studies – nature and spirits – is first and

²⁸ Professor David Sheinberg wrote that Rutherford divided sciences into physics and stamp collecting. But, according to Rutherford, stamp collection could grow into physics if there were sufficient facts and observations. Rutherford considered chemistry to be stamp collection as well.

foremost correlated with the names of W. Dilthey and W. Windelband²⁹, representatives of the Baden school of Neo-Kantianism.

However, since it was invented to protect the forms of knowledge that initially had not fit the natural scientific paradigm, this classification enabled to establish equal relations between its components³⁰. Apparently, the laws of universe stay in the way.

The grand successes in physics, chemistry, biology that shook the European minds in late XIX Century laid the foundation for radical reconsideration of priorities in the cognitive process. Speculative philosophy that was in a pitiful condition on the background of the crisis of Neo-Hegelianism which discredited the belief in possibility to comprehend the world with clear conscience was rejected as a powerless rudiment. Science at the turn of XX Century was proclaimed to be the only effective way of interacting with the world.

The difference of science as a branch of human intellectual activities from that of natural sciences is revealed in many aspects.

The laws of natural sciences are interconnected. We are able to trace the history of physics evolution in accordance with the laws invented by physics. Therefore from the standpoint of natural sciences the laws of liberal arts have some strangeness to them. Most of these laws are short-lived. Affection with one law grows into no less wild affection with another “imperishable” teaching. However, its progeny leaves nothing of their precursor’s original standing.

²⁹ Wilhelm Dilthey (1833— 1911) — a philosopher-idealist who was the first to introduce the notion of a science on spirits (Geisteswissenschaft).

(Wilhelm Windelband; 1848 -1915) — a German philosopher-idealist.

³⁰ By and large, the adherents of Baden school of Neo-Kantianism introduced the notion of a science of spirit (liberal arts) applicable to history. History has a specific subject – a form in which human spirit dwelled (though normally we talk about individual objects that cannot be attributed to any class at all) – that requires respective methodology: empathy, intuition, etc. As a consequence, it is clear that there can be no verification and reproducibility of results and making any laws, whereas the perspectives of applying the received knowledge in any field of practical knowledge are quite obscure.

Humanities (liberal arts) and economics as well appropriate, with unimaginable ease, the title of “law” to their logical constructions of doubtful nature.

Marxism has the law of value. According to this law, goods are traded at the equivalent of their labor costs. It is quite unclear as to how and how makes sure this equivalency is maintained. Even the apologists of this dubious hypothesis are not sure of it.

The opposite side to Marxism has the same law for this occasion – the law of maximum usefulness. According to this law, the first spoonful of soup brings everyone more pleasure than the second one. However, in my opinion, this law does a poor job explaining the usefulness of water turbines and walking excavators – for some reason, the law of maximum usefulness does not at all touch the area of industrial goods.

At the same time, the requirements to what we can indeed call a science are rather stiff though they are subject to changes in the process of evolution of the science itself. The process of these changes is a subject of studies of the science. Positivism, neo-positivism, post-positivism, despite all the differences between them, represent science as a method that satisfies a sum total of principles: Verifiability³¹ falsifiability³², fallibility³³, reproducibility, and systemic nature of its end result – knowledge.

It is this yearning to comply with these requirements perceived as a guarantee of truly scientific results that drove to multiple attempts to transfer physics and mathematical methods to the original soil of other disciplines. In some areas like

³¹ Verifiability (Lat. *verificare*—to prove true) — is one of the basic principles of logical positivism according to which the verity of any assertion in the world must be eventually proven through comparison of the same with empirical data.

³² Falsifiability - a scientific character criterion of an empirical theory. A theory is falsifiable in case there is a methodological possibility to disprove it by setting this of that experiment provided such experiment was not yet set. Thus, theories built on trust and belief relate to unscientific ones.

³³ Fallibility – a scientific character criterion that reflects a principle possibility of making mistakes based on the acknowledgement of relativity of knowledge and the need for constant advancement thereof.

ethics and aesthetics these efforts failed completely, whereas in others they seemed to yield positive results: for instance, in sociology that was initially conceived by O. Cont as “social physics”.

“Economics” was shaped in the course of this general trend.

Attribution of liberal research to the class of scientific research is based on the absolutely authentic fact of existence of creative labor elements in such research. Yes, each atom of scientific creation gives birth to new knowledge. But knowledge should not only emerge but also mature and succeed. In order to do this, knowledge is shaped, fixed and repeated until it is eventually recognized by the scientific community. Once knowledge passes all these stages it flows into a vessel named science. I should emphasize that the key requirement to scientific knowledge is an absolute, verifiable possibility to reproduce and repeat earlier derived results.

Failing that there is no knowledge and no science.

So what do we have if the aforesaid conditions are not met?

In this case we have something called experience.

The basis for shaping experience revealed in identification and fixation of repeated relations is creation; however, this is a local and individual creation.

Experience foregoes knowledge; however, it can turn into knowledge or remain just what it is. Natural sciences draw hypotheses for their future discoveries from experience.

Knowledge is immortal, whereas experience can die with its bearer. Experience is a venture (risky) enterprise, in a sense that it risks not to be reproduced, knowledge.

Scientific knowledge is absolute, experience is relative. The form of relations between voltage, resistance and current does not depend on where we are located: in Miami or Siberia. An experience you gained in heating your house in Yakutsk would be useless to you when you move to Florida. Any experience means

fixation of repeated events and occurrences, as well as finding cause-and-effect relations that could become knowledge or could retain their initial qualities.

An important chunk of experience is experience of reality. This experience that we gain and lose, pass from one generation to another is not formalized in science but rather in traditions, morality, painting, arts, music... and economics.

Representatives of “haute”, or as it is sometimes called “fundamental” science, assert that its ultimate purpose is to produce knowledge and unveil mysteries of this world. And that’s it. *это*. This is where we find the first significant difference: Economics, even in its theoretical segment, insists on the practical or applied value of its results.

I personally like this nice hypothesis of physicists about this “high destination” of fundamental science. However, this hypothesis fails when faced with pragmatism that has been inherent to humankind at all times. Society has never, even in its darkest hours, refused to support science, however, society was hardly motivated by its desire to enable several privileged individuals quench their curiosity at society’s expense³⁴. This happens sort of naturally.

Substance has not developed or evolved in the timeframe of human civilization. Any “new” ways of existence of substance found by physicists are new to humankind only.

The world of people is not the same it was before, both in terms of form and substance. And we cannot say anything as to what might happen with it tomorrow, except that it will not be the same it is today.

An incentive motive for developing natural sciences is human curiosity backed up by practical usefulness of the results attained by such natural sciences.

An incentive for developing social sciences is a burning, ever advancing concern of mankind about its own survival. Immediate usefulness of results attained by these sciences is at least disputable. However, society rather intuitively realizes

³⁴ Allegedly the author of this fine irony is Leo Artsimovich.

the need to sustain these activities since society evaluates their results as an element of protection from the ever advancing chaos.

Human economics activities are based on a natural material foundation. This foundation is a subject of natural sciences. Any transformations of nature performed by man through the use of natural forces are based on scientific developments and discoveries of physics and chemistry.

And still the processes of social interactions as well as those of purposeful economic activities fall out of the sector where the results of natural sciences research are allocated. The specific nature of economic as compared with physics is so significant that one can argue about the principle differences in the fields of cognition having a basic nature.

While positioning itself in the natural environment humankind bravely applies the laws discovered by physics, however, people interact with each other applying quite different laws. Moreover, the experience of human evolution suggests that fundamental laws of physics and other natural sciences are absolutely inapplicable in the social sphere – action force in the opposition between people is never equal to the counteracting force.

The principle differences between the two areas of research activities – in material world and public relations – are revealed in many aspects.

By characterizing subjects of scientific activities one cannot draw any parallels between humanities and natural sciences. Where a naturalist should level their personal parameters as much as possible, a humanitarian (historian, hermeneutist, for instance) on the contrary should get used to their material. A status of humanitarian scientific nature is thus fixed through drawing a parallel: a specific object – corresponding method.

The degree and type of influence of the two analyzed directions of applying human intellect to processes in the developing society are quite different.

Natural sciences that study the world of matter do not change the laws of this world, however, but they by forming and changing the foundation of social existence - material production – influence interaction processes in the world of men.

Neither accuracy of measurements, nor forecasting potential of humanities have ever even closely approach the threshold acceptable in physics, beyond which was the scientific result. Moreover, it grew obvious that the research of such objects as society and individual impacted them in ways that could entail their transformation and extinction of those tendencies they, actually, tried to find and study.

The law of gravity has never changed its constant a jot; while the transition to cashless settlements has radically altered all the foundations of the monetary system in a world for which this novelty was not designed, and in trends they could not initially foresee.

Most generally, this phenomenon was dubbed “reflection”.

Any attempts by people to understand and influence events have significant impact on processes taking place in society. And this most significantly differentiates humanities and economics, in particular, from natural sciences. George Soros made a very accurate definition of this difference: “Economic and social events unlike those events studied by physicists and chemists include thinking participants. It is them who can change the rules of economic and social system simply in view of their own understanding of these rules”.³⁵

Natural sciences that provide for scientific and technical progress due to the growth of scale and changing the quality of material production impact the increase of interrelations of all elements that form society, and thereby greatly

³⁵ George Soros: The Crisis of World Capitalism. The Open Society in Danger. Translation into English M.: INFRA-M, 1999, Page 32.

complicate the issue of securing stability in the process of its evolution. Such problem is solvable with the use of results of liberal (humanitarian) research.

The issue of scientific status of any area of intellectual activity touches significant interests of large groups of people. It should be admitted that there is a psychological component to the identification: to maintain the title of science means to substantiate and defend the right to existence and public recognition of the respective types of cognition.

The hyper effect made by the space flight or fermenting artificial tissues is of course difficult to compare with intuition, knowledge of individual things, uniqueness of event. Thus the widest range of cognition ways, many of which have nothing to do with reason and logic, once available to man are now marginalized.

Science has always been perceived by common mind through the prism of its results, i.e. eventually, from the practical usefulness standpoint. Hence a number of disciplines have gained some sort of an “inferiority complex” caused by inability to influence its object through “scientific” methods.

Failure to formalize such phenomena as the beautiful and good has placed ethics, aesthetics, let along theology, into some kind of a ghetto where they somehow continue to exist unburdened by any complexes regarding their own methods. However, humanities became tightly obligated to permanently maintain their status of own “scientific nature”.

Economics is in the same category.

In the process of writing this chapter I found a Financial Times article by John Kay named “Why data, soft or hard, cannot replace eyes and ears”. I quoted it below with some abridgement because John Kay’s material has a lot in common with the thoughts laid out here, while it also enables to add some interesting nuances and tints to the analysis:

“In all areas of human endeavor, there are hard data and soft data. The happiness of a society or the progress of a civilization, are multi-dimensional: components are determined by subjective consensus, not objective measurement.

While the reputation of economists has been in decline, naive acceptance and popular distribution of economic statistics has grown...

Scientists and wannabe scientists such as economists resist the use of soft data. Lord Kelvin said that unless you can measure something, your knowledge is of a meager kind. But Kelvin, although a great physicist, was a silly man and he was as wrong on this as in asserting that manned flight was impossible. A complex world can often only be described through soft data. Every generation has followers of Kelvin, who attempt to measure the unquantifiable and balance the incommensurable. Why we find faces attractive, what makes us happy and how civilizations progress are good questions, but to take measurement too far leads to absurdity. Rankings of national competitiveness, or the assessment of drugs through quality-adjusted life years, are pseudo-science, like listings of the greatest poems.

You can count the notes in the wages envelope and, while there is some room for argument round the edges, an objective number for payroll can be determined with reasonable accuracy. But profits and productivity are soft data. Enron, like others, ruthlessly exploited ambiguities in the concept of profit to meet the numbers.

Output seems like a hard number – and would be if it were simply a matter of counting the widgets that leave a production line. But the output of a modern economy is made up of thousands of differentiated products of changing quality and composition. The US productivity miracle was in part created, not by finding new facts about the US economy, but by reclassifying software expenditure as investment and adopting aggressive assumptions about falling computer prices.

The key number used to measure economic performance is gross domestic product. But few politicians or traders could actually define it. GDP is not, exactly, a measure of either business output or consumer welfare, although it is loosely related to both. It is safest to say that GDP is the number you arrive at if you follow an internationally agreed set of statistical conventions.

So long as everyone follows these conventions, movements in GDP tell you something about national prosperity and economic progress, even if it is not entirely clear what. But no economic data, hard or soft, can ever tell the whole story. Prosperity and progress are soft concepts and official statistics are at best a supplement, not a substitute, for evidence of eyes and ears”.³⁶

Economics: a science?

It must be admitted I was not the first one to question whether economics was a science. It keeps many intellectuals pondering until this day. For instance, Professor Daniel McFadden at California University and a Nobel Prize winner in Economics in 2000 read a lecture at one of symposia named “Rationality for economists?”³⁷

Contemplating the status of economics we should first admit the existence of three fields (branches) of this undoubtedly highly intellectual type of human activity. And though externally products created by microeconomics (economics), economics of finance (chrematistics) and macroeconomics (polysonomia) are significantly different in terms of their level of sciolism, each of them, however, has elements of a scientific entourage. There are scientific publications, scientific councils, academic degrees and titles for people that dedicated themselves to perfecting the classification of capital assets, search of better methods of indirect cost allocation or creation of new variants of an interindustry balance semi-

³⁶ John Kay. Why data, soft or hard, cannot replace eyes and ears. Financial Times, 30 January 2007.

³⁷ Kommersant No. 191 dated 12.10.00

dynamic model... It would be fair to say that macroeconomics (polysomia) pretends to have the highest public recognition of its scientific quality. Therefore we will focus on this field in the remaining part of the chapter.

Any evidence proving that economics is a science, just like physics, are in the range from ascertaining procedures like awarding Nobel prize in Economics and Physics to indisputable truths contained in economics that unite all its adherents. Speaking of Nobel prizes.

Indeed, a Nobel prize in economics is annually awarded. And there seems to be nothing else to it. However, there are facts one should think about in this connection.

The occupational structure of Nobel prize winners in economics is quite interesting. It feels like this prize is some sort of a derivative (second or third) from the non-awarded Nobel prize in mathematics.

But that is not the point. What is important is this.

Some time ago an insurance fund *Long-term Capital Management* went bust. This fund used to build its arbitrage strategies using the rationale proposed by a group of 1997 Nobel Prize winners in economics. In other words, these arbitrage strategies were first acknowledged as a pinnacle of economic and scientific thought and then they had been tested in real world. Although we all know that in science things must be the other way around.

The issue of existence of indisputable verities of economic nature as a fact that is able to prove complete resemblance of economics to natural and technical sciences seems to be better fit for substantive analysis.

Gustav Schmoller once claimed in Wilfredo Pareto's³⁸ presence that there were no economic laws at all. In response to this Pareto asked if it were possible to

³⁸ Gustav Schmoller (1838 – 1917) — a German economist.

Wilfredo Pareto (1848-1923) – an Italo-Swiss economist and sociologist.

dine in a restaurant free of charge. Schmoller replied it was, naturally, impossible. But this, said Pareto, was exactly a natural law of economics.

If this is an example of a “natural law of economics” then this is also an example of a principle difference of laws of economics from natural laws.

That it is impossible to dine in a restaurant without money is – from the scientific standpoint – not a law but rather an order (experience) that emerged at some stage of societal evolution and rarely violated. A law discovered by science is called a “law” because it recognizes neither time action limits, not exemptions from its inevitability and unavoidability.

A lack of clear cut criteria of verity results in defending economic laws and regularities on an emotional level. In this connection, one example I found in Egor Gaidar’s work looks rather interesting. In his work “The Days of Defeat and Victory” he characterized the atmosphere of scientists and practitioners that create and try to apply their research results in the field of economics. For instance, the author describes their contacts with R. Dornbush, a Professor at Massachusetts Institute of Technology: “It seemed that Rudy Dornbush felt alerted at first; he somehow thought we would prove to him inapplicability of standard relations between the growth of money supply, budget gap and forex rate in the post-Soviet countries. However, when he became certain that our hypothesis was exactly that..., our conversation took the course of discussing specific issues...”³⁹

It is a strange world, isn’t it? Powerful people that make decisions that have impact on millions of other people use results of investigation the author of which looked around in search of opponents – casual situation for them as it seems. The author seems to lack strong proof but they have multiple opponents that terrorized them to an extent the author felt “alerted”. Thus, all the author had was a

³⁹ Egor Gaidar, Works, Volume 1, Page 263: P. Eurasia, 1997.

hypothesis subjected to doubt. But others have even less. And I should admit this is the strength of economics.

Natural sciences lead humankind in its progressive march. These sciences are at the cutting edge of scientific and technical progress. The laws discovered by natural sciences get transformed into technology that enables mankind to draw ever increasing amounts of energy from boundless depositaries of Nature.

Economics follows in practice's steps. Economics can explain a crisis that already took place (how it does that is a separate issue). However, in order to develop a theory of overproduction crises, these crises should have happened. Prior to occurrence of such crises there were no theoretical developments, and there couldn't have been as a matter of principle.

Economics is able to forecast with uncertain accuracy the occurrence of only those events that have already occurred in reality. Economics is unable to "invent" any brand new phenomena in the economic sector that have never taken place before. Economics is unable to foresee any cataclysms we have not lived through yet.

By performing its information function economics always gives a picture of the past or a picture of something new in withered colors of the past.

The most important, most salient distinction of economic science from any other natural and technical science is that economics does not have so-called "rigorous proofs". All its achievements based on generalization of economic practice are logically structured or represent hypotheses with various levels of probability (credibility).

Questioning the scientific status of economics, one can conclude that in this case we deal with an independent field of intellectual activities, strikingly different from that of natural sciences. Economics that follows practice generalizes the experience of financial and economic activities in society while offering

information to management that enables to reduce the level of uncertainty for decision making on the one hand, and avoid past mistakes, on the other hand.

I thought an example shown on www.strana.ru was quite demonstrative in proving a point that economics actually applied know-how and systemized knowledge and experience shown on that website.

This example was interesting because it had to do with a very current problem of international economic crisis.

The undeniable fact that devastating crises no longer happen in advanced national economies in the extent they used to ruin these economies in the pre-WW II years does not, however, indicate that the economic science has finally found a panacea for such crises, and therefore it made the “second coming” principally impossible. Here is what a newsmagazine *Expert* wrote exclusively for strana.ru:

“However, the events of this March-May (2000 – *S.T.*) were not perceived by the American public opinion as a market crash. It helps to look at the 1929 crisis differently. One of the most widespread versions of what caused the Great Depression was that the Federal Reserve System sustained strict monetary policy instead of cutting its interest rates and support the economy with additional liquidity. This provoked deep economic recession. However, it should be remembered that this criticism was for the most part based on the knowledge of what the FRS actions led to. In the heat of those events their stakeholders did not have that knowledge and therefore they evaluated the situation differently. The spring crisis at NASDAQ resembles this situation. However, the complacent assessment of the spring events does not at all mean it was not a starting point of a full-scale crisis”.

Yes, nowadays, American financial bureaucrats equipped with the 1929 experience chose not to repeat the mistakes of their predecessors. And possibly this resulted in localization of the crisis though nobody would be bold enough to scientifically prove this relation. This is a pure assumption: no more, no less.

Building of activities designed to churn out economic recommendations and forecasts in the system of public relations most directly depends on the acknowledgement of economics as one of the branches of science. In that case, the existence of institutions of economic profile, scientific councils, degrees and titles, as well as Nobel prizes in economics, becomes quite comprehensible and justified ...

Denial of scientific (in a sense of similar to natural-science) substance of economic studies will inevitably run against personal and proprietary interests of the groups that build their case on the basis of realizing external attributes of scientific content in the fountains of verbiage and piles of waste paper in their attempt to produce it as economic research.

A lot in our world depends on naming things right. It is therefore very important to define the status of economics as one of the fields of human intellectual activities. To call economics a science is convenient but incorrect.

Economic research contains elements of scientific activities that are immanently inherent to such research – collection of data, systematization, processing, and analysis. Undoubtedly, these studies include an element of creativity – they form hypotheses that explain the nature of processes identified by the analysis. However, in this smooth flow of processes that look like they have a natural scientific substance we have a breakdown: a hypothesis cannot be experimentally proven. A new hypothesis competes with older ones by its degree of external verisimilitude – not by the results of its experiments. The hallmark of verity of a hypothesis is some algebraic sum of expert opinions – not practice.

Yes, one should acknowledge that nowadays in some branches of science (mathematics, theoretical physics) there is a provision under which the essence of searching new knowledge is only understood by a handful of scientists. Under such circumstances a definition of a science is what this small group of scientists agrees upon. However, this vanguard is unable to fully detach from its base to

empirically prove their hypotheses. Because if, for example, it were proven there were no gravitational waves then many sophisticated theoretical developments would inevitably turn into scientific trash. It would not only disprove the theory of probability but also the alternative gravitational theories since they are all based on the admission of finiteness of velocity of gravitational propagation.

Economics theories cannot be proved or disproved using the methods of correct (from natural-scientific standpoint) experiments.

This is precisely why discoveries in economics lack the absolute universality of discoveries in natural sciences. Just as American physics (different in meaning and content from German physics) is impossible to imagine, it is inexpedient to talk about a global universal economics. It is so surprisingly diverse in countries like Japan, China, Australia, and Denmark. This is where we find yet another fundamental distinction between science and economics. A science is apolitical and impartial. Economics, on the other hand, not only serves national interests but shapes them as well. Therefore it is at least biased, and at most partial.

The aforesaid specific features of economics enable its theories to infinitely lose touch with practice while economists titled scientists are able to permanently polish the mysterious image of economics that only exists in the minds of financial and economic system.

The possibility of emergence and expansion of a gap between economic practice at all its levels and the so-called “economic theory” is underpinned by the social system of relations.

Economic evidence are not subjected to unbiased critical analysis by practitioners since heads of companies and enterprises, as well as government officials are for the most part not ready to objectively and comprehensively evaluate the quality and scientific level of economic studies, as well as the information content provided by business schools.

Economic researchers are also unable to critically assess significance of their economic hypotheses. Most of them lack practical experience.

Most companies do not apply either Valras law or Say law in their day-to-day operations. Their own recipes for management are strikingly different from what thick economic books have to say about it or what they teach in business schools. Company owners and managers review this real fact of their business activities as a one-off case, not an element of a general mismatch of economic theory and economic practice. They believe there are other places where economic developments are actually applied and actually work though they may be unacceptable to them. And they vigorously though vainly search for such precious places.

One has to know very much, have a stamina, and be very independent, successful and bold – just like Sam Walton, a founder of Wal-Mart, an American retail giant – to claim that: “I don’t care if we don’t live in accordance with somebody’s theoretical projects as to what we should do. This doesn’t matter at all”.⁴⁰

Speaking of identification of contemporary economics as a field of intellectual activities, I reckon the term “theory” is the most relevant one based on its substance.

Unlike sciences, there may be many theories. This is in fact expresses in the name of one of economic disciplines: “History of Economic Theories”.

The change of term would testify to launching of the process of purging economics from extraneous pseudo-scientific features, acknowledgement of economics’ distinctions from natural- and technical sciences, and would also remind of the existence of fundamental limitations on the possibilities of managing development the financial and economic field of society.

⁴⁰ Sam Walton. *Made In America: How I Created Wal-Mart*; Translated from English – 2nd Edition. Published in Moscow: Alpina Business Books, 2004, Page 107.

At the same time, the use of the “theory” terminology for identification of economics as a field of intellectual activities suggests existence of a professional community involved in the studies of economic interactions processes including those of a theoretical level.

A negation of similarity of economics to the natural-scientific status does is not the same as adjudicating this area of intellectual activities as “second-rate”. Potentially, economics is no worse and no weaker than physics. It belongs to a qualitatively different realm of the search for Truth.

The fundamental distinction of methodological foundations and results of physics and economics is for the most part predetermined by affine characteristics of the objects of their studies that have absolutely different forms and levels of stability and changeability.

Blinking trends

None of the fields of natural sciences have subjects have would remotely remind the changeable subject of economic studies. A body placed in liquid behaves quite predictably and correctly displacing as much liquid as Nature prescribed – this is what Archimedes told the world a while ago. How can one characterize behavior of any country – it is always unsteady. However, the search of regularities in consumption of material goods is only one of the myriad of problems constantly popping up in the world of economics.

Economics has long learned to overcome such problems by was they learned from statistics. However, on its way of turning into science economics has several more important barriers.

The principle differences between the two analyzed fields of searching for the Truth are based on the fact that economics and natural science try to find and study trends that differ not only qualitatively but also in terms of duration of its

existence. This is where there is a limitation imposed by Nature on humanities and that is what makes them different from natural sciences.

Trends study all sciences (this is their main activity) but only physical trends are stable, normally – always since they can be discovered, described, reproduced and the knowledge derived from this can be utilized.

And, on the contrary, at various stages of human evolution certain forms of human interaction emerge and disappear. Tendencies are formed on the basis of these forms. However, their lifetime is limited. These are blinking trends.

For example, there was once a natural swap (exchange). It was based on specific proportions of exchanging axes for spears. These proportions have changed over time and eventually disappeared due to the liquidation of the very process of exchange. Maybe some sort of trends could be identified in these changing proportions. But who needs these trends today?

Undoubtedly, at some point of time under feudalism the structure of requisitions from peasantry was quite interesting (but hardly well developed). This system included statute labor and gavel work. Naturally, some trend could be identified in the change of this proportion but this trend disappeared with the conditions that had spawned it. Nowadays it does not matter whether or not those who managed the change evaluated it right. Let's just say: under current conditions it is not relevant.

There is no evidence of the so-called “transparent” economic trends that are revealed throughout the entire period of societal development. They emerge and vanish faster than social and economic formations. And since there are no trends like these they cannot be “captured”, analyzed, fixed, and therefore ultimately described, and most important, - their changes cannot be forecasted with the accuracy of natural sciences. I would take my chances and assume there will never be such a formula that would enable us to determine our economic future.

However, economics constantly tries to forecast since society expects from it just that: reliable forecast. The basis for any forecast, no matter what method it uses, is an identified and fixed trend. Economics could also identify trends but these would be blinking ones – emerging and fading trends. Their use in forecasting is fraught with getting quite opposite results.

In 1958, A. Philips, an Australian economist who lived in England, published an article in *Economica* in which he explained the back action he discovered between the dynamics of inflation and unemployment. In his conclusions, A. Philips referred to the statistical data on Great Britain for almost a century, from 1861 to 1957. Later, his conclusions were confirmed by American authors P. Samuelson and R. Solow. They also formulated a notion on coming of the “Golden Age” of economics since they deemed it was quite tempting to use the newly found “regularity” in formation of the government monetary policy.

It didn't take long until a politician who dared to apply this scientific achievement in real life. This politician was Richard Nixon, a US President. Since 1969, his administration has tightened up the fiscal and taxation policies (they changed the resource structure!). In doing so they referred to the achieved over employment. The result they achieved as early as 1971 surpassed all their boldest expectations. The nation entered the stagflation stage, i.e. economic stagnation was coupled with inflation

President Nixon resigned; however, he did this later and under different circumstances. But who knows whether he could – like President Bill Clinton – fight for office if he were more critical towards recommendations from his genuinely mistaken economic advisors⁴¹.

⁴¹ The Nixon administration's experience became an element of Bolshevization in the free market world. This experience was doomed to fail. It could happen later, not necessarily in 1971. But the essence of this problem remains unchanged. The experiment we, the Russians, set upon ourselves yielded even more impressive results.

The trend discovered by A. Philips has vanished by now. A correlation between unemployment and inflation has been described in scientific literature in such terms as “unforeseen inflation”, and the graph correlating these values transformed from a curve into some sort of a spiral. Nobody proposes to apply the Philips curve today for actual formation of economic policies. But this case has become a landmark. It is therefore easy to foresee new attempts to “steer” society based on the prolongation of accidentally identified correlation of two (three, four...) indicators, in a naïve hope that billions of other factors would voluntarily freeze their actions for this period and would entirely freeze their influence over the final outcome.

Blinking trends is a trap that ruins economists’ reputations built upon their successes in forecasting.

“Mineral”, an information and analytical center, wrote on *January 11, 2002*: “Andrei Illarionov, an economic advisor to the Russian Federation President, believes raw materials prices have a long-term trend to decline and “oil prices, no doubt, will go down in future”. According to what he today advised journalists in St. Petersburg, between 1870s and 1970s the average price of one barrel of oil in the prices of 2000 was \$10. In his opinion, “undoubtedly, this price fluctuated; sometimes it went higher sometimes it fell”. In his words, “the intervention OPEC and other non-market mechanisms of market regulation resulted in oil price peaks in certain years”. However, the “market will normalize things” – said Illarionov. In his words, since 1980 there has been a stable trend of oil price reduction. Therefore, reckons the presidential advisor, it is quite natural that the price will stabilize at the \$10 per barrel range in short term (underlined by myself, *S.T.*) and will possibly continue to fall in future. According to Illarionov “this is an international regularity and therefore we should take it quietly and draw necessary conclusions, prepare for this”. (See www.mineral.ru).

So what's behind this mistake, as is obvious today? Nothing special, really – the trend has changed.

To console Mr. Illarionov I should say that other reputable and authoritative oil price forecast experts tend to make big mistakes as well. For instance, an Italian Eni, right after the US's Desert Storm military campaign Iraq, developed their projects assuming that oil price would rise to \$80 per barrel. That turned out to be an erroneous assumption.

These mistakes represent a significant element inherent to contemporary economics – not an incident – it studies blinking trends in the development of the financial and economic sector. Therefore any persuasive explanations of objective and subjective causes of forecasting failures are constantly evolving and clearly progressing in numerous economic publications.

Physicians and economists

The interrelations between representatives of natural science and economic scholars are complex and contradicting in terms of relations and priorities. Normally, the attitudes of representatives of natural and technical sciences towards economics are normally polar.

Some of them, the majority in fact, experience some emotional tremor towards science, and it is impossible to understand the essence of this sensation within the scope of traditional natural-scientific concepts. The best advertising of economics in the eyes of this part of natural scientists is economics' tight relation to management, on which in the long run the financing of their research largely depends.

Actually there is another significant element related to coordinating activities of managers and economic scholars, jointly interested in applying the highest degree of scientific character to the results of economic research. In the Soviet Union, where economic science simply degenerated, the role of its representatives in the

Academy of Sciences was raised to unprecedented heights. The names of economic scholars were widely known in the country. This was an award for their pseudo-scientific justification of managerial decisions already made by Communist Party bosses and the government authorities.

However, in free market economies there is a very similar problem. George Soros wrote about this: “The prestige of modern day economists, politics and financial markets demonstrates that medieval alchemists were wrong. Ordinary metals cannot be turned into gold using magic spells, but people can get filthy rich on financial markets and influence politics by offering false theories or prophecies that come true”.⁴²

Other natural scientists, the minority, sincerely believe the evidently low level of economics as a science has been completely predestined by the leanness and defectiveness of its cadre. They are firmly convinced that by making their professional choice in favor of natural sciences in their youth they had ruled out the possibility of a rise of economic thought⁴³. Therefore this category of natural scientists turns to economics in the set of their lives, avoiding initial stages and getting straight into the elaboration of gospel truths. Their rare appearances at scientific conferences bring in the element of effervescent shamefulness into the stagnant setting of scientific economic gatherings.

There is a system of sciences distribution (albeit unrecognized) by hierarchical levels of social acknowledgement. It is worth noticing that economics does not rank among the top sciences. This distribution ranks sciences by their level of descriptiveness or their level of usability, which in direct opposite from the former one, in each scientific discipline of mathematical apparatus. The higher

⁴² George Soros: *The Crisis of World Capitalism. The Open Society in Danger*. Translation into English M.:INFRA-M, 1999, Page 37.

⁴³ It is curious to note that Daniel McFadden, a Nobel prize winner in economics who became famous for his sharp question: “Rationality for economists?”, and his colleague James Heckman have both succeeded a lot more in natural sciences.

that level of descriptiveness the lower the rank of this science. I will repeat again: this distribution is not formally recognized, and it was only Carl Marx who possibly defined its criteria when he said that science that used mathematics as its tool had the right to be called science.

In this connection, there is one explicit tendency to demonstrate the highest level of sciolism in economic publications to the unjustified, artificial complication of the applied mathematical apparatus. The earlier quoted work by George Soros he critiqued this trend: “Scientists involved in social sciences made plenty of efforts and still keep imitating their peers from natural sciences, however, their made big success. Their endeavors often parody natural sciences”.⁴⁴

Inclusion of economic and mathematical models in economic studies is considered to be a good form. Modeling in economics is built so that the most complicated conglomeration of mathematical equations is based on the combination of some initial assumptions made intuitively, the verity of which is simply not discussed since the economic science is (still and possible will always be) incapable of it.

Let’s review this provision using a rather typical example. It is borrowed from a publication on quality management issues.

The following formula is initially given to determine the “mass of quality”:

$$M = \sum_{i=1}^n V_i K_i \text{ where:}$$

M – mass of quality,

V_i – production volume of i -type product,

K_i – quality level of i -type product,

⁴⁴ George Soros: The Crisis of World Capitalism. The Open Society in Danger. Translation into English M.: INFRA-M, 1999, Page 37.

n - number of product types.

The given formula of relation described mathematically is quite applicable for the following actions: one can differentiate, integrate, in other words, transform. The multiple (at times, very difficult ones) transformations of the initial formula are followed by conclusions and sometimes recommendations (rarely though).

On the face of it, the formula provided and prepared for transformation is quite correct.

But that is only the first impression.

How does one measure the level of quality?

This is not the issue of this work since while researchers are assumed that this value is measured by someone and somehow, it was considered that the result of measurement had some finite value of dimension – defined and uninteresting for any further mathematical transformations.

In reality, quality measurement is a totally independent problem. Within its scope one of its components – reliability – is a subject of studies of the entire complex of sciences (see more in Chapter II).

Besides, there are certain dependences that reflect completely real event taking place in life and that cannot be formalized. For instance, the quality of a first television set equaled...indeterminacy. In order to evaluate the quality of that first TV set there were no analogs or, according to economists – base for comparison.

It is impossible to describe the change of quality over time if in less than 20 years of service of a machine its quality deteriorates to almost zero whereas after forty year of service it grows even higher than its initial value.

The quality of a fur coat in Africa does not equal that of a fur coat in Siberia.

But ignore all this and then the proposed formulas can be easily played with. It therefore turns out that formulas with interpretation exist independently whereas the real economic practice – independently, too. And this gap is growing.

Economic and mathematical models present in virtually every have a “distinctive” function: if economic work contains a model, in this case it has the highest level of scientific nature whereas the validity of conclusions implied by the model is high. And though in reality such models are just absolutely insignificant attachments to conclusions formed on the basis of completely different considerations. There are plenty of examples of such pseudo-econometric creations. Let’s closely look at one of the most famous of them.

The 500 Days Program which proposed swift and painless transition to market economy in the post-Soviet Russia is still considered by many as an unrealized chance for Russia. The sponsor of this Program had the same opinion.

Grigory A. Yavlinsky defended his thesis in 2005 before the Scientific Council of the Central Economic and Mathematical Institute at the Russian Academy of Sciences. The thesis was called “The Russian Socio-economic System and the Challenge of its Modernization”. Through his work, Mr. Yavlinsky sought his Ph.D. in “Economic Theory”. He asserted in the thesis that: “Financial stability... was actually needed though not after but prior to the launch of liberalization and privatization; and not at the expense of the population... This opportunity really existed at that period (November – December 1991 - *S.T.*) and that is precisely why the 500 Day Program, in my opinion, was quite realistic and generally practicable”. (Mr. Yavlinsky’s thesis, Chapter 4).

The foundation of the Program which was initially designed as the 400 Day Program was an economic and mathematical model. This was the very model that served as a substantiation of the possibility to avoid the Gaidar-style shock therapy, as well as of why the railroad transportation system had to be transformed into the market system from the 75th to the 110th day whereas the ferrous metallurgy sector – from the 150th to the 295th day.

The realias of 1991 were such that the Soviet ministries and departments tied to production facilities and infrastructure for the defense industry simply refused to

submit the requested initial data to the Program's sponsors. The chunk of information unavailable to Mr. Yavlinsky represented nearly 80% of the entire industrial production of the nation. Naturally, the model they prepared has never actually grown into anything other than theoretical constructions. And yet this had little impact on ambitions of the Program's sponsors and their conception of the Program's "practicability" and "feasibility".

Importantly, the role of assumptions and scientific abstractions used for designing models in physics and economics is different.

A physicist can admit the resistance of environment as insignificantly low when studying any process. But that does not mean economists have the right for analogy when they study processes that take place in the world trade, in a model with two states each producing a couple of products.

The attempts in publications to draw analogies of using assumptions in physics and economics are obviously incorrect. These are qualitatively different assumptions, because a physicist is able to evaluate with certain accuracy the measure of error and thus adjudicate it as significant or insignificant, and an economist does not have such a possibility. An economist, both in this example and in any other examples, is unable to determine the meaning of error, even approximately, and therefore such section as evaluation of error under the circumstances of the assumptions does not exist in economic and mathematical studies at all.

To be accurate, assumptions in economics should be called fantasies. If an economist says they condition that prices do not change in the period of your interest then there is only one substantiation worthy of your attention – this economist is unable to define either direction or form of those prices' future movements, even approximately.

It is very important that studies in the area called "Theoretical Economics" a priori contain a socially and politically biased standpoint. Its core works

invariably study national, corporate and/or political interests. They have no glimpse of “eternal” verities. The “law” discovered by economics represent reactions to respective challenges of times. This flaw is indisputable from the natural science position, and yet it is meticulously disguised and concealed from the general public. This is why most theoretical economic works have been lately overloaded with mathematics.

The great names

It is fair to say that the hereby proposed ideas about the essence and purpose of economics poorly correspond with the widespread concepts of the role and place of economic in societal development.

Public opinion is based, particularly, on the well-known facts of influence the greatest economists and statesmen had in terms of fighting horrifying cataclysms that took place in various countries at different times.

Some of the most commonly used names include Ludwig Erhard – the father of the German economic miracle – and Franklin Delano Roosevelt who drove US economy out of the Great Depression.

There are, however, some new names – Leshek Balcerowicz (Poland), Domingo Cavallo (Argentine), and Egor Gaidar (Russia). But the attitude toward these economists who headed reforms in the toughest periods of transformation of their countries’ economic systems is not as unambiguous as the one towards Erhard and Roosevelt. However, there is no unity in the assessment of these historical figures as there was no such unity during their active reigns.

US researchers sometimes voice an opinion that the role of Edward Tetenbaum, a 25-year old American economist, in the development of economic reforms for Western Germany was even greater than that of Erhard. They believe such drastic changes could only be practicable under the occupation regime, and the German reformer could not have successfully driven liberal reforms without such regime.

At the same time, the Marshall Plan – the program of restoration and development of Western Europe after WW II through economic assistance from the USA – is kind of left outside. As if this Plan did not have any impact on what we today call “the German economic miracle”. Let’s just remind that in the first years into the Marshall Plan (1948-1951), Germany received from the US almost as many resources in various forms as Great Britain and France combined and almost 3.5 times more than Italy.

Under the Roosevelt administration, the country found a way out the most devastating crisis that had ever plagued US economy. According to some experts, this solution couldn’t have been found under Franklin’s predecessor - Herbert Hoover – since only the war brought full employment and the record breaking industrial production growth.

All reformers (both cited here and those left out) had and still have numerous and sometimes aggressive opponents. However, there is one representative of economic thought whose reputation remains unwaveringly high (though not for everyone).

We are talking about John Maynard Keynes.

The purposes of Keynes’ economic position include employment growth and stability of economic growth, whereas the tools he recommended for attaining these goals included the state budget and monetary policy.

Keynesianism was shaped as an intellectual reaction to the global recessionary events in advanced economies in late 1920s – early 1930s. It is currently a well-known fact that the long-term periods of stability, lack of any disruptive crises of overproduction were, for the most part, the results of implementing Keynesianism.

To his adherents Carl Marx promised the repetition of crises at the rate of fixed capital renovation. This is why the Soviet government so eagerly craved for overproduction crises in the “capitalist world”. No wonder in the second half of

1950s the Soviet radio broadcasts informed listeners of the things quite remote from their day-to-day hassles: the state of things at leading stock exchanges, for example.

The upcoming Grand Crisis should have finally announced the winner in the world economic competition of the two systems. The progressive Soviet economic science devoutly search for attributes (naturally, outside of the USSR) of the coming crisis. And honestly they found some evidence. The Soviets wanted the crisis and waited for it. But it didn't come. There is only one question left to answer: did the work of Keynes have anything to do with it?

Any social crisis, no matter the form and type, is a demonstration of accumulated disproportionality. A crisis thus resolves the issue of disproportionality and brings the system to a certain state of equilibrium. This is too generalized to wrong, and therefore it is unlikely that anybody would argue with this provision.

The causes of a crisis are a totally different issue.

If one analyzed statistical data of the time, he would notice that by the time countries reached economic stability the industrial recession in countries struck by crises had a different dynamics for productions that produced means of production and industries focused primarily on production of consumer goods. Equilibrium took place in case of significant reduction of production of means of production or what Carl Marx combined in his reproduction schemes called "I subdivision"⁴⁵. Overproduction, which on the outside looks like surplus of goods without effective demand designed for personal consumption, in actuality means unproportionally inflated production of means of production.

What does this mean?

⁴⁵ The abundance of publications regarding this issue, both Russian and international, enable to adjudicate this assertion as trivial. I recommend the works of Academician E.S. Varga to all those interested in the subject. His book "XX Century Capitalism" (M., 1961) contains interesting statistical data.

It is possible to argue that the 1929 Great Depression was a milestone that marked the end of initial evolution of capitalism characterized by impetuous race of production accumulation.

Natural incentives for enrichment were added in the public mind by the theoretical possibility of instantaneous transformation of a shoe polisher into a millionaire. This created an unrestrained craving for expansion of “own business”. The only victim of this race was personal consumption. This was not only the consumption by an army of workers but also personal consumption of business owners that were literally prepared to starve together with their families in order to attain the *fata morgana*. Disproportions in the distribution of national income in favor of accumulation inevitably resulted in the disbalance of the entire financial and economic system. The epicenter of contradictions was located in the industries making machinery and machinery for production of machinery and machines⁴⁶.

The scale of crisis enables to evaluate the power of amasses and until some time inertially restrained disproportions. Their avalanche-like actualization almost immediately destroyed the US economic system with the power incomparable with wars the country survived, the deadliest typhoons or earthquakes.

So what happened?

Nowadays as many talk about the possibilities of crises it is very important to explain why the devastating overproduction crises are the thing of the past and understand the reasons of this long period of stability. It is the absence of these crises that enabled Western European countries and the US to reach the current level of economic development.

⁴⁶ This part of material production has since Carl Marx been named “production of means of production for production of means of production”.

I believe the reader is aware of the explanations of this phenomenon offered by Keynesians. For those interested I should emphasize the fundamental difference in approaches.

Whereas Keynes and his followers believe the key task of the state economic policy is to stimulate capital investment, we think it is useful only in case the growth of investment does not exceed certain limits dangerous to society, i.e. those values that provide for equilibrium, proportional development of society's financial and economic system. Growth of investment should not ruin proportions by, for instance, suppressing private consumption.

According to Keynes any government investment is a substitute of private ones in case of lack of the latter. In reality, the state investment is significantly different from private investment, both in its form and content. The state investment is dominated by the state defense orders. It is the very investment in production of tanks, warships, aircraft, etc. that suppress the possibility of growth of production of means of production for the production of means of production as this type of investment stimulates their application for manufacture of end products – namely, military weaponry. Thus, real supply in this market segment is reduced, and the material root cause of overproduction crises is thus eliminated.

According to Keynes, there is never enough of investment. Well, it seems overproduction crises showed quite the opposite.

As earlier said, the solution of economic problems is a combination of two components: self-adjustment of the system and the state management. We have no proof of the fact that either of the components prevails in the end result. Nor does anybody else.

It is impossible to clearly define and, especially, irrefutably prove what happened and why the period of stability finally settled in. There may be several versions of explanations with various degrees of verisimilitude. Only one “end result” is clear though, it is the one we can document. In the early stage of stabilization, the

economic and technical development was accompanied by a structural shift towards increasing share of the consumption fund within national incomes. This trend was fixed in the second half of the twentieth century, and we would be right to assume there was a cause-and-effect relation of this specific phenomenon of structural change with the disappearance of devastating crises of overproduction after World War II.

The changes in the national income distribution structure were, in turn, a consequence of two determinant processes.

First, within the scope of material production, the stabilizing component was formed in the natural course of historic development. This component dampened the consequences of growth of the most dynamic part of 1st subdivision, which accumulated disproportions leading to crises. The industrial growth in machine production for machine production which was galloping due to investment boom was the key reason for shaping disproportions which ultimately led to the structural explosion – overproduction crisis. The termination of this process was stipulated among other reason by the fact that in the pre-war years there grew a special type of manufacture which consumed the least liquid part of the national product. This was the production of machine- and metal-intensive military weaponry. It grew sharply and locked up the excessively, unproportionally increased portion of heavy industry.

The close relation between military production growth in the pre-war years and the economic stability becomes even more apparent when we look at how the situation in the pre-war Germany evolved towards stabilization and subsequent riot growth.

From the abstract usefulness standpoint, military weaponry production is “throwing part of national income into the water” (C. Marx). In the real – global, complex – system of a relatively free market this production played the role akin to that of a car refrigerator: it makes it theoretically serviceable.

It is very important to say that nobody knowingly ramped up the government military orders with the purpose of liquidating recessionary effects. This happened for other reasons and motives. However, the effect was realized in the attained stabilization and eventually transformed into the long-term economic growth.

Prior to World War I there were no major technical or technological barriers for the production of military weaponry in the numbers which were significant to the national incomes of European countries. However, at the time there was no complete set of conditions – the volumes of heavy weaponry production were not that high. But when those conditions emerged, the stabilizing effect of the multiply increased military equipment production had finally appeared and consolidated.

The genetic memory of economic systems of European countries testifies to this: in the post-war period, they kept and increased their “military fridge” beyond the reasonable sufficiency.

The activities of US President Franklin Delano Roosevelt related to the state regulation during the Great Depression somehow coincided with the objective trends of the time. This is exactly why FDR – who “showed up at the right place, at the right time” – was the Great President of the United States of America.

Mass production of military weaponry, most likely, became (no matter how paradoxical this may sound) a medicine that stabilized but failed to cure the economic system of various countries. These countries experienced both creative and disruptive reflections of the uncontrollable market.

The second group of processes that contributed into relative harmonization of economic and financial systems of Western democracies was the changes that occurred in the area of labor and capital.

It is hardly necessary to prove that nowadays the relations between employees and employers are quite different from those that were established in the 1920s.

These transformations were not due to purposeful influence. Just like magnet that attracts a rolling ball, the slogans, proclaimed but not realized, of the socialist revolution have adjusted the relations between workers and employers.

In reality, these changes became visible in the increasing share of national income aimed at consumption.

The Russian revolution has clearly demonstrated to the international capitalist world the real possibility to stop the process of unrestrained accumulation using purely uneconomic methods. But the capitalist world has learned the lesson and restructured itself accordingly.

Finally, the result – so evident today – can be viewed as a consequence of Roosevelt's reform or a triumph of Keynesians; alternatively it can be viewed as a fortunate example of self-adjustment processes of the financial and economic system. However, in any case one conclusion is universally true: the history of crises has enriched the human expertise and left a trace in society's economic memory.

Through the accumulated and systematized experience, humankind slowly comes to understand that excessive emphasis on economic goals eventually leads to catastrophic consequences. Mankind through trial and error slowly comes to realize the usefulness of limitations that form the borders of economic aspirations. The famous catastrophic effect of "wild capitalism" combined with the experience of forming the internally corrupt economic system with uneconomic definition of objectives – socialism (See Chapter III) – reminds of the famous but valuable truth – extremes are harmful. This thought – interpreted into the language of economics – means the need for finding equilibrium and sustain proportionality. It is those economists and statesmen who practically searched for the golden mean and promoted withdrawal of financial and economic systems from the extreme forms of disequilibrium that we now call the great ones.

Method

One of the evident indicators of the fact that economics is an intellectual field of studies that promotes managing and driving proportionality and equilibrium of the financial and economic system of society is the role that balance (equilibrium) plays as its key tool.

The planning systems of industrial enterprises, financial sector, and public administration are based upon balance methods. However, in each area there are specific forms and methods of working out balances. There are many various types of balances.

The use of balance methods in the economic sector is nowadays a commonplace. Balance sheets can be even considered routine.

In any company, plan is a balance, report is a balance, material consumption is reflected in physical balance, balance of machinery utilization is calculated for machinery, labor balance – for labor, etc...

A balance is the foundation that underpins all the corporate economic activities. Any discrepancies and bottlenecks identified are solved through the implementation of technical, technological and organizations activities. Potential outcome of these activities is evaluated based on their efficiency calculations. In aggregate, all economic work aims to provide management with information that enables it to make decisions that help sustain equilibrium. These decisions must be checked for compliance with the attained level of effectiveness. A balance, as a method, is used in all links of the integral financial and economic complex of a country, from its lowest link to the highest one: this is also a balance with expense and income items, and a balance with deficit and surplus.

Vasily Leontyev, a Russian economist and a pioneer in using balance methods for planning and forecasting, won a Nobel prize in economics in 1973 for “the development of a “costs – output” method and its application for important economic problems”.

Leontyev's ideas are now quite popular. It is impossible to image any economic management authority of any advanced country without information received with the help of dynamic and semi-dynamic intersectoral balance of various forms and modifications.

The use of balance methods in forecasting is quite complicated: the calculations performed by various groups and using various methods yield different results. Besides, normally all these forecasts are disproved by practice, month after month, quarter after quarter, year after year.

Leontyev was the first to evaluate the limitations that occur when applying balance methods in forecasting. According to his own confession back in 1979, "the key drawback of the simple cast-output approach to describing dynamic processes is its inability to tackle a situation when one of several branches have worked for long periods of time with excessive inventories. The fixed capital invested in one sector cannot normally be quickly reinvested in another sector, whereas the idle resources appear every time production rate in a specific industry begins to decline year after year. In order to account for idle resources within a single "costs – output" dynamic system, one has to artificially delay raw materials inventory flow and capital flow"⁴⁷.

However, these are not the only limitations for applying Leontyev's methodology for forecasting.

The attempts of forecasting using dynamic models of various levels of perfection bump into the same type of barriers: blinking trends in the economic sector. This is precisely the circumstance that creates natural barriers that stipulate for a relatively low level of reliability of the currently created forecasts. Building dynamic models (balances) requires the knowledge of development trends in certain sectors, the time of emergence the new ones and the start of stagnation of traditional production. The processes of evolution of technology fundamentally

⁴⁷ A quotation from "Economic Theory Anthology". Author: E. Borisov. P: Yurist, M. 2000

change the structure of resources consumed by certain industries and created in other industries, etc. Source data (particularly, direct cost ratios) used for intersectoral balances become outdated even before their calculations are run⁴⁸.

The destiny of a UN project – The Future of the World Economy – is a good example. It was implemented in 1970s under Leontyev's direction. The state of the world economy in 1990 and 2000 turned radically different from the forecasts represented in that project.

Today, we are able to establish that economic forecasts are not hard data. Deviations from actual indices in many cases are quite significant, oftentimes there are mistakes in the determination of trends: whenever they forecast a decline the actuality shows growth, or vice versa.

Nevertheless, nobody doubts that forecasting is the key function of economics, especially of its area that deals with public administration. Society constantly and strictly demands that economics work out a reliable forecast of its future development.

It is curious though that nobody questions what would happen to all of us in case our desire to obtain the most reliable and veritable forecast from economists were to come true.

It doesn't take a genius to figure out this would entail complete paralysis of our entire financial and economic system.

It is absolutely clear that if there was a mechanism that enabled to foresee our economic future in full detail then no inefficient projects would ever be launched. However, this also means effective projects would never be implemented since it is unclear relative to what they would be effective. If we knew absolutely clear that the oil price in June would be \$1,000 then in January its price would rush to that level. If someone with 100% certainly forecasted a crisis in country "N" in

⁴⁸ This is true not only for the classic balance methods of forecasting but also for more than 150 currently known methods of forecasting.

2010 then this crisis would inevitably take place – on the day the forecast was published.

The same would happen with the stock market in case forecasts from market analysts and investment bankers were any reliable. Investors, once they received information about risk-free opportunities, would immediately sell off outsider stocks with such zeal that the crisis following it would eclipse any other crises in human history.

The current equilibrium state of economy is determined by the fact that most investors realize they take risks. Therefore the numbers of those who “stand above the market” using the new-fangled arbitration strategies, and those who “stand below the market” while using the same technologies, are about the same. SmartMoney magazine published an interesting opinion regarding this matter: “On the face of it, the situation is pathetic. If you want to have higher than average returns on the market (stock market – *S.T.*) then 75% of analysts would not be able to help you. No surprise there... So why recommend something pseudo-scientific if following such recommendations is not better than flipping a nickel? Well, you just HAVE TO.”⁴⁹

Foresight in macroeconomics is a probability according to the experience of George Soros. It is just as possible as winning in a casino. The thing is we can't all play in this casino of life.

One of the most important features of economics methodology is some of its elements used under extreme circumstances. These circumstances occur during crises. At the same time, crises events – especially at the top management level – are frequent rather than rare. Public management implies operating in permanently extreme conditions and constantly surmounting actions of various external and internal circumstances that bring in disbalance into the structure of resources of national economic and financial systems.

⁴⁹ SmartMoney, No. 39 , 11 December 2006

Under crises, in time trouble situations economists are expected to work out recommendations as to operational utilization of the management tools available to government authorities.

The search for solution under these complex circumstances means identification of analogies. It is necessary to find analogous or similar situations and define methods used in the past in order to overcome the crisis, and evaluate the acceptability of using such methods under the circumstances, as well as churn out recommendations for the respective authorities. To do all this, economists must have encyclopedic knowledge.

There are no 100% analogous situations in history. In each case one can identify similarities with the crises that took place in various times and various places. The character of recommendations from economists arises out of this. Such recommendations have multiple choices. Existing circumstances offer various scenarios. The experience economists are equipped with is not a science; therefore methods for their problem solving can be very diverse, too.

Statesmen often notice that economists never give you straight answers to straight questions. This is possibly why Franklin Roosevelt once dreamed about having a one-armed economist: he was sick to death with recommendations with a refrain like: "On the one hand, on the other hand".

Purpose

One of the many of economics' paradoxes is that economics has not ultimately resolved a single problem of humankind, and yet neither the creation nor the very existence of any developed society would be possible without economics. The very fact that economics does not yield results society expects from it does not at all mean there is no public need for economics. Besides, this area of intellectual activities is still at the stage of building up its potential. It would be true,

however, to say that economic potential grows concurrently with the mounting complexity of emerging managerial problems.

So, it is an established fact that there are no discovered laws in economics, like those in natural sciences. It must be therefore acknowledged that economics has a different purpose. Economics does not dictate perennial laws: it does other different things.

Economics generalizes and systematizes experience using ever mounting piles of qualitative and operational information. By testing technical, technological and organizational decisions of past mistakes identified by it, economics promotes further reduction of uncertainty when making managerial decisions though it never brings that level of uncertainty down to zero.

Economics is different from common sense in that it has a mechanism that enables to check for consistency some massive amounts of interrelated managerial decisions. This is achieved by using the most ingenious yet anonymous inventions of economics – balance.

The main purpose of economics is to enable information management in order to attain equilibrium and proportional development of society's financial and economic system.

Economist is somewhat like an experienced sailor of a ship that cruises undiscovered seas. Though when faced with new barriers an economist would normally identify them, and the ship wouldn't sink. If the captain of that ship is consistent in applying information received from the economist then the next hole in that ship would come from a different reason, previously unknown to the economist.

Hindrances on the path of that ship are not only whirlpools and rocks. They may also include ship steering techniques. The sailor-economist knows that setting a goosewing would wreck the ship, and that jiggers are not fixed onto sailyards.

A ship with the economist on board is both sailing and under construction. In case of changing rigging, the economists' knowledge must be obtained over and over again.

We understand the quality of economic forecasts has natural-bound limitations. We cannot reliably forecast but thorough knowledge of our future is dangerous. Thus, a question: why does society spend its rather limited resources to forecast? The answer is not that easy to pick.

Forecasting in the financial and economic sector is designed to play the Golden Cockerel from the famous fairytale by Alexander Pushkin (the Golden Cockerel alerted of the coming danger).

Besides, a bad forecast is a lot better than having no forecast at all. An economic forecast enables management to build the entire financial and economic system and each of its components in certain approximation to equilibrium.

Proportions of the system and its components can be adjusted as the actuals deviate from the plan. However, modern society knows how to operate under these conditions and is prepared for the respective managerial maneuver – whether it is additional distribution of budget surplus or additional borrowing to cover budget deficit.

A financial and economic system of any developed society is absolutely unable to function having lack of preassigned forecast guidelines.

Modern management practice enables both governments and companies to adapt to this or that quality level of economic forecasts we are able to get nowadays. Considering that economic is able to register any deviations in the structure of society's financial and economic system leading to the forms of crises that already took place in the past, the accumulation of other types of disproportions realizable in new and unknown types of crises is possible.

In terms of forecasting, economics is to some extent like seismology. Currently, seismology is unable to alert people of exact time and place of the forthcoming

earthquake. However, seismology is already able to identify areas of its maximum probability and provide information that can be transformed into construction standards for earthquake-resistant buildings in such areas. But the level of uncertainty seismology is facing now is a lot lower than that of economy. We therefore are even more unprotected in the face of economic cataclysms than we are in the face of devastating natural calamities.

A special, implicit role of economics in terms of attaining stability of social development should be emphasized. Economics stipulates for this by the very fact of its existence. No matter how strange it may sound, economics has some sort of a sacred⁵⁰ function.

The role of economists engaged in macroeconomics (polysonomia) in the contemporary world is somewhat akin the role shamans played in a primitive flock, or that of Egyptian sacrificers, medieval oracles, astrologers and alchemists that hung around at courts of the crowned heads. Their main purpose was not to be practically beneficial – they played a role of fuses. Today, vast majority of people have no clue as to the area of studies of those scientists engaged in economic research at the government level. The fact that these experts do exist and that their achievements do become known to the power players is constantly recognized at the highest levels of authority. That these scientists are occasionally awarded Nobel prizes tells the average man: the global economic problems are under control.

This gives hope to both the man in the street and the tycoon.

Thus, this particular purpose of economics has a social value.

⁵⁰ Sacrum (Lat.) – sacred.

Chapter II. Price, Efficiency, Quality

Definitions of Economics

The basic economic concepts that we broadly use nowadays were defined not so long ago from a historical point of view although in a situation fundamentally dissimilar from the present one. Whereas in natural sciences one has no need to go back and review original concepts and definitions, in economics the situation is quite different. The trends arising and decaying in the economic sector result both in the withdrawal of certain and the advent of absolutely new concepts.

Today we understand the meaning of such economic concepts as “gavel work”, “servage”, “tithes”, “capitation”, etc. but do not need them in practice any more. At the same time the concepts of “inflation”, “efficiency”, “credit”, “budget” and many other were introduced in practice and scientific usage a long time after the first recorded attempt at the conceptualization of economic behaviour.

It should be emphasized that the definitions fundamental for economic science and practice of the third millenium have been derived not from demonstrative and reproducible experiments but rather through some informal implied provisional arrangement. The economic community “by default” admitted them as the most accurate for a given period and derived from the hypotheses describing the behaviour of economic processes. The contents of such hypotheses should satisfy the majority directly interested in the introduction of the conclusions resulting therefrom in the economic practice, in logical mathematical constructions or excel at the moment, in professionals’ judgement, any other hypotheses in the “likelihood” of description of various economic phenomena.

It is here that the issue of identity blows up consisting in estimating the likelihood of the basic assumptions adopted to construct the economic theory underlying the accepted definition and their conformity with economic reality.

To illustrate the identity issue we shall describe one of the most famous examples of the economic scholarly work.

The theoretical pricing constructions are undoubtedly among the most well-known and widely replicated ones.

A typical example of the equilibrium price given in the modern textbooks is the following.¹

This example is dealing with potatoes. These are precisely their monthly deliveries to the market which are used by the author to illustrate the establishment of the equilibrium price (*Table 1*²).

Table 1.

Market demand and supply of potatoes (monthly)

Price of potatoes, pence per 1 kg	Total market demand, thousands tons	Total market supply, thousands tons
20	700	100
40	500	200
60	350	350
80	200	530
100	100	700

¹ Sloman J. Economics, 5th ed./Translated from English. Ed. by S.V. Lukin — St. Petersburg: Piter, 2005

² Ibidem, p.57.

The data from *Table 1* are graphically displayed in the plot (*Fig. 1*)³.

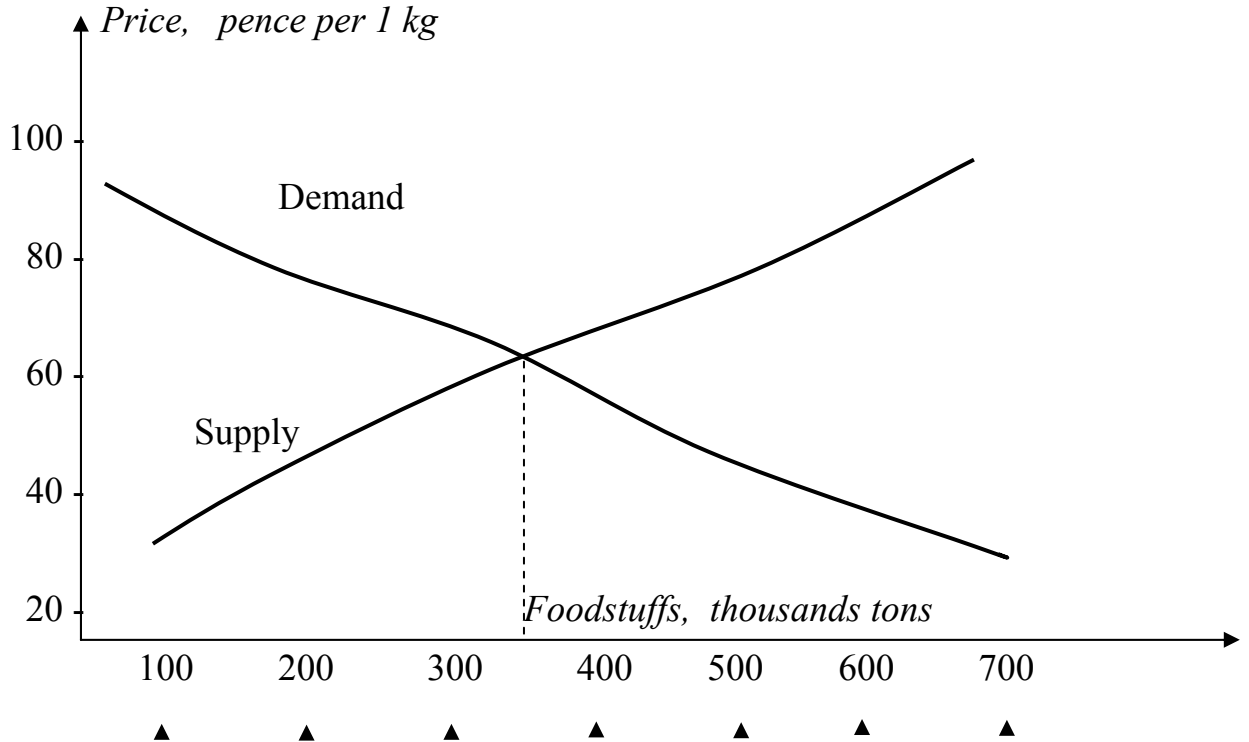


Fig. 1.

In the authors' opinion, it can be seen from the table and the plot that the equilibrium price is established in case of demand and supply equilibrium at the level of 60 pence per 1 kg.

The point of primary importance, even principally important, is how the initial price originated.

It is very interesting to know how this price, 20 pence per 1 kg, was set?

It is not a meaningless question, since all subsequent alterations presented in the table and in the plot seem to be of secondary importance.

No answer to this question can be found in the publications by A.

Marshall and his followers since they see no problem in emergence of any initial price and hence do not attempt to solve it. It is evident that

there is some authority that has fixed that price, namely 20 pence with the demand being 100, 000 tons and supply - 700,000 tons.

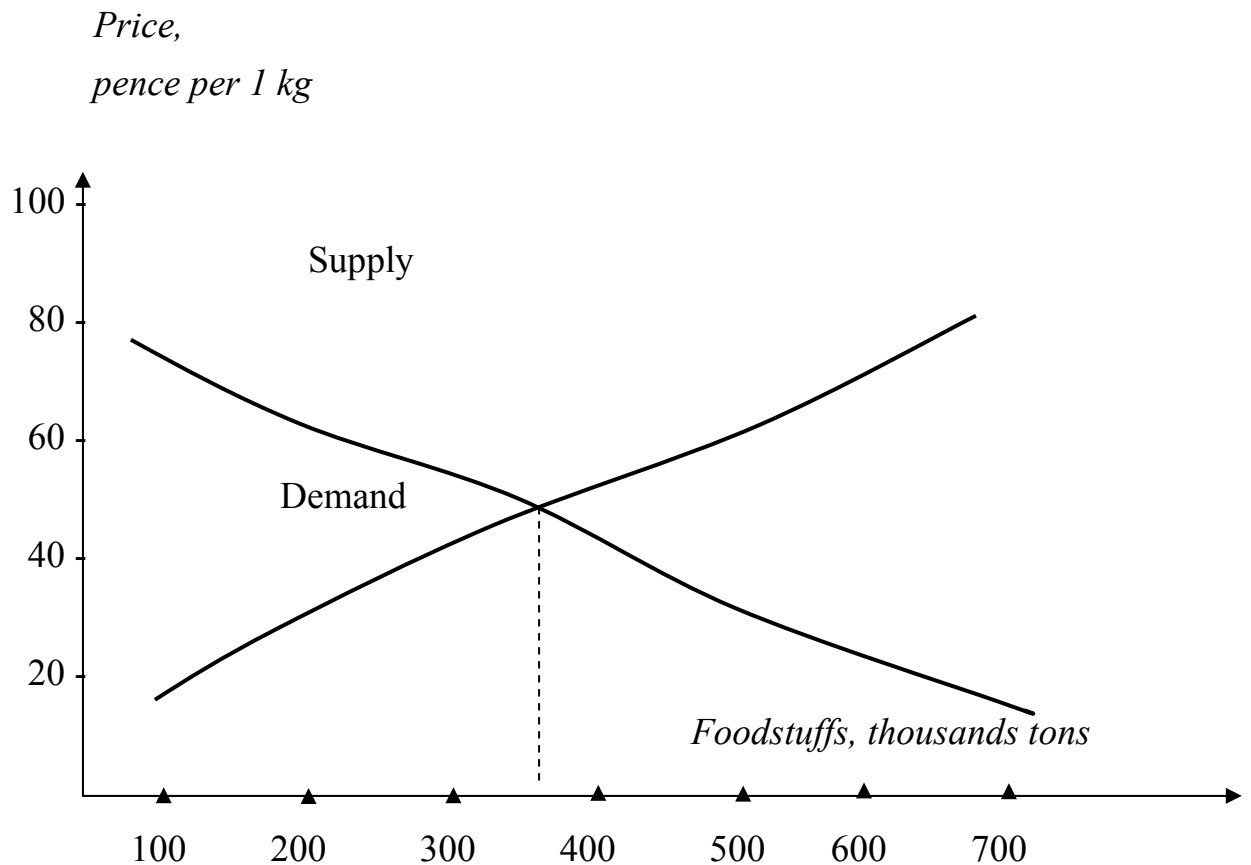


Fig.1. Market demand and supply of potatoes.

Consider the changes in the effective demand for potatoes based on the data presented in *Table 1*.

The 1st month: 20 pence x 100,000,000 kg = 2 billion pence;

The 2nd month: 40 pence x 200,000,000 kg = 8 billion pence;

The 3rd month: 60 pence x 350,000,000 kg = 21 billion pence;

The 4th month: 80 pence x 530,000,000 kg = 42.4 billion pence;

³ Ibidem, p.58.

The 5th month: 100 pence x 700,000,000 kg = 70 billion pence.

Naturally, one might wonder what happened to quite ordinary foodstuffs such as potatoes, what radically new marvelous features were discovered therein by the residents of that unnamed country, that increased effective demand for that item in the assortment of ready-selling goods as much as 35 times?

Note that during the first month 700,000 tons of potatoes were offered to the buyers, whereas only 100,000 tons were sold. It follows that 600,000 tons remained unsold. However, during the second month only 500,000 tons were brought to the market. The question naturally arises as to what happened to the rest, i.e. to 100,000 tons of potatoes? Did they rot away?

The scheme for price formation suggested by A. Marshall implies that during four of five months potatoes were being sold at non-equilibrium prices. Here, the question arises: how is non-equilibrium price formed? Where can one become acquainted with the mechanism behind non-equilibrium price formation? And, if the equilibrium price is 60 pence per 1 kg, then why, upon establishing that price, selling prices continue changing, and furthermore, if the price does not become stable at the equilibrium level (demand = supply), then what is the reason for trying to find an equilibrium price? And does it follow from the data presented above that equilibrium prices are most likely occasional, while in most cases (80% of time in the example considered) the goods are being sold at non-equilibrium prices?

And finally, the key question: how does A. Marshall's price formation scheme refer to reality?

It is unlikely that someone could observe any similar situation personally.

The constructions of the kind are based on certain continuously observed plain facts a simple combination of which gives an absurd result. A real-life relationship between supply and demand is much more complicated than that shown in *Fig. 1*.

An attentive and critical review of the constructions suggested by contemporary authors in explanation of the phenomena observed in economics reveals that all of them begin with a sort of a “clean sheet”. The example of potato sales discussed above clearly shows that the author suggests that neither the sellers nor the buyers have any relevant experience. Nobody has ever sold potatoes in that country before and has no idea of the prevailing prices which is a rank nonsense explaining the obtained results.

The arguments against the method of establishing the equilibrium price recommended in the textbook are content-driven rather than formal as it might appear. We shall discuss them more in detail further. For the moment it should be noted that in reality the equilibrium price is never in the world arrived at in this way.

In addition to the identity problem relating to economic concepts there also is the problem of the accepted definitions’ correspondence with the requirements of the dominant social ideology. Note that unlike the economic postulates, the laws and definitions of physics, chemistry or mathematics do not depend on politics. To make sure of that one could make use of not yet totally decayed socialist economy textbooks and find there a lot of supporting examples.

The followers of Marxist economics feel somewhat uncomfortable in today’s Russia given a general euphoria driven by the anticipation of the golden age of market economy.

It will wear off.

The third problem to be considered in this context is the problem of adequacy.

The problem should be interpreted to the effect that the suggested economics definitions should have a certain meaningful “stuffing”. Unfortunately this is not a strong point of definitions contained in the textbooks on economics. Judge for yourself.

N.G. Mankiw⁴ suggested the following definitions of efficiency and equality: “Efficiency means deriving by the society of maximum possible benefits from the utilization of limited resources” while equality according to him “means that obtained benefits are equitably distributed among the society members”.

The above definitions invite some questions. One would like to understand inter alia what is meant by the “maximum possible benefits of the society”. What option of resources distribution is concordant with such maximum when, other things being equal, we have three tanks and one symphony orchestra or two tanks and two symphony orchestras? And what are the “benefits equitably distributed among the society members”? Is there anyone who knows an equitable mode of distribution or has offered a definition of “equality” in the context of benefits distribution? Such definitions are the examples of the inane verbal rubbish unfortunately only often found in economics textbooks.

The main conclusion to be drawn from the above discourse is that no economics concept is perpetual and can fall beyond continuous critical review. Strange as it may appear, however, many of such concepts used in science and practice has not been subject to critical review for quite a long while although need it badly.

The critical review is just what I am going to endeavour.

⁴ Mankiw N.G. Principles of Economics. — St. Petersburg, Piterkom, 1999.

I should, however, note that the new basic concepts I suggest further have the same flaws I exposed earlier. They don't have the force of strong evidence nor claim immortality as they are derived from certain hypotheses I consider plausible. But there is a great depth of meaning in it: the helplessly experimenting economics requires a continuous introduction of fresh blood through new experience and new logical constructs.

Value

The problems of value and price formation are clearly among the key problems of economics which have been engaging the mind of economists through the ages. It should be recognized, however, that the 19th and 20th centuries became the period of massive brainstorming of the value (price) formation problem. The stars of economic thought ascended and descended.

At the turn of the century the Austrian school flourished, a general opinion being that the Menger approach would turn into a full-fledged price theory. The list of representatives of the Austrian school and their works is quite extensive and includes Bem-Bawerk and Weekstede in the Great Britain, Clark, Fetter, Davenport, Bates, Cover, Fisher in the United States and many others.

Later the Marshall theory appeared which by the beginning of the 1920s became the most popular and dominating pure economic theory. Since 1931 the London school of economics under the leadership of Friedrich von Hayek explained pricing based on a "general equilibrium paradigm" replacing the Austrian school which only remained in economic theory writings.

We should not forget Marxists concurrently heavily engaged in the development of the labour theory of value.

So economics has never lacking in theories of price or value.

Value is an abstract concept. Nobody has ever seen it and it is impossible to determine or measure the value of a particular commodity or even a commodity group. It is generally assumed, however, that when a commodity finds its buyer it has some value which is proved by the fact of sale.

It is also admitted that a commodity not intended for sale has no value meaning that the term “value” implies certain relations into which people enter. According to some authors the sum of values of the mass of commodities sold should be equal to the sum of prices at which they are actually sold.

Although, unlike price, value is an abstract there have been continuous attempts to find approaches to its objective assessment, to unseal its essence.

The **Cobb-Douglas production function** well-known among scholars but totally unknown to practitioners (due to its utter irrelevance) was based on the assumption that value was formed by labour and capital.

Neither the authors nor the proponents of the theory contemplated the substance of the transition or the technology of the two categories transformation into the third one, whether theoretically or practically. They considered the correlation between the factors of production (labour, capital) and the function (value, calculated price) as proof of a cause-and-effect relation.

The internal mechanism of price formation from two so different substances as labour and capital has still not been explained whereas indirect evidence derived through the calculation of the closeness of ties is not admitted as a satisfactory proof of its existence.

By now the production function has been extended by indefatigable zealots who include in it plenty of additional factors of production which,

however, do not affect the bed-rock of the original Cobb-Douglas function.

Marxists and their present-day followers advocate the **labour theory of value** under which value is only created by labour and goods are exchanged according to the principle of the labour input equality.

According to Marx value reflects the quantity and quality of production labour input. Whereas the quantity of labour is measurable (e.g. in hours) the introduction of the labour quality category makes the description of the mechanism of labour input transformation into value an insolvable and even mystic problem.

Let us assume that Marxism is right and goods are exchanged according to the labour input equality although we for some reason are unable to understand the balancing mechanism and find a confirmation of the equivalence in question. Nevertheless, another problem remains unsolved. The “Marxian” exchange ignores the basic contradiction of commodity production. The progress of mankind would be impossible if producers exchanged goods according to the principle of the labour input equality. Equality lacks the progress source. Development requires contradiction, a certain increment of value which was understood and recognized by K. Marx.

Unlike its ideological implementation, the labour theory of value turned out quite useless (not to say detrimental) in practice. The principle of equivalent exchange is similar to the social equality principle — it sounds nice but is quite impracticable.

Presently the **marginal utility theory** is dominating in the region under review.

The hypothesis known as the “marginal utility theory” is based on the following assumptions:

each subsequent commodity item purchased by the consumer is less useful than the previous one;

the consumer tends to spend his limited income so as to gain maximum possible utility or subjective maximum satisfaction.

The first assumption has become a law — the law of diminishing marginal utility stating that each new purchase of a given commodity increases the utility of the purchased mass of commodities to a certain level whereas the utility of each subsequent unit of that commodity continuously diminishes reaching zero at the time of some purchase.

The most significant consequence of the theory under review is the conclusion made by its proponents that every consumer arrests the restless desire for increasing the benefit he owns only when the relationship between marginal utility and price becomes equal for each particular item of the purchased commodities and services.

The time of arriving at such balance cannot be estimated both due to individual assessment of each benefit's utility by each particular consumer and because the process cannot be formalized and remains utterly intuitive. There is even no utility indicator (which was named “utile” but was not provided with any content). Therefore, in strict conformity with the marginal utility theory *each* consumer must estimate empirically the marginal utility of *each* acquired benefit.

The authors of such constructs hardly ever stopped to understand the correlation between their writings and practice. Do we as consumers really buy several items of each commodity to empirically find the balance between marginal utility and price? Nothing near so.

One can easily see that the law of diminishing utility like all conclusions derived from it is based on the authors' intuitive and quite shaky ideas. Any arguments that the first spoon of soup is more salubrious than the second one can easily be contested by contrary examples. Indeed, is the

second pair of socks you buy less useful than the first one? In my opinion you don't need the first if you don't buy the second. If you have twins you buy two cribs rather than one and don't experiment with the third.

It is fairly indicative, that marginal utility theory is not illustrated with the examples from the industrial commodities trade. Number of facilities, material and energetic resources and then some, essential for the manufacturing process organization, could not be considered at all as utilities, tending to their limit.

Pricing

Simple Exchange

It should be recognized that while criticism of various theories invoked to reveal the enigmatic nature of value and price is abundant constructive suggestions are lacking.

In this section we shall engage in economic archaeology and try to reconstruct the process of simple exchange in its most primitive form.

The process of simple exchange should not have been complicated let alone enigmatic. Exchange could only be natural, i.e. free from coercion if both parties of the process understood its obvious tangible benefits.

It is hardly necessary to demonstrate that exchange transactions in human history date back to the days of natural economy with its limited product range. Exchange began from occasional bargains. Either party of exchange was perfectly aware both of the cost of goods it produced and the cost of goods it was offered as the first exchange transactions occurred within the same tribe, i.e. between tribesmen who did not specialize in producing certain kinds of goods they wanted. It means that exchange began during the period when each member of the tribe could produce and actually produced everything required for survival.

Let us start with a stone-axe countered with a stone spear.

I have made an axe and you, reader, a spear. I spent on my axe 11 units of resources.⁵ Naturally, I can make spears, each spear taking 6 units of resources (see *Table 2*).

You, the other side of the expected exchange, require 14 units of resources to make an axe but 5 units to make a spear.

Table 2

Unit production cost, *unit of resources*

	Author	Reader
Spear	6	5
Axe	11	14

As it happens you need an axe and I need spears. So, let's begin bargaining.

I wouldn't exchange my axe for one of your spears as then I clearly lose 5 units: I can make a spear using 6 units whereas having exchanged it for an axe I would spend 11 units.

You wouldn't give three spears for my axe as you would lose one unit of resources ($3 \times 5 = 15$; $15 - 14 = 1$). It would be cheaper for you to make an axe yourself.

I suggest that you give two spears for one axe. You cannot resist such offer because you gain four units ($14 - 2 \times 5$).

And I also benefit: I would spend 12 units to make two spears whereas I lose only 11 through the exchange. One unit of resources stands to my credit!

⁵ I should note that any producer, even the most primitive one, took into account not only his labour input although constituting the lion's share of his total costs.

Our total gain resulting from the transaction amounts to five units of resources. In this way we save resources engaging in what we can do best and exchanging the products of our activities.

The exchange process propagated gradually and steadily promoted by the appearance of reference goods giving rise to prices. But simple exchange was underlain by the opportunity to compare different goods still enabling the calibration of the scale of consumption values nowadays. This is a general framework of economics — one cannot appraise technical and economic alternatives and find an optimum one without a comparison base.

The involvement of new goods resulted in the formation of interrelated justified prices. The huge price tree developed from a tiny sprout of simple exchange.

Naturally the model of the origin of exchange described above is only a hypothesis and in this respect it does not differ from any other possible hypotheses, whether presently known or unknown, although it seems to me more productive as it has no mystic component of the equivalence principle. Indeed, there is no equivalent: 10 units of your resources were exchanged for 11 units of mine which neither prevented the exchange nor made it impossible.

Mutual Benefit

Let us now turn to the problem of contemporary pricing.

It is quite surprising how all constructs underlying existing price theories ignore a remarkable branch of economic activity, i.e. the trade in individual means of production such as unique machinery and equipment. That is rather peculiar as the purchase of unique equipment involves one seller and one buyer — a situation perfectly suitable for studying the real price formation process.

The present markets of capital goods and commodities differ considerably. Mass demand for similar goods impersonalizes consumers and therefore there is no bargaining in stores or supermarkets — the buyer cannot suggest a price. This is not a traditional trade but rather its advanced variety. The vast expansion of the range of goods offered to consumers, the overwhelming publicity effect, the development of new financial instruments and many other factors radically altered the original trade in commodities.

The market of capital goods dispensed from many provisions changing the consumer market retained the elements of real trade required for our initial analysis.

Analyzing the process of the buyer and the seller arriving at a consensus expressed by the acceptance by both parties of a certain price we reveal the keystone of any exchange, the principle making it feasible which is compromise, i.e. the **advantageousness of the transaction for both parties** — the seller and the buyer.

Exchange is only possible when both parties obtain certain benefits. Otherwise it is meaningless and hence impossible.

Upper and Lower Price Limits

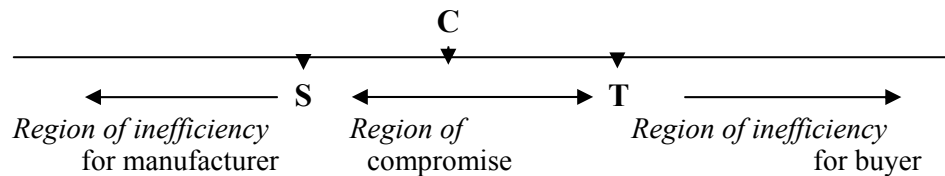
Let us consider the sale of unique equipment produced for a particular customer. We'll start with a simple case and later pass to a more complicated situation.

The motives of the manufacturer selling his products are quite obvious: he must cover total production costs through the sale (point S in *Fig. 2*)⁶.

⁶ In this case “costs” mean only production costs although it's clear that some minimum savings exist without which any reproduction on a simple scale is impossible. However, the introduction in contemporary economics literature of the “normal” and “abnormal” profit concepts only obscures the issue. Costs plus both “normal” and “abnormal” profits have the same economic substance, i.e. price.

The costs incurred by the seller mark the limit below which it is economically unreasonable to continue production. It is the point of threat of the seller's business failure. Therefore we assume that **S is the lower price limit** below which manufacturer's losses occur.

Fig. 2



Therefore, the below condition (1) is essential for the seller (manufacturer):

$$S < C \text{ where } C \text{ is the price of equipment.} \quad (1)$$

What motivates the buyer's acceptance or rejection of the suggested price? The buyer expects that the purchased equipment will produce additional profit and increase his production efficiency. The replacement of an old machine by a new one should not at least be disadvantageous for his business. If the new equipment is required to switch over production it should at least maintain production efficiency at the same level⁷.

It means that the buyer (and only the buyer) knows a certain level of the new equipment price capable of maintaining status quo, i.e. the equivalence of the old and new equipment operation.

⁷ Here we intentionally abstract ourselves from several possible patterns of economically motivated behaviour. For instance, not infrequently in case of technology replacement or conversion a temporary decline in efficiency is accepted. It should be emphasized that a businessman can never be his own enemy. This is the only self-evident economic assertion although not universal. But I am not sure that the latter circumstance has anything to do with economics.

If the price of the new equipment (machine, etc.) goes above the limit it becomes unacceptable for the buyer. He wouldn't buy at such price.

New equipment generally has higher productiveness, longer service life and offers other advantages providing for lower operating expenses. Such advantages, however, are only valid up to a certain price growth level which is specific to each consumer of such equipment and above which the region of inefficiency for the buyer begins. We call it the **upper price limit**¹ (point **T** in *Fig. 2*) because it should not be exceeded.

Therefore, the below condition (2) is essential for the buyer:

$$\mathbf{T} > \mathbf{C} \quad (2)$$

Whereas the lower price limit is clear and obvious since it is economically unreasonable to sell goods below cost the upper price limit requires additional explanation.

Suppose, for instance, that new equipment is purchased to replace old equipment. Let us try to estimate the price of the new equipment where the region of inefficiency for the buyer begins. To this end we should use the upper price limit (P_{ul}) formula⁸:

$$P_{ul} < P_1 \frac{V_2}{V_1} \times \frac{R_1 + E}{R_2 + E} + \frac{O_1^1 - O_2^1 - (C_2^1 - C_1^1)E}{R_2 + A} \quad (3)$$

where:

P_1 is the price of basic equipment (operated presently);

⁸ The formula was used in the Procedure of Establishing Prices for New Technical and Industrial Goods. — Moscow: Preiskurantizdat, 1974. P. 5-6. Further information on the economic substance of expression (3) is available in “The Origin of the Method of Cost-Effectiveness Analysis”.

V_1 and V_2 are annual outputs of the basic (1) and new (2) equipment;

R_1 and R_2 are depreciation charges to renovate the basic and new equipment;

E is effectiveness ratio, i.e. the buyer's rate of return;

C_1^1 and C_2^1 are relating capital investments of the buyer in the basic and new equipment at the output level provided by the new equipment;

O_1^1 and O_2^1 are the buyer's annual operating expenses relating to the basic and new equipment at the output level provided by the new equipment less the cost of renovation.

If in the situation under review $R_1 = R_2$ along with $C_1^1 = C_2^1$ and $O_1^1 = O_2^1$, then the expression (3) would look as follows:

$$P_{ul} < P_1 \frac{V_2}{V_1} \quad (4)$$

Expression (4) reflects a simple and obvious requirement of the buyer: other conditions being equal, the growth of the new equipment price should not outrace its productiveness.

Other elements of expression (3) describe additional possibilities of the purchased equipment price growth explained by the fact that its employment reduces current operating costs ($O_1^1 > O_2^1$) or relating capital investments ($C_1^1 > C_2^1$).

Therefore, the upper price limit (the above example can be easily extrapolated to products intended for any purpose) reflects the marginal cost which the buyer can incur to realize all advantages of the purchased goods.

The price in between **S** and **T** represents the region of compromise.

The bargain, if made, will be settled at the actual price (alias the equilibrium price) in the interval of $[S-T]$. Whether point C will be close to S or T is impossible to predict. The outcome of negotiations depends on a variety of factors.

The process of the equilibrium price formation described above shows how a business behaviour pattern is implemented based on marginal analysis.

In our example S is the marginal price for the seller (manufacturer) and T is the marginal price for the buyer (consumer).

It should be noted that our analysis has only limited the region of uncertainty within which the main characteristics of any economic processes — the price — are built up. But even this is sufficient to see the reality and effectiveness of the key pricing principle suggested earlier — the principal of mutual benefit for the seller and the buyer.

In real life for a variety of reasons red ink transactions are sometimes executed. Transactions may even yield losses to both parties. But these are the exceptions proving the rule: exchange is possible when and only when both parties benefit from it.

The labour theory of value insisting on exchange based on the labour input equivalence fails to reveal the mechanism (except industrial espionage) enabling the agents of exchange to find out the other party's costs. And this comes before everything else. The motives of exchange based on the principle of equivalence are vague — what do I care about my counterparty's costs? What I care about is the state of my affairs after the purchase.

The above analysis shows that both the manufacturer and the consumer of the goods (in our example — unique equipment) can agree on the price without the knowledge of the counterparty's business parameters.

It should be noted that in the above example the transaction is executed by the parties being monopolists between themselves: no other manufacturer can supply such equipment and no other consumer wants it which is a rather unique case of demand matching supply.

Supply and Demand

We now come to the situation when many manufacturers produce similar interchangeable (strictly speaking identical) products (goods, services) for many consumers. In this case we assume that any manufacturer is also a customer, that there are no intermediaries between the seller and the buyer and no stock is held. This is a very important limitation which, if removed, would have a marked effect on the pricing mechanism⁹.

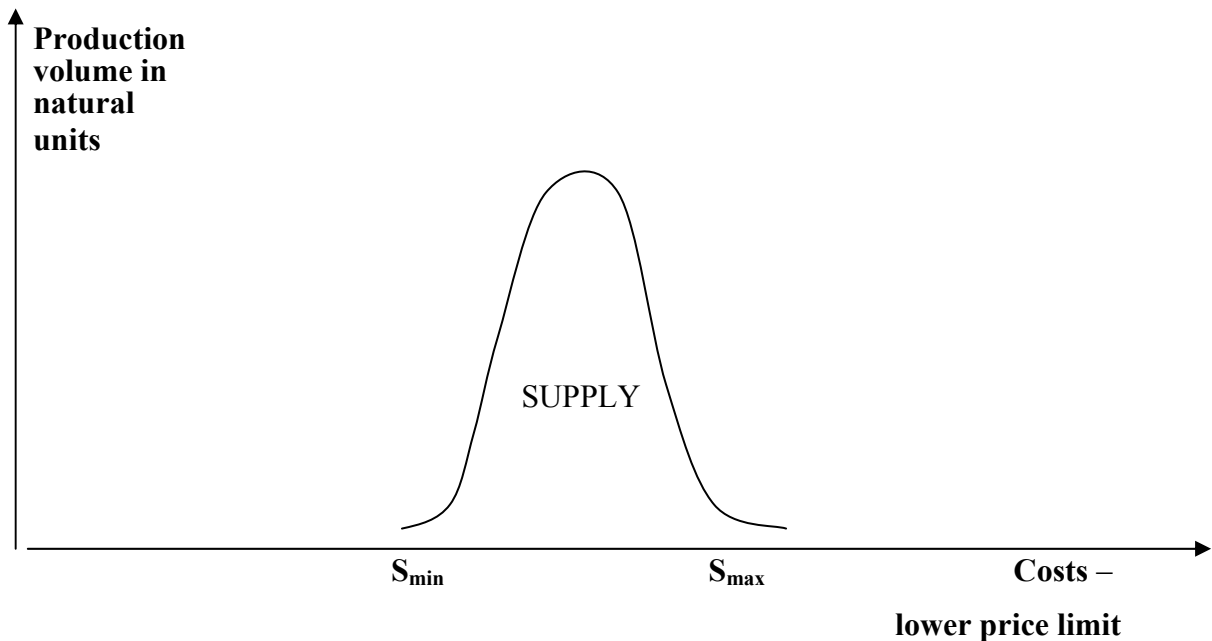
We have already discussed the patterns of supply and demand distribution described virtually in all economics textbooks.

The authors thereof believe that there are very few enterprises capable of manufacturing products at low cost and very many enterprises of the opposite type.

Sure enough in reality there are as few high-performance businesses as the direct opposite. Average enterprises form the overwhelming majority. Therefore plotting the distribution of similar interchangeable products manufactured by all enterprises of the sector we inevitably obtain a curve close to that described by the Gauss-Laplace normal distribution law (see *Fig. 3*).

⁹For the moment we only discuss productive consumption setting aside personal consumption.

Fig. 3



The figure¹⁰ shows a kind of abstract supply distribution. The distribution seems to live and breathe: every day it changes — expands and shrinks, goes up and down, the curve's shape changes because the output also changes at certain enterprises, the cost reduces or grows, new facilities and even manufacturers appear.

Indeed, the curve shape changes but the trend (which is of primary interest to us) is very similar to that shown in *Fig. 3*.

We see that the lower price limit is represented by a range of ($[S_{\min} - S_{\max}]$) rather than by a single value. It means that the value of S_{\max} may be an acceptable selling price for an enterprise with costs equal to S_{\min} . Therefore low-cost producers are ahead both in profit potential and market standing.

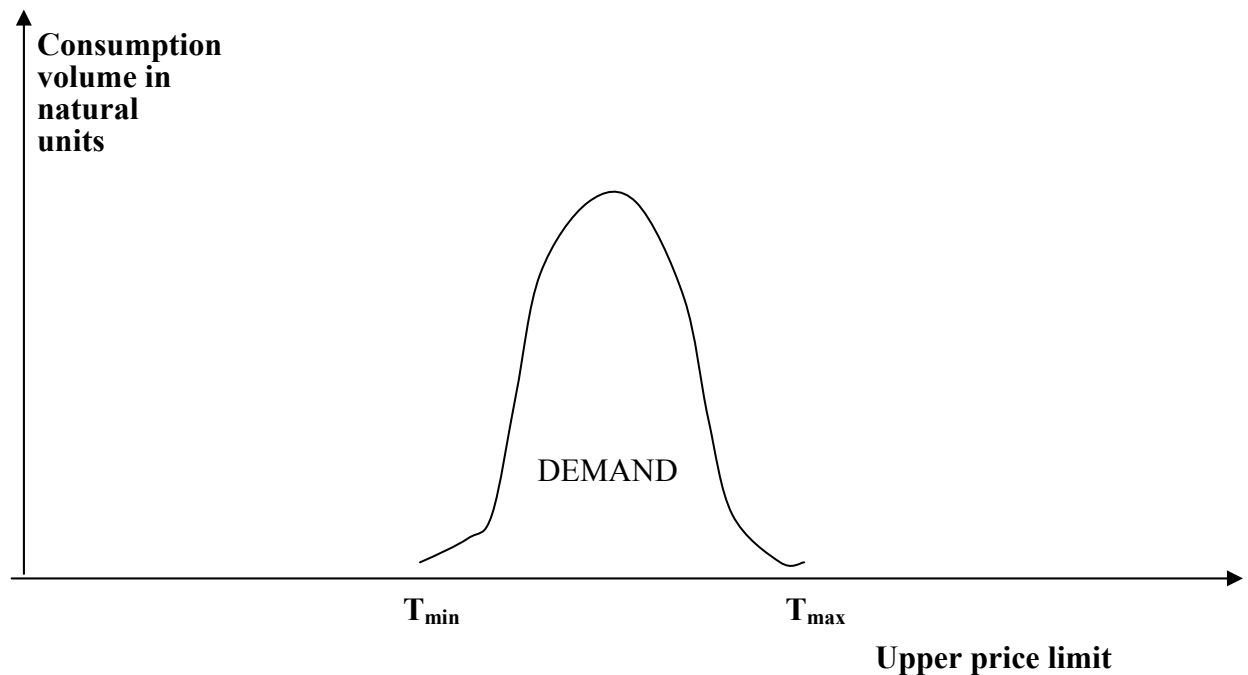
¹⁰ In reality the curves describing the output distribution in the range from the lowest (S_{\min}) to the highest costs (S_{\max}) may have various shapes. The thing in common is that they are all similar to the curve in *Fig. 3*.

This also holds true for demand distribution by the upper price limit, a particular value attributed to each customer.

Unlike the lower price limit the upper price limit has no definite calculation algorithm. The lower price limit describes the producer's break-even point. The upper price limit is much more complicated, the key issue being that a buyer purchasing a product for subsequent use forms only a part of its goods' cost. Buying equipment he affects depreciation charges, buying steel — some of his inventory costs. The cost of purchased power partially determines the “purchased power cost”. If you buy cheap steel you may afford more expensive fuel. In real life the problem is solved intuitively, based on what we call business experience. Let us take an example. Presently Russian nitrogen fertilizer producers buy gas at about \$50 per 1,000 cu m and many of them operate at marginal profitability. On the other hand, East European nitrogen fertilizer producers buy gas at a price over \$250 per 1,000 cu m. Obviously, technology makes all the difference. But the upper gas price limit is \$40 for the former and \$150 for the latter.

Within a local economic system which any country is the pattern of demand distribution by the upper price limit would essentially repeat the pattern of distribution by the lower price limit discussed earlier (see *Fig. 4*).

Fig. 4



The curve shown in *Fig. 4* is also very changeable: it may expand and shrink, go up and down. Such metamorphosis depends on the implementation of new technologies of the purchased product use, the expansion (or reduction) of its potential application, consumer-specific reasons, the appearance of new consumers, the withdrawal of former consumers, etc.

Naturally the balance of advantage lies with enterprises with the highest upper price limit (T_{\max}). They would also be quite satisfied with an actual price equal to T_{\min} . Since a producer's costs are generally directly related to its production efficiency a lower value of the upper price limit (demand) may be associated with factors far beyond consumer influence.

As the supply and demand curves are represented in *Figs. 3* and *4* in identical units (natural units) and the upper and lower price limits are in essence cost attributes we may superimpose the charts (see *Fig. 5*).

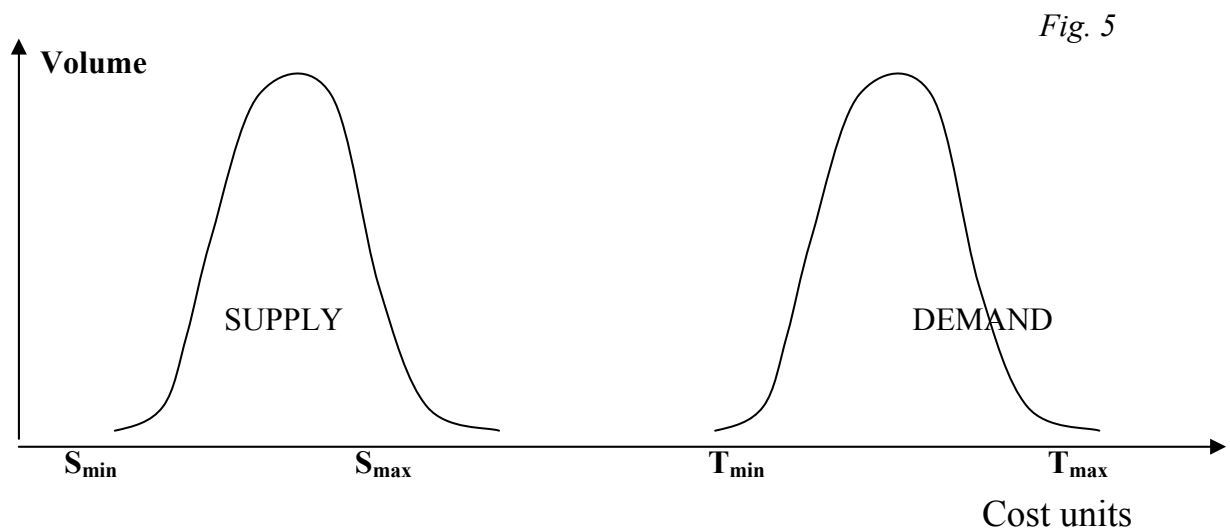


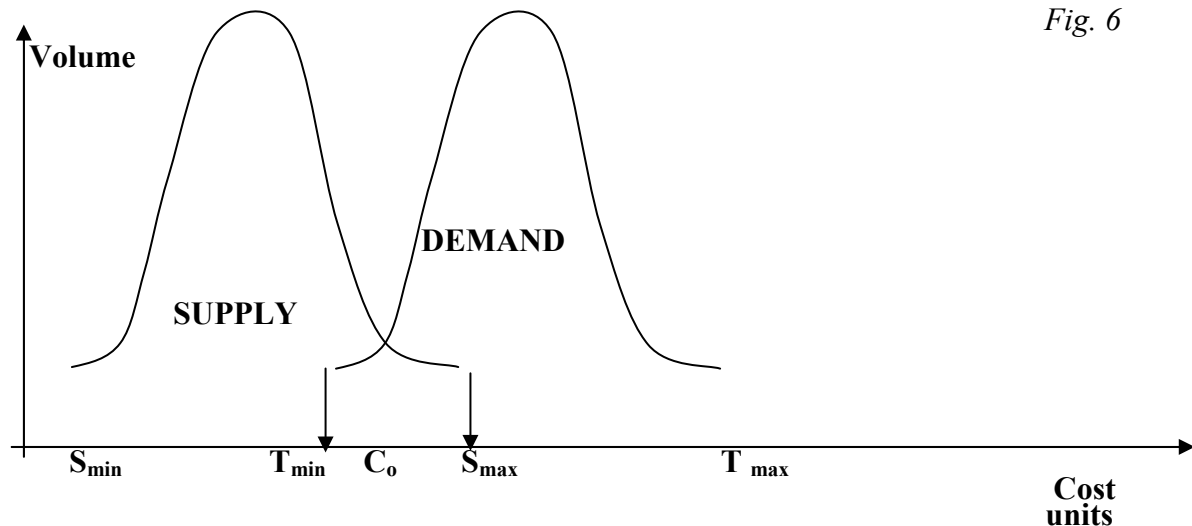
Fig. 5 depicts the situation when the manufacturers' marginal lower price limit is lower than the customers' minimum upper price limit ($S_{\max} < T_{\min}$) which means that all products manufactured may be purchased because all manufacturers would cover their production costs at a profit and all consumers would obtain goods at prices improving their financial condition¹¹.

The $[S_{\max} < T_{\min}]$ price bracket satisfies both manufacturers and consumers (supply and demand being equal).

Fig. 6 describes the situation when the $S_{\max} > T_{\min}$ condition is satisfied. Unlike *Fig. 5* in this case the cost of manufacturing some of the marketed products is higher than the highest price some consumers are willing to pay.

¹¹ The actual financial situation may become worse through no fault of experts who calculated the upper price limit or for other reasons not directly related to the discussed issues.

Fig. 6



If supply and demand match in volume and distribution patterns (as shown in *Fig. 6*) the projection of the supply and demand curves' intersection, i.e. point C , may be deemed the cutoff price meaning the price at which only transactions would be executed satisfying conditions (1) and (2) assumed earlier. At that price an offer with the costs of $[C_o - S_{\max}]$ (the lower price limit) would not find economically sound demand. At a price equal to C_o demand at the minimum upper price limit of $[C_o - T_{\min}]$ would not be satisfied.

Cut-off Price

It is absolutely clear that the most realistic and widely spread pattern is the one when demand and supply do not coincide, either in shape of distribution or in numerical values. The pattern illustrating an excess of demand over supply is shown in *Fig. 6*. It is well-known that this phenomenon is referred to as the *deficit*.

It is clear that if demand exceeds supply, its certain portion can not be just physically satisfied. Due to this, the cutoff price will be set at the level which leaves no economic reasons for a certain number of consumers to buy those goods. Definitely, this can only occur if the price

for those goods exceeds the highest acceptable price level for that number of consumers. Volume of demands of those failed-to-be buyers must be as large as required to bring to conformity the integrated demand and supply values. In the given example (*Fig. 6*), the supply-and-demand equilibrium is achieved by cutting off buyers with the highest price values within the range $[C_o - T_{\min}]$.

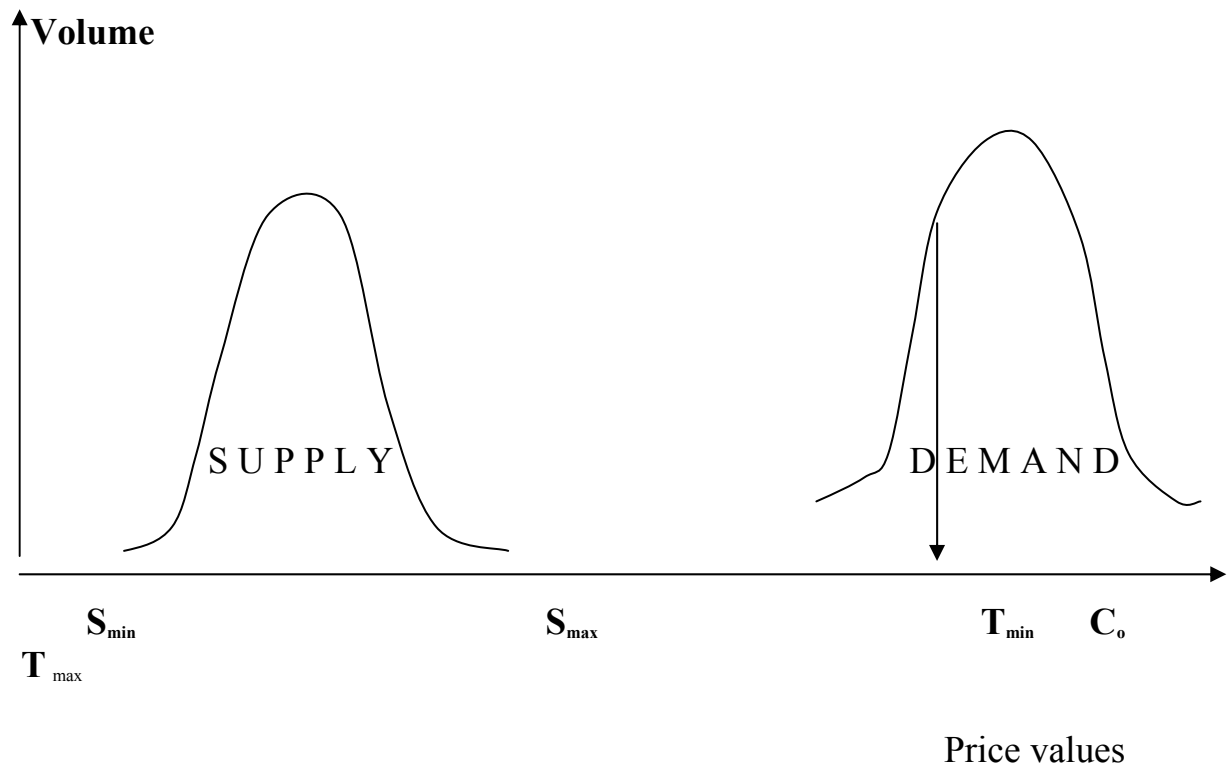


Fig. 6. Excess of demand over supply (deficit).

Hence, the cutoff price (C_o) will be within the range of values $[T_{\max} - T_{\min}]$ provided that the following condition holds:

$$T_{\min} < C_o < T_{\max} \quad (5),$$

also considering that the area of the supply curve within the range $[S_{\min} - S_{\max}]$ is equal to the area of the demand curve within the range $[C_o - T_{\max}]$.

Overstock is known as opposite to deficit. If supply exceeds demand, a certain amount of manufactured products will not be sold. Hence, the cutoff price will not allow a certain number of manufacturers to recover their expenses (*Fig. 7*).

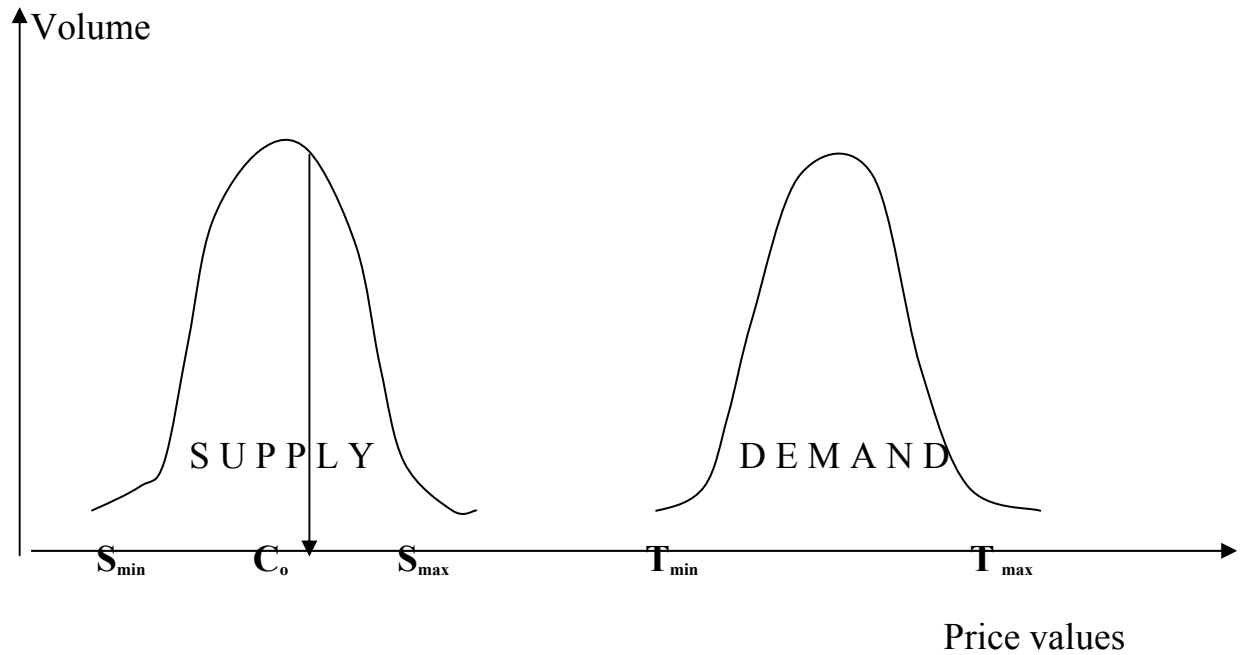


Fig. 7. Excess of supply over demand (overstock).

In this example (*Fig. 7*), supply-and-demand equilibrium is achieved by cutting off manufacturers with the lowest price values within the range $[C_o - S_{\max}]$.

Therefore, the cutoff price (C_o) will be within the range of values $[S_{\min} - S_{\max}]$, provided that the following condition holds:

$$S_{\min} < C_o < S_{\max} \quad (6),$$

also considering that the area of the demand curve within the range $[T_{\min} - T_{\max}]$ is equal to the area of the supply curve within the range $[S_{\min} - C_o]$.

It is notable that, given monopolized supply, the range of values [S_{\min} - S_{\max}] shrinks to a point, while the supply curve turns into a vertical line. Given monopolized demand, it is the range of values [T_{\min} - T_{\max}] which shrinks to a point. Interaction of demand and supply monopolies with respect to price formation is basically limited to the first pattern considered above (*Fig. 2*).

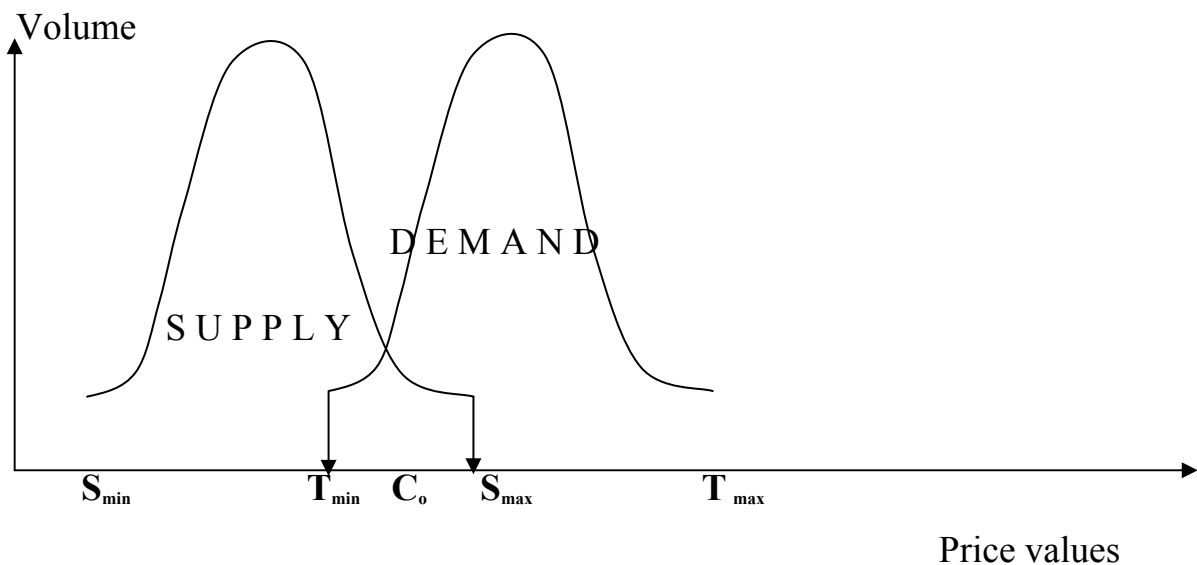


Fig. 8. Deficit and overstock.

Fig. 8 illustrates the situation where the condition $S_{\max} > T_{\min}$ holds. Here, the pattern differs from those represented in *Fig. 6* and *Fig. 7*, since manufacturing costs of some portion of products offered to the market turned out to be higher than the highest price which some consumers agreed to pay.

If demand and supply coincide both in numerical values and in the shape of distribution (this very case is intentionally represented in *Fig. 8*), then the projection of the intersection point of demand and supply curves, C_0 , can be viewed as the cutoff price. In this case, this value means that, at this price level, those and only those transactions will be made for which earlier adopted conditions (1) and (2) hold. At this price value, supply

which involves costs (lower price limit) within the range $[C_o - S_{max}]$ will not meet any economically justified demand. At the price value equal to C_o , demand which involves minimum values of the upper price limit within the range $[C_o - T_{min}]$ will not be satisfied. Hence, a situation may in principle be assumed where deficit for consumers and overstock for suppliers would simultaneously exist.

Exchange Trade

That is easy to see that the examples we have discussed illustrate inter alia price movements at commodity exchanges (trading in oil, non-ferrous metals, coffee, cocoa, etc.).

We have naturally given only an overall picture of the price formation process in the situation when the relation changes between mass demand for and mass supply of the products to be further employed in production¹². Real life is much more complicated.

In the first place, there are no industries (except non-ferrous industry) producing identical exchange goods — their attribute characteristics vary, at least slightly, affecting actual prices.

Second, actual prices depend to a large extent on the cost of goods transportation, markets, other infrastructure factors, financial terms of transactions, etc.

Third, market price fluctuations are materially affected by government agencies accumulating various stocks, reserves, etc.

Fourth, over the last century the market has imbibed many inventions enabling the hedging of producer and consumer risks of which the most remarkable is futures trading.

Fifth, supply and demand distribution parameters to a large extent are formed by the economic environment in which sellers and buyers operate.

¹² We did not touch upon the issue of ultimate consumption pricing.

The demand-supply situation is also materially affected by taxes, tariffs, quotas, customs duties, etc.

Now we can both specify exchange trading patterns and analyze them based on a new approach.

Taking the ideal case of supply and demand equilibrium (*Fig. 5*) we can determine the range within which the equilibrium price should fall:

$$S_{\max} < C_o < T_{\min}.$$

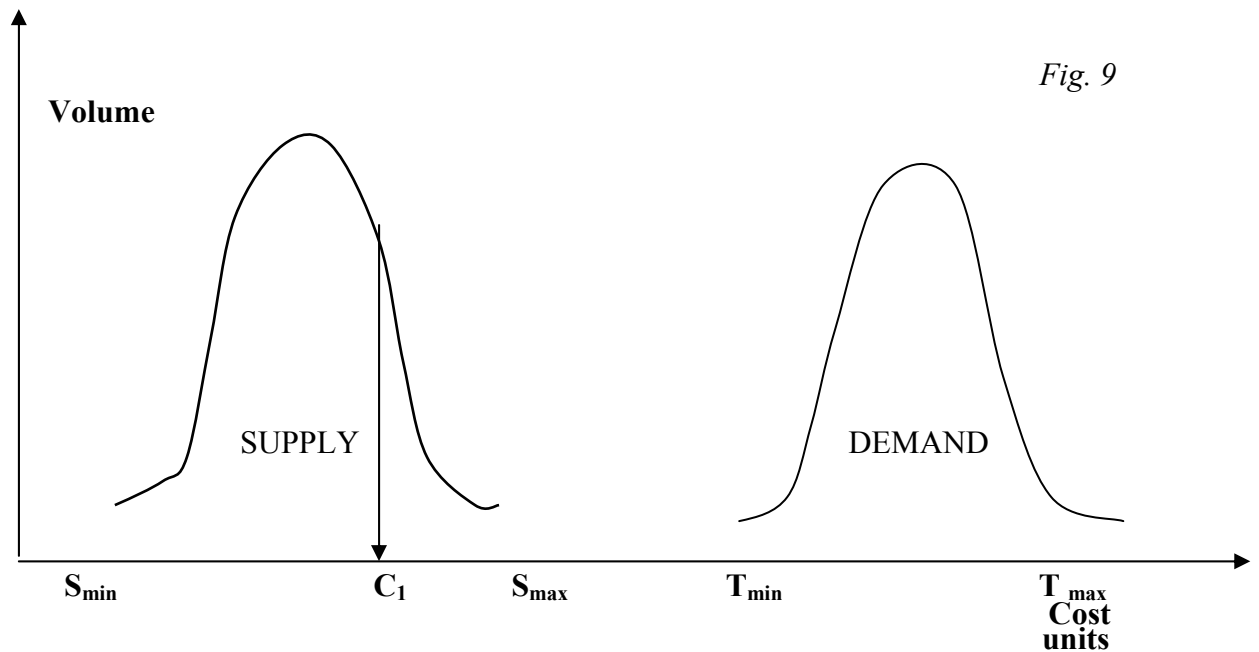
This is the range accommodating all possible fluctuations of market prices including exchange prices in the context of supply and demand equilibrium.

One should bear in mind that only a minor quantity of physical commodities is traded through exchange. The bulk of commodities forming the staple of exchange trading is sold under “floating price” contracts. In that case the contract price depends on the exchange price at the moment which may be different in each particular case. The price may be “tied” to the shipment schedule or the date of goods delivery. Most frequently the price is established as the average exchange price over 10 to 15 days preceding the contract execution. There may be many different options.

Besides, the contract price differs from the exchange price in particular delivery terms. The contract price takes into account the deviation of actual delivery terms from those prevailing at exchanges. Exchange prices have two alternatives: “spot delivery” or “delivery in three months”. The contract price is affected by markups and discounts reflecting the deviation of actual delivery terms from those prevailing at exchanges. In certain cases exchanges hold separate sessions for different payment terms.

The equilibrium of supply and demand is a unique or rare phenomenon in real exchange trading. In most cases exchange trading reflects the inequality of supply and demand, their volume not so easy to determine. Only the fact of a dynamic change can be recorded: demand prevails when prices rise and supply prevails when they fall. But the degree of deviation remains latent. The absence of complete information on all market parameters affecting supply and demand enables manipulations and influencing of exchange prices.

Exchange prices are to a large extent formed under the influence of the customer distribution by affordable upper limit prices and the producer distribution by satisfactory lower limit prices.



If the equilibrium of supply and demand disappears the fluctuations of exchange prices are driven both by the amount of resulting shortage or overproduction and the sellers' and buyers' composition and distribution pattern.

In the charts presented above the supply and demand distribution curve was close to that described by the Gauss-Laplace function. But in certain

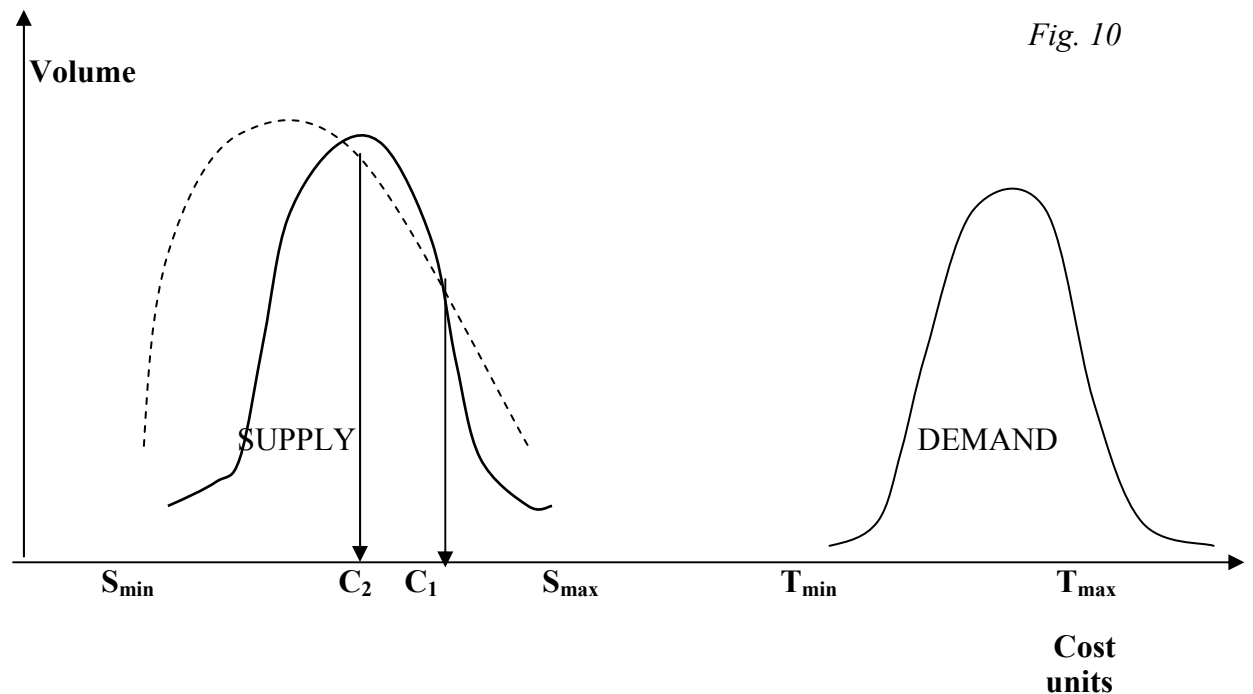
cases the curve's shape drastically changes. Let us look at charts presented in *Figs. 9* and *10*.

Fig. 9 shows the situation when supply exceeds demand and some producers cannot sell their goods as the cutoff price is below cost. The cutoff price is equal to C_1 .

However, the growing share of “high-performance” producers with low values of the lower limit prices (*Fig. 10*) shifts the cutoff point in the direction of S_{\min} which means that equilibrium prices (C_2 and C_1) cut off equal amounts of supply balancing it with demand.

That was the feature of exchange prices used by the USA in the second half of the 1980s to “dramatically reduce hard currency flow to the Soviet Union resulting from the fall in oil prices in cooperation with Saudi Arabia and to restrain the Soviet natural gas export to the West”.¹³

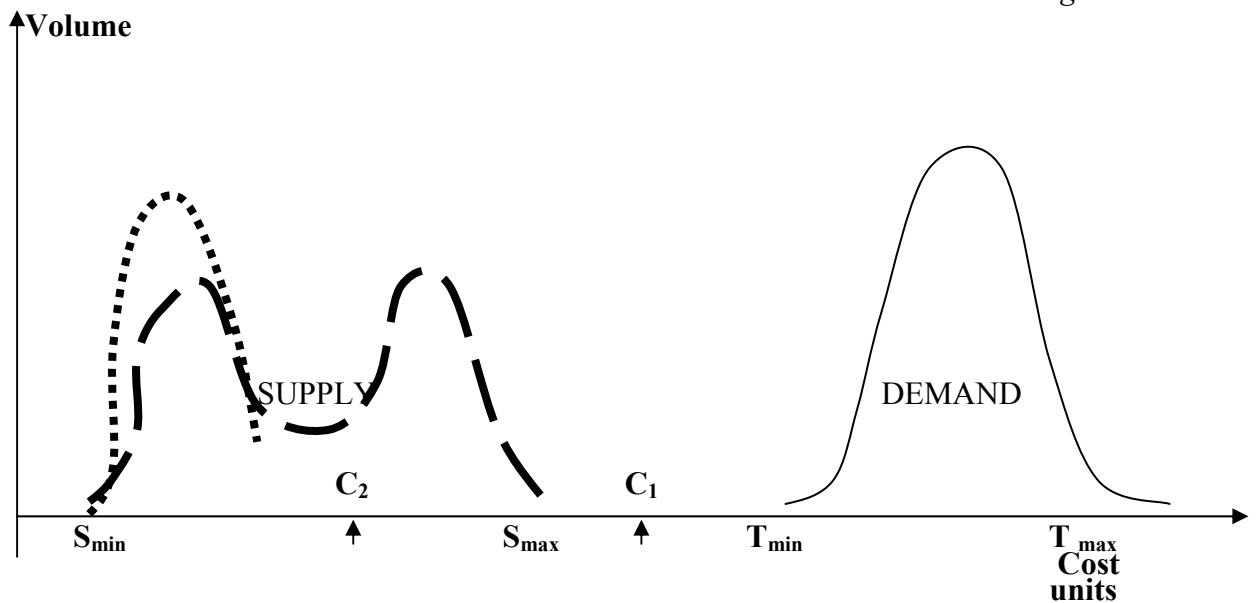
The 1986 sharp fall in oil prices is believed to be an economic factor giving rise to a prolonged collapse of the country's budget and the USSR disintegration. The fall in crude oil prices resulted from a dramatic increase in oil production and export by Saudi Arabia unexpected by many market participants.



¹³ Kuznetsov L.M. All American. — Moscow, 1990. P. 18-19.

Before 1985 two major sources of oil supply existed: the South (including Saudi Arabia) and the North (oil production in the USSR). During that period supply (the area of the dotted line figure) was generally in balance with demand (the area of the figure in the right part of *Fig. 11*). The established equilibrium price satisfied both the USSR and the Middle East countries where the cost of oil production was 4 to 6 times lower.

Fig. 11



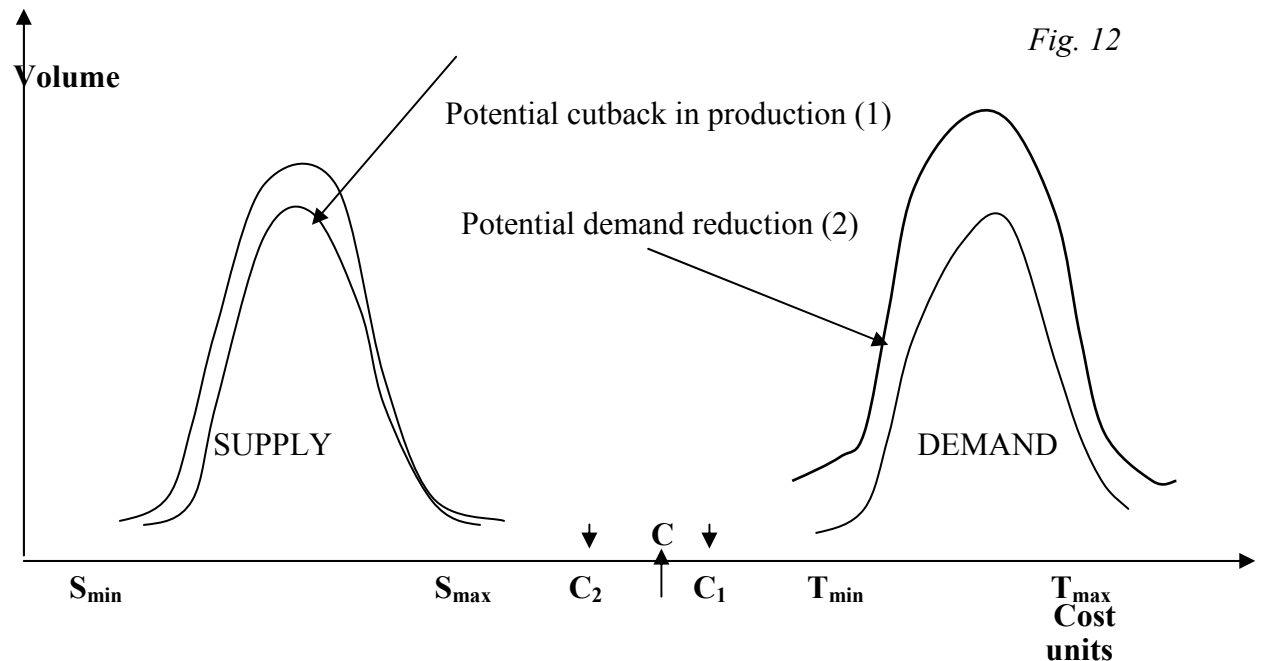
The situation changed after Saudi Arabia supplied additional oil. The growing supply exceeded demand (see *Fig. 11*) resulting in a 65% fall of the cutoff price (alias world oil price) over six months.

The USSR leaders resorted to the worst possible tactics to counteract the global economic sabotage. To cover the revenue gap the oil production was maximized reaching in 1987-98 its historical maximum of over 500 mln t a year. But that only contributed to price stagnation on the world oil market which lasted for more than 10 years and became a factor resulting in the collapse of the USSR centrally planned economy and the world socialist system.

Our approach to the exchange price formation (unlike “Marshallian cross”) explains such phenomena of the exchange goods market as the influence of producers and consumers on the level of prices, enables the understanding of futures trading, etc.

The exchange trading charts (*Figs. 5, 9-11*) give the insight into such organizations as the OPEC and the role of exchange goods stock accumulated by importing countries. Let us illustrate this by an example.

Let us take a typical mass media account: “According to OPEC President Ali Rodriguez the exporters will cut oil production if following the USA the EC will try to force down the prices supplying oil from government reserves” (SMI.ru, September 29, 2006).



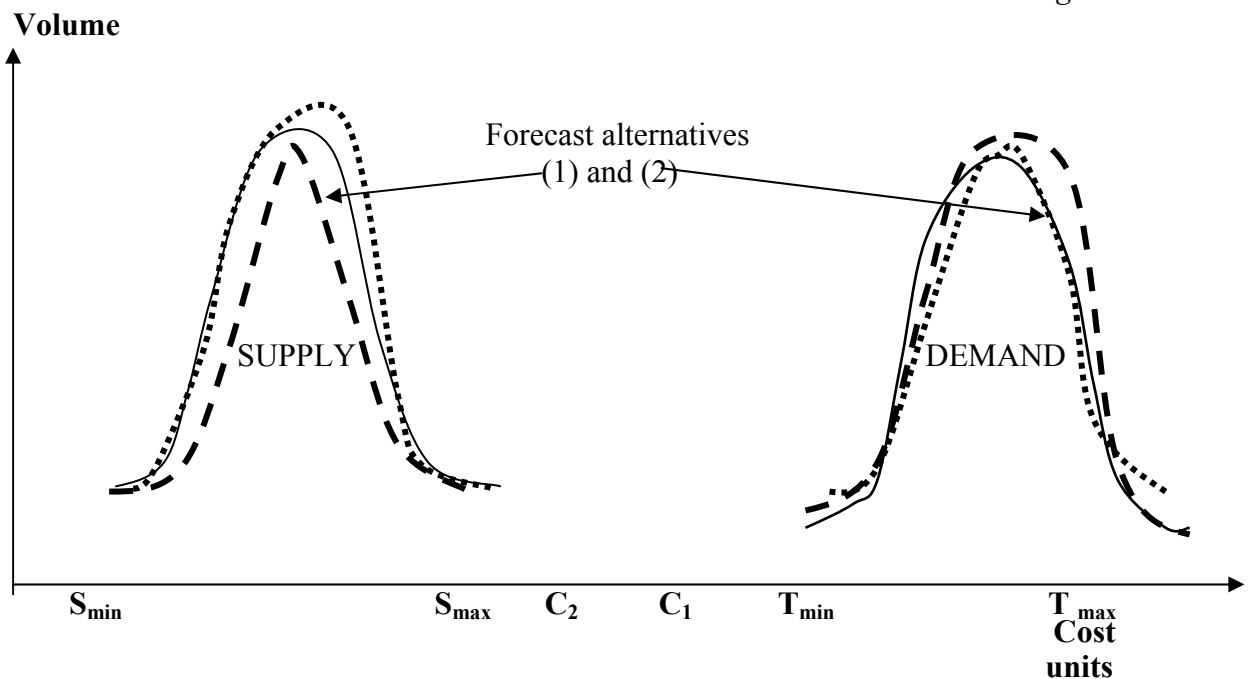
What is the meaning of this statement? It says that any attempts of exchange goods (i.e. oil) consumers to force down world prices through an intervention (resulting in a relative reduction of demand) would be challenged by the reduction of supply through scaling down oil production (i.e. supply reduction). The explanation is trivial enough although it contradicts the present-day idea of the equilibrium price formation mechanism.

The suggested approach enables a graphical interpretation of the exchange equilibrium price (C) movements affected by different factors (see *Fig. 12*). The introduction of the mechanism of coordinated cutback in production (supply) results in the price establishing at C_1 . If oil reserves are involved the price reaches C_2 . If the two factors overlap the price movements are driven by the scale of intervention and the reduction of supply.

If we can obtain a forecast of requirements, demand, reserves, etc. the suggested approach may be used to calculate the possible future cutoff price.

The tool we have developed may also be used for the interpretation of futures trading in exchange goods¹⁴.

Fig. 13



The futures trading is based on forecast price movements depending on the shifts in supply and demand. Acceptance of the forecast of

¹⁴ Futures contract means a contract for purchase or sale of a commodity (financial asset) to be delivered at a future date.

predominant demand growth (2) suggests price increase whereas the forecast of predominant supply growth (1) suggests price reduction.

Price Elasticity

The section devoted to price elasticity in the book recommended as the most famous textbook begins as follows: “When a commodity price increases the volume of demand reduces. This is quite obvious”¹⁵. In the context of establishing prices for marketed commodities¹⁶ this may be as readily accepted as the fact that the Sun turns round the Earth. Supply of or demand for commodities intended for further commercial use is not affected by prices (although it seems to be). Rather prices are driven by the relation of supply and demand.

This follows from the price formation pattern suggested earlier and explaining why prices are affected not only by the “demand” and “supply” factors. Price movements depend to a considerable extent on the extreme values of the upper and lower price limits. The actual price cannot be below the minimum lower price limit as there are no producers meeting this condition. Similarly no customer can buy commodities at a price above the marginal upper price limit.

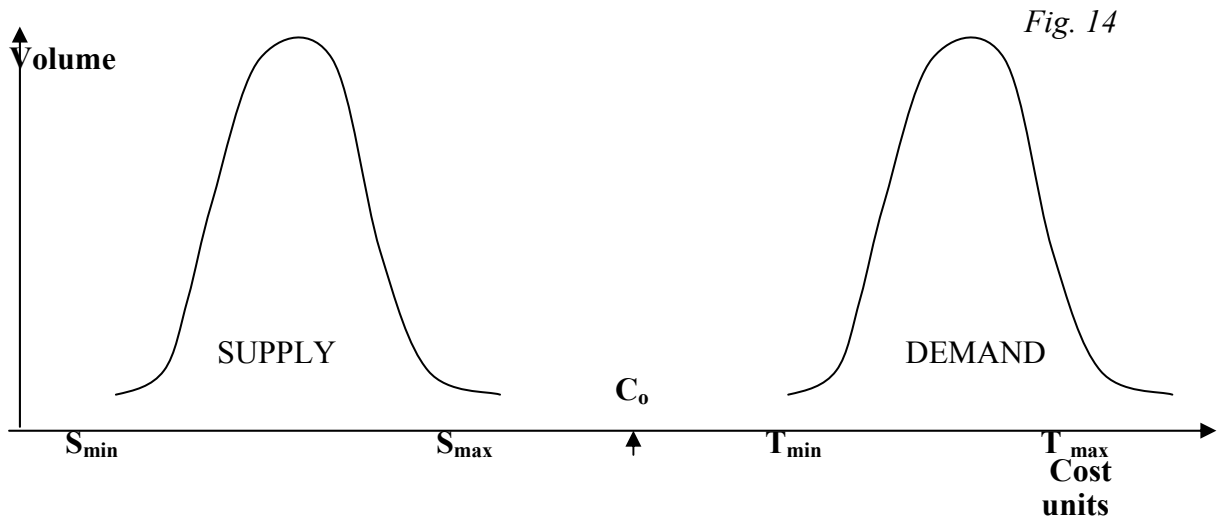
Therefore, the range of price movements on the market of commodities intended for further production of goods and services may be described by the following expression:

$$S_{\max} S_{\min} < C_o < T_{\min}.$$

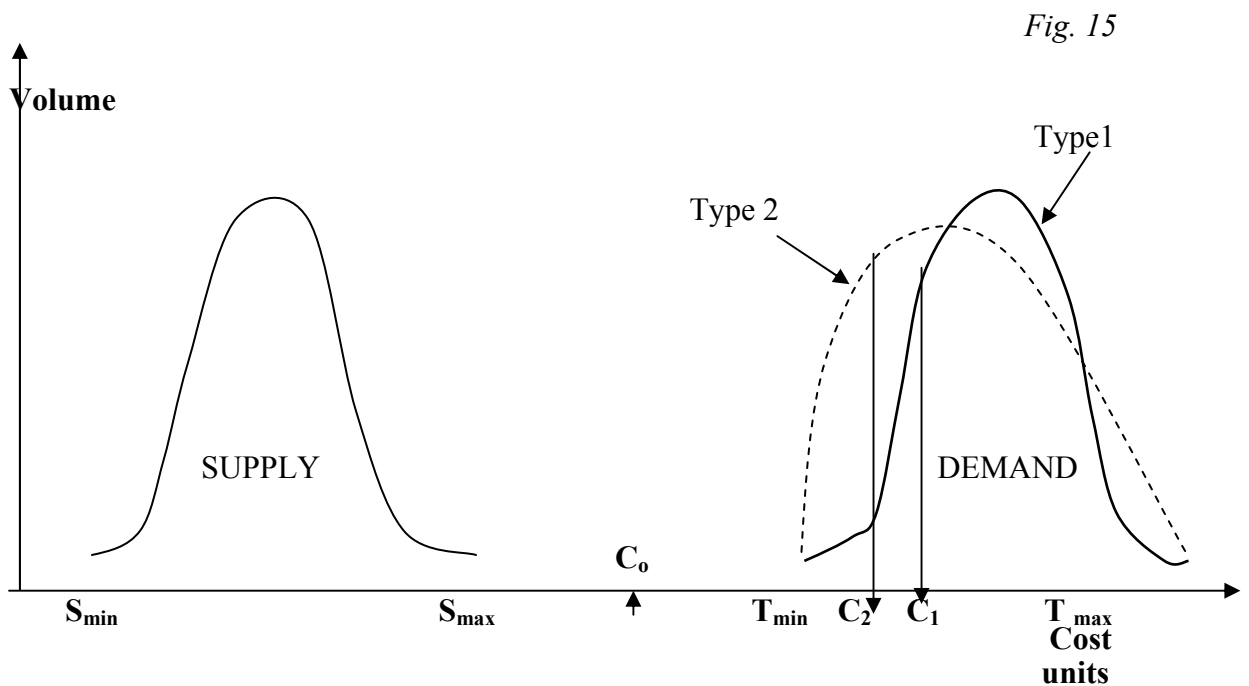
This range accommodates all possible market price fluctuations.

¹⁵ Sloman J. Economics, 5th ed./Translated from English. Ed. by S.V. Lukin — St. Petersburg: Piter, 2005. P. 63.

¹⁶ It should be emphasized that in this case we only consider the elasticity issue in the context of establishing prices for commodities intended for commercial use. The aspect relating to consumer goods pricing will be discussed in “Consumer Market Pricing Mechanism”.



Price movements subject to the gap between supply and demand — i.e. price elasticity — are affected by the pattern of consumer (producer) distribution by the upper (lower) price limit. Let us illustrate this statement by an example based on the original patterns discussed earlier. Original pattern: demand is equal to supply. In this case (see *Fig. 14*) the equilibrium price (C_0) would be established within the range of $[S_{\max} - T_{\min}]$.



Another pattern: demand is overgrowing supply (see *Fig. 15*).

In this case the equilibrium price, alias the cutoff price (C_1), would be established within the range of $[T_{\min} - T_{\max}]$.

However, in case of a different distribution of the same aggregate demand volume (type 2 rather than type 1) the cutoff price (C_2) would also be different. The *equilibrium* price can change subject to the pattern of consumer distribution by the upper price limit.

It is easy to see that the described phenomenon may also be illustrated by an example of supply excess over demand.

The above discussion suggests that price elasticity, i.e. price movements driven by the supply and demand behavior are governed by the efficiency based distribution pattern of either producers (in case of supply growth) or consumers (in case of demand growth).

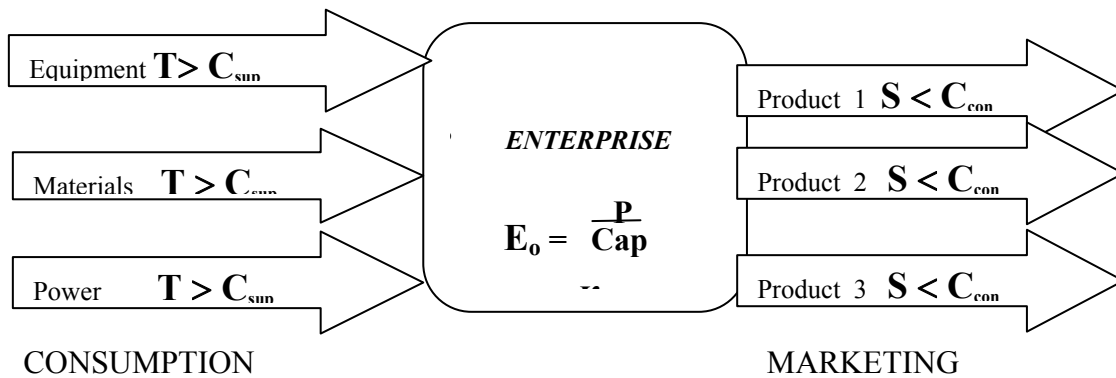
As to supply and demand elasticity in the context of price movements referred to in the quotation from “Economics” it should be recognized that this concept is totally meaningless when we talk about commodities intended for commercial use.

“Price Recipients” and Price Dictators

The charts presented above explain many processes found in economics. They show that the price established by the market balances supply and demand. The equilibrium price cuts off producers (in case of excessive supply) or consumers (in case of unsatisfied demand) with the worst performance. Therefore, the price acts as a “market cleaner” — removing the weakest market participants it prevents other participants from stagnation. Market economy is driven not only by the ambition to save and make more money but also by changing prices motivating a continuous search for new, more efficient business solutions.¹⁷

¹⁷ One should avoid absolutizing of the suggested patterns. They are mere patterns — life is much more eventful. If the lower price limit of the products manufactured by an enterprise is

Fig. 16



Every enterprise (company) plays two concurrent roles — it acts both as consumer and producer of goods and services (*Fig. 16*). Its economic ties with the outside world, purchases and sales may follow any of the patterns discussed earlier.

Incorporated in a common network of extensive economic ties, small and medium-sized enterprises, with few exceptions, do not perceive that they are the pricing system's subjects: they sell and buy “as the market dictates”. Since a primary objective of each enterprise is to maintain and increase the overall efficiency (E_o) its management is basically concerned with the internal production structure and takes the “incoming” and “outgoing” prices for granted.

Major corporations deserve special mentioning. “Sitting fat” they can dictate prices to their suppliers (C_{sup}) and consumers (C_{con}) although within certain limits.

A concept of economics is the concept of “perfect market”, i.e. a market where major producers cannot dictate prices, the type of market meant by economists creating pricing theories. The approach to pricing they

below the market price it does not mean immediate bankruptcy of the enterprise. In practice there are many time-tested ways of survival in a competitive environment. Reality is much more complicated than the suggested patterns which, however, accommodate basic crucial elements of market pricing.

suggest is aimed at revealing the price formation mechanism in normal market environment where both “price dictators” and “price recipients” behave according to the same common pricing principles.

Ultimate Consumption

The “producer – consumer” chain may be very long but sooner or later it is terminated by ultimate consumption. The term “ultimate” is used because a product is not purchased for commercial purposes and the results of its use do not return to economic operations.¹⁸ This sector incorporates government procurements of goods (services) as well as purchases for personal and household consumption.¹⁹ Naturally as any other rule this rule has exceptions. Government authorities (at least in Russia) are willing to provide fee-based services and households are not always strictly nonprofit. Therefore in this case we also discuss a prevailing trend which is as follows: ultimate consumption is not connected with deriving revenue and money making.

Although government procurements and personal purchases seem similar in their economic substance they have different patterns explained by the scale of procurement and the strictness of financial constraints incidental to every buyer.

Government procurements are similar to industry procurements as they are voluminous, discrete and piecemeal. Their range is strictly determined by budget decisions. Non-compliance with such decisions falls under the definition of “non-purpose budget expenditures” and entails legal liability. While public contracts are executed after tenders, competitions,

¹⁸ There is, however, a reservation — any equipment purchased for government needs and further sold may return to the market. But it was purchased for a different purpose, not to derive additional revenue. This is another exception proving the rule.

etc. the methods and places of procurement are the same as for commercial procurements.

Personal procurement is a continuous process a purchasing as small batches of goods as possible. Buyers are free to choose both the range and the quantity of goods. The freedom of choice is exercised in outlets specially intended for trading in consumer goods.

The main difference between government procurements and personal purchases is that procured goods become government property whereas purchased goods become private possessions.

Government Procurements

Government procurements funded from the budget are divided into general-purpose and special-purpose procurements. Special-purpose procurements include products, goods and services intended solely for government consumers such as military equipment.

General-purpose government procurements do not differ from similar procurements intended for commercial purposes.

As the end-consumer spending budgetary funds is not revenue-oriented it acts at the market solely as a buyer rather than a seller. Therefore it does not care for such constraints as the upper price limit, the only constraint being its budget. So, strictly speaking, the end-consumer is satisfied with any offered price provided it is within the available budget.

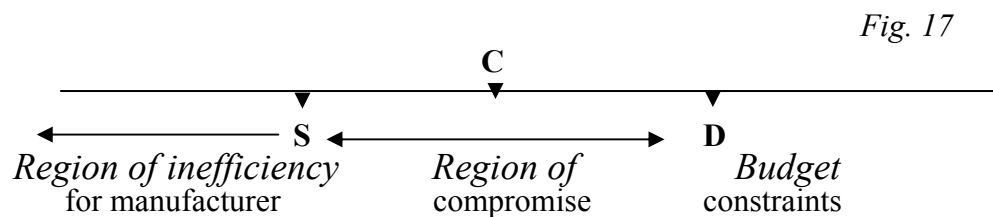
The problem resulting in this connection in government procurements is deemed unsolvable. Tenders, competitions, bidding, requests for expenditure information, etc. do not help much to save budgetary funds and restrain corruption.

¹⁹ Products intended for ultimate consumption for this very reason differ from end products. For instance, exported goods are not involved in ultimate consumption. An end product is an accounting unit whereas ultimate consumption is an economics concept.

It should be noted that here we touch upon the contact of property and assets²⁰ belonging to the systems with different — economic (business) and noneconomic (budget) — objectives.

Whereas the process of government procurements (and hence the pricing mechanism) differs from commercial procurement of goods and services formally it remain a purchase and sale transaction.

Fig. 17 shows a government procurement pattern “from a single source”. Exteriorly it looks similar to that in *Fig. 2*. The only material difference is that in case of a commercial transaction the difference between the established price (**C**) and the upper price limit (**T**) is an economic performance of the consumer while in the case shown in *Fig. 17* (**D-C**) means potential budget savings.

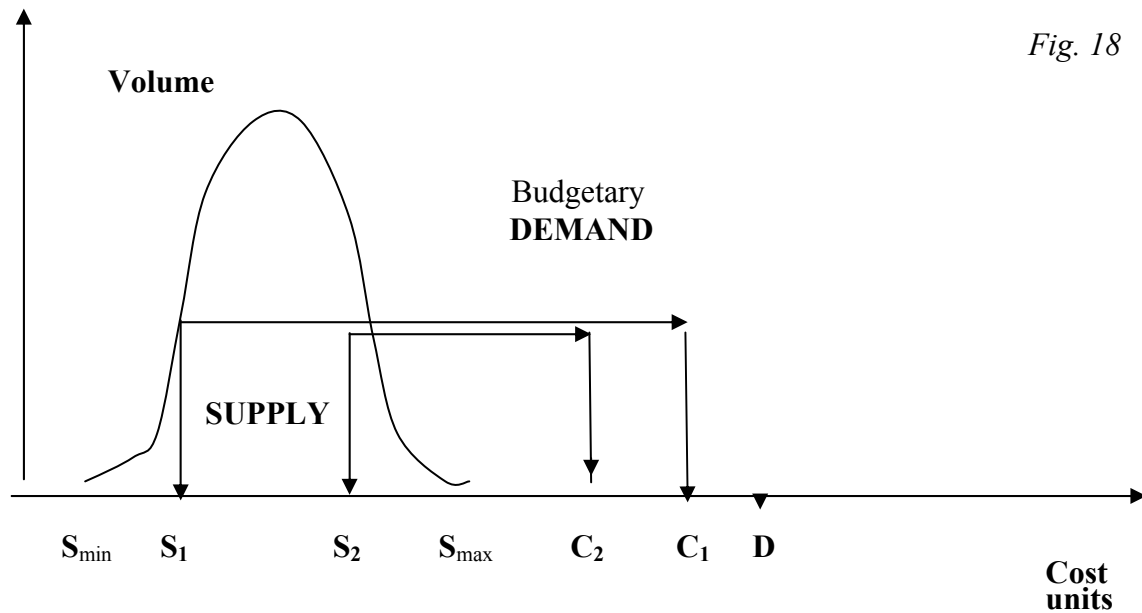


The price of multipurpose products procured by the government is dictated by the market. In some instances, however, the prices of such products funded by the budget exceed the market prices. Solution of this problem is hardly within the powers of economics. It should rather be solved by lawyers.

The chart in *Fig. 18* describes the government procurement pattern by tender. In the circumstances under review alternative 2 with the asked price of C_2 is more advantageous than alternative 1 with the asked price of C_1 although under the former alternative the lower price limit is lower ($S_1 < S_2$). The example shows that better business (financial) performance

²⁰ For details see Chapter III.

of a producer does not give it a definite priority in selling products for government needs. Sometimes a good reason to win a tender is the availability of information on prices offered by competitors.



Determination of prices for products (goods, services) procured by the government remains similar to that on free market but has certain material differences.

Labour Costs

Before discussing the issue of pricing in personal, i.e. ultimate consumption we should first address the economic nature of remuneration which is of primary importance for a work on pricing as remuneration is often understood as the price of labour power.

So, does the worker sell his labour?

If labour is a commodity then it is a very peculiar commodity. The employer buying labour cannot dispose of the acquired commodity. Labour remains with the worker.

This “sold commodity” has no lower price limit. You cannot claim a salary of \$100,000 on the grounds that during the preparation for the sought-for job you bought sausages at least at \$1,000 per kilo. On the contrary, your salary prompts what kind of sausage you can afford.

Labour as a “commodity” has no upper price limit either. The employer is guided by “generally accepted practice” rather than by the marginal cost of performed work.²¹

Nor has labour a price. There is only certain payment for its employment. The energy value of the strongest labor is equivalent to power purchased for a few dollars. So the worker is not paid for his force. What is he paid for? Mind? Skills? What is then the economic sense to pay for disability periods? Do singers, musicians, painters sell their labour? Does the government buy the labour of officials and military men?

A plenty of questions to answer. We may try to answer them through tracing the transformation of the remuneration system over ages.

What was the prototype of remuneration in the primitive society? It must have been a piece of mammoth meat and a place by the cave fire. The best piece and the best place were afforded to the most proficient hunter

²¹ This is practically impossible unless the worker manufactures marketable products alone — from the beginning to the end.

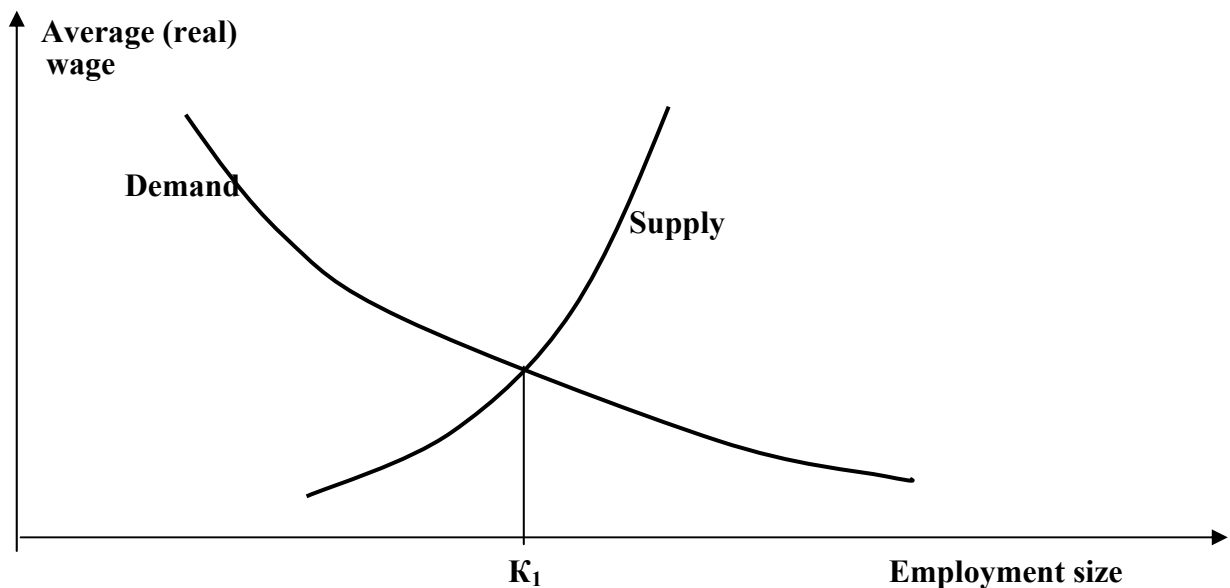
in recognition of his efforts and skills. But those who were not engaged in hunting — women, old people, children — also received their share although a smaller one. They shared the product extracted from nature, its energy value undoubtedly exceeding their work input.

What has changed since then? The form has changed while the substance remained the same. But the changed form artfully disguises the changeless substance.

Virtually all researchers of the labour problem consent that labour has the attributes of commodity. This seems to be confirmed by the labour response to changes in the demand-supply situation. The shortage of labour results in the growth and the labour surplus in the reduction of its cost.

The economics textbook we refer to offers the following chart:

Fig. 19



The author believes that the chart “shows the aggregate demand for and the aggregate supply of labour, i.e. the aggregate demand and the aggregate supply within the entire economic system”.

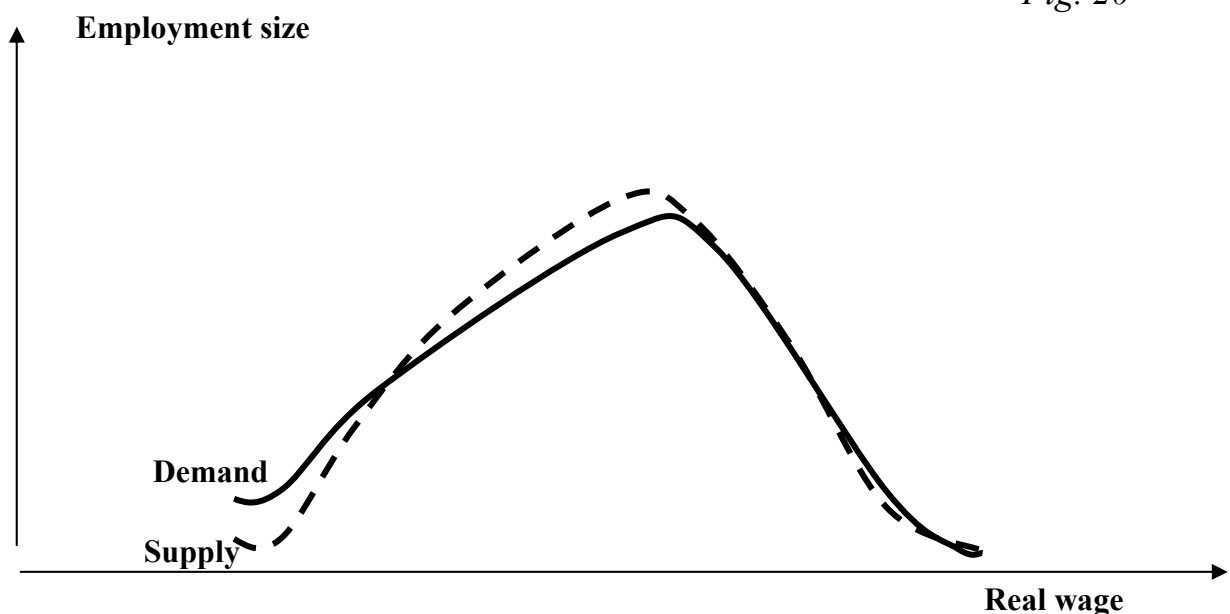
To put it straight the economic situation is none too good if the distribution of labour supply and demand follows the pattern shown in *Fig. 19*.

Indeed, only a small part of workers (K_1) have jobs remunerated according to their claims. The overwhelming majority either does not want to work for offered wages or cannot find jobs as supply outdistances demand.

One can hardly encounter anything like that in real life. *Fig. 19* demonstrates the absence of reconciliation between the training of required manpower and public demand, failure by employers to understand how much they should pay and unjustified employee claims for high wages. Judging by the chart in *Fig. 19* the number of those who send out resumes hoping to obtain employment as top managers paid hundreds thousands dollars a year considerably exceeds the number of those looking for waiter or salesman jobs.

The real labour supply and demand correlate although they are not in perfect harmony (see *Fig. 20*). Some ranges feature a labour shortage whereas others feature a labour surplus.

Fig. 20



The highest demand for labour is found in the medium remuneration bracket, which is typical of all economic systems. The bulk of workers in any country receive wages falling within the brackets. People looking for jobs are quite adequate and guided by generally accepted practice rather than by desire to spend their first salary on an aircraft. Therefore the distributions of demand for and supply of labour are close in shape and may be described by the Gauss-Laplace distributive curve.

The shortage of labour results in the growth of its cost indeed. It should be noted that a shortage of any natural resource provokes competition. However, the competition for labour has certain peculiarities. The matter is not that the employment problem, i.e. unemployment, has always existed. During the history of civilization labour supply has always outdistanced demand but average wages have nevertheless been growing (compare the living standards of today's English workers with those described by K. Marx in his "Capital").

Another fact is worth mentioning. Many people look for jobs at high-performance enterprises where wages are raised notwithstanding the ample supply of highly-qualified labour including those with critical skills.

In real life wages are reduced or restrained when enterprises get into financial difficulties. The new labour supply at a loss-making enterprise may drop to zero which does not prevent further cutting of wages.

It follows from the above discussion that each worker's wage remains his personal share of benefits obtained by joint efforts of all employees and distributed in society. Wages are a cash confirmation of an individual's entitlement to a share in social wealth intended for consumption. The wage size reflects the degree of its recipient's involvement in any attribute deemed by a society necessary for its maintenance, development and protection.

What does contemporary society distribute among its members?

It distributes what it did at the time of its emergence — the product obtained from nature by labour or, eventually, the power taken from nature.

Jointly, by its common human efforts mankind takes increasing power volumes from nature. Namely the growth of natural power “tribute” to mankind constitutes the consumers’ and producers’ surpluses.

So, through wages workers have a share in “power revenue” of the society to which they belong. They compete both with employers and with officials, military men, artists, pensioners, i.e. with all members of the society.

Consumer Market Prices

How does contemporary society distribute its aggregate income?

One should recognize that it is naturally a very complicated process. Society must provide for everyone — both those who work and those who dance and sing.

The complexity of today’s consumer market results in the development of various theoretical constructs failing to explain real pricing processes. It is not quite clear why consumer goods pricing attracts so much attention of researchers not in the least concerned with the definition of consumer prices transition to industrial goods pricing.

The distribution of wealth through currency and consumer market prices reflects the paradigm of values and priorities established in society.

There is a concept of “economic environment”. Every individual understands economic environment primarily as a system of prices for goods offered by the market. The education of individuals includes the familiarization with and training in coping with market reality giving rise

to the insight into the economic environment which will surround the individual to his dying day. The market reality into which an individual sinks deeper and deeper with the increase of years is relatively stable and taken for granted. A child going to the baker's understands that bread costs 10 Rubles and cannot be bought for 9 Rubles. This is a rather strict condition.

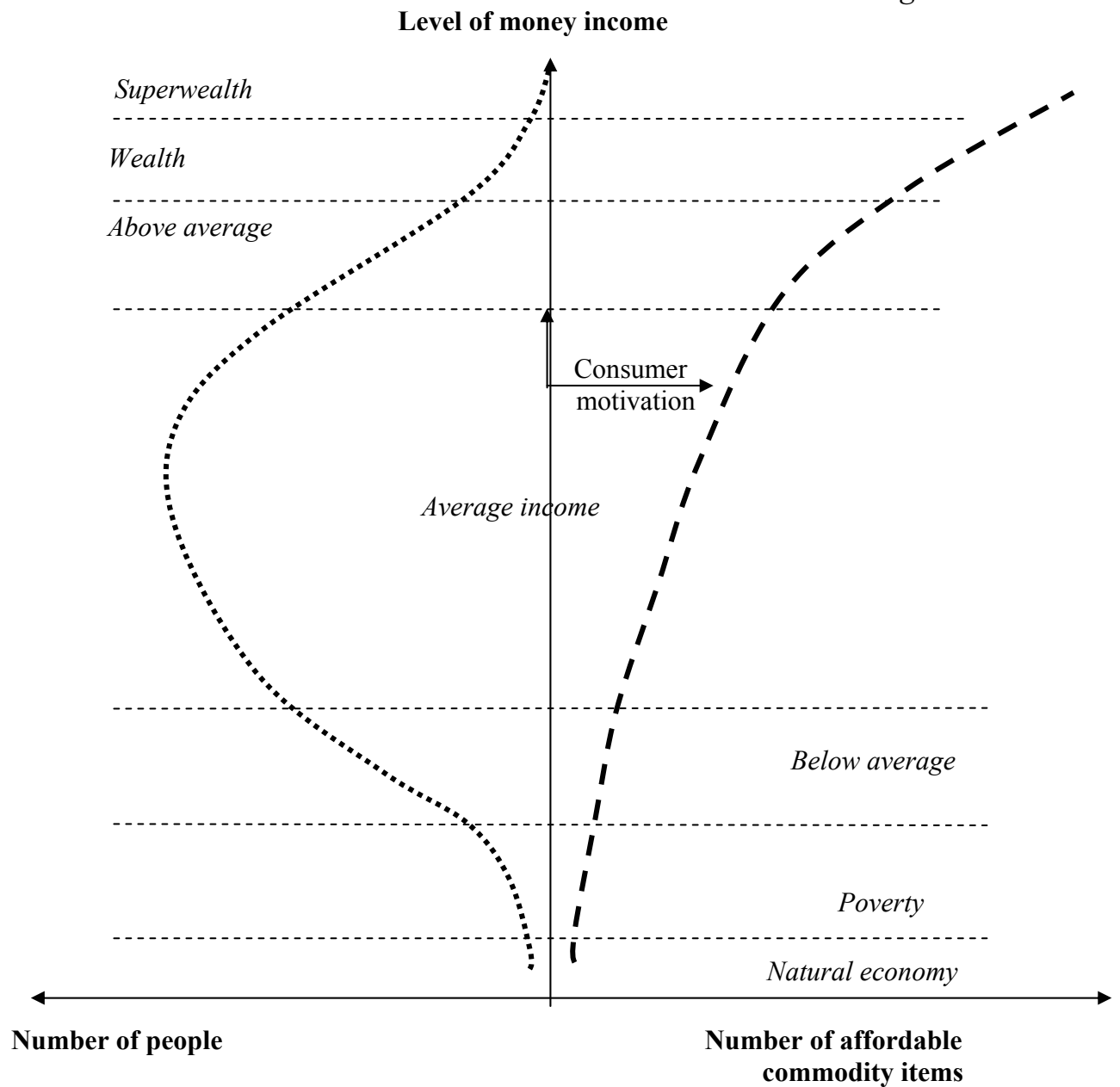
From childhood up an individual encounters with the differentiation of prices for similar and substitutional goods. With the passage of time he learns that there are bakeries selling bread at 150 Rubles rather than at 10 Rubles, that there are certain goods (commodities or services) neither his family nor other families in his community can afford.

Such is the process of a person's gradual positioning in economic environment whose main attribute is a relatively high stability. Although the environment changes such changes are mostly evolutionary and very rarely revolutionary.

The consumer pricing pattern reflects a complex aggregation of social relations and is an element of the government fiscal and social policy. It has no place for marginal utility but specifies the limits of consumer financial possibilities. The relations between buyers and sellers result in continuous changes of the price system, both the buyer and the seller adjusting to the changing situation through trial and error. Each consumer experiments looking for the best offer and each seller looks for the best demand niche giving rise to a continuous updating of the price system and its ever-changing trends.

It is a fact of common knowledge that society is divided into strata by living standards and income level. If we assume money income as a basis we can frame the distribution of people and the number of commodity items by consumer strata or the level of living standards.

Fig. 21



The existing consumer pricing pattern reflects people's differentiation by income level based both on the price of goods within the same product line group (food, clothes, shoes, etc.) and the number of such groups potentially affordable to people forming different consumer strata.

The lower distribution level accommodates households close to natural economy and purchasing a very limited range of goods (matches, salt,

etc.). The number of people belonging to this level is as insignificant as the number of those who can afford aircraft and boats.

The correlation between consumer market prices and sellers (producers) costs undoubtedly exists although not a strict one. The prices of goods sold to low-income consumers are subsidized whereas luxury goods are sold at prices much higher than producers (sellers) costs. In is general knowledge that the price of the same commodity depends on the place and time of sale.

Note should be taken of consumers' behaviour on a steady market basically determined by the fact that the level of well-being closely connected with money income also reflects a person's social status.

In any society the vector of most people's aspirations is directed upward the ordinate of the chart shown in *Fig. 21* which is very important for the understanding of the consumer pricing pattern. Most consumers try to compensate reduced income by reducing the consumption of affordable commodity items to avoid the descent to a lower stratum.

On free market no consumer is limited by affordable commodity items. In some cases he can ascend or descend but these exceptions do not refute the general trend.

Being at a certain consumer level does not mean the possibility to possess the entire range of goods relating to a given stratum. Another basic motivation determining a consumer's market behaviour is the aspiration to possess the most important commodity items, their consumption values commensurate with his status. For some strata such value is an aircraft, for other strata — a mobile telephone. Most consumers tend to stand the pace, to meet the criteria of a given stratum, to demonstrate their wealth.

Consumer market pricing reflects the principle of priority of the general over the particular. Under varied supply the bulk of consumers are not concerned with either particular transactions' profitability or trading

profits. Whereas profit-making companies discontinue the production of distressed commodities or cut relating production costs a store may consider selling at a loss a justified marketing course (intended, for instance, to attract customers by an expanded range of goods).

The consumer (buyer) also regards each purchase in the context of the predetermined budgetary constraint.

The above discussion shows that the consumer market has a dynamic system of interrelated prices forming in aggregate the framework of human economic environment. Consumer prices are a continuously developing element of human civilization pervading the centuries-old history of mankind.

Consumer prices are highly responsive to the social climate. In the extreme case when most consumer items are withdrawn from free market and a rationing system is introduced the prices remain within the “black market” brackets. As soon as the situation improves the market revives. The behaviour of the consumer pricing tree is very similar to a living organism’s reaction: it droops in unfavourable conditions but begins blooming again when the situation improves.

The experience of post-war Germany and post-communist countries shows that consumer prices form an entity — as soon as the market constraints have been removed the prices move unidirectionally and synchronously.

Consumer Pricing Mechanism

The consumer pricing mechanism is tuned to the following condition:

$$\sum_{t=1}^n \sum_{j=1}^m V_{tj} C_{tj} > \sum_{t=1}^n Z_t, \text{ where:} \quad (6)^{22}$$

²² Although as noted earlier exceptions are possible.

V_{tj} means the volume of sales of the j -th commodity item during period t ;

C_{tj} means the price of the j -th commodity item during period t ;

n means the marketing period duration;

m means the number of commodity items;

Z_t means the vendor's costs over period t .

The conditions described by inequation (6) making trading economically meaningful (revenue exceeding aggregate costs) in practice are even more strictly observed as revenue must permanently exceed costs. Otherwise the so called "cash gaps" occur which may only be covered through borrowing (if at all).

Therefore, it seems that the following requirement should be met:

$$C_r > C_p, \quad \text{where} \quad (7)$$

C_r is retail price;

C_p is purchasing price.

The pricing of products intended for industrial use (processing) and consumer goods has both affinity and differences. In both cases a market-clearing price is established although in different ways.

Presently it is infrequent that a manufacturer markets its products directly to consumers. Goods are traded through numerous intermediaries resented by end-consumers seeing their only meaning in vulgar lucre.

Therefore, in addition to explaining the consumer pricing mechanism we should also understand the economic substance of intermediaries engaged in wholesale trade. Let us try to understand why a tooth paste producer does not engage in retail (see *Fig. 22*).

Fig. 22 depicts a situation arising after a lot of goods (a certain quantity of tubes of toothpaste) have been produced.

Fig. 22



The cost of the goods production equals to **AB**. The goods may be marketed as soon as the production process (**O**) has been completed. The revenue received on an accrual basis is represented by **BD**. Concurrently with the receipt of sales revenue the cost of goods sold (storage, insurance, safeguarding, loading, transportation, etc.) increases. The aggregate cost dynamics (production costs included) is represented by **AC**.

The owner has to cover his production and sales costs and make some profit (revenue exceeding the **C** level).

The production of toothpaste tubes must be continued which requires at least the recovery of initial investments (**AB**). Clearly a new cycle cannot be started at moment **T₁**. It is only possible at **T₂** although by that time sales costs have not been recouped. It will only happen at **T₃**. However, does the producer have time, is he satisfied with discrete production and its overlapping marketing? If not he must find a way of payback acceleration. This is a function performed by a wholesale customer

(marketer). Waiving the marketing function the producer cedes some of his profit gaining in time.²³ The wholesale intermediary promotes the producer's sales providing for payback and profit and hence a continuous process.

The wholesale intermediary buying out from the producer is in a situation similar to that shown in *Fig. 22*. He can engage in retail himself or resell the goods to a number of small intermediaries and such chain may be long enough.

From the moment of production completion to the moment of price setting by the vendor the product remains a product, article, thing, anything at all but does not automatically become a commodity and is not in demand. It only becomes a commodity after the price has been set.

The product is wanted before it has become a commodity. Depending on the price such want may or may not transform into demand. The price initiates demand. Or more specifically — the price determines the pull of demand.²⁴ This phenomenon is known as “price demand elasticity”.

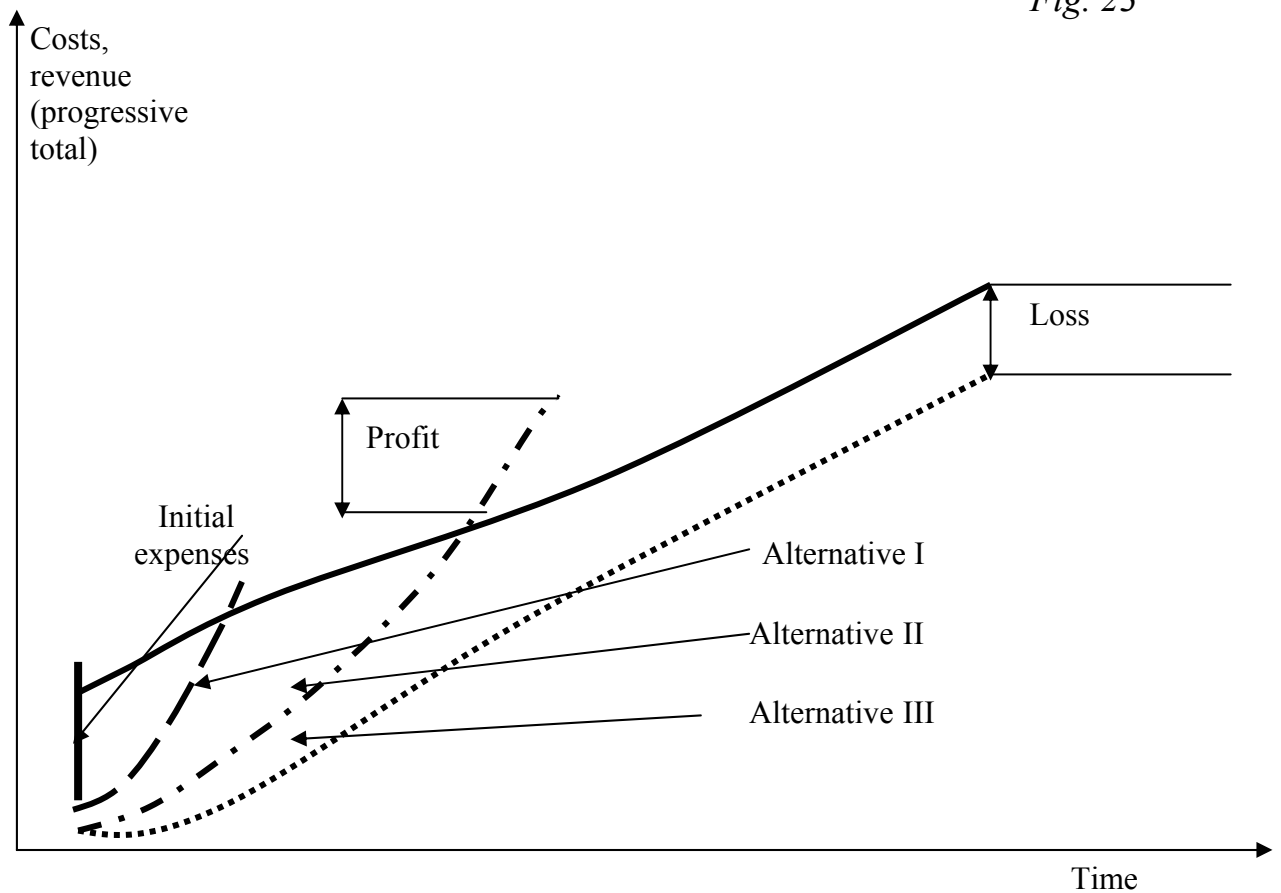
It should be emphasized that in real life the same commodity is sold at different prices. The lower the price the more (a consignment) the buyer is supposed to purchase. This is what intermediary operations are based on. Clearly the price of a commodity goes up as it approaches the buyer and goes down in the situations of mass demand in retail chains such as “Cash & Carry”, hypermarkets, etc. Therefore, unlike the market of commodities intended for commercial use the price on consumer market determines the pull of demand rather than demand parameters determine the price.

²³ In practical terms we should talk of the prevention of losses caused by the impossibility to resume production rather than of profit shrinkage.

²⁴ The term “pull of demand” means the number of purchases per time unit — hour, day, etc.

Here we face the well-known chicken-and-egg problem. The answer to the problem is that for most commodity items the price limit (from the producer price to the price in a nearby store) is only adjusted each time a new lot of product is manufactured. Launching a bakery the producer bears in mind a certain price range. If he fails to fall within the range he wouldn't launch the production.

Fig. 23



The economic environment incorporating consumer pricing has been forming for centuries, one of its components being price demand elasticity. However, the fact of demand price elasticity inherent in consumer market conveys little. The issue becomes clearer if we regard demand elasticity as a factor of the variation of sales revenue growth rate (see *Fig. 23*).

A higher price suggests higher revenue (alternative III) but requires more time to sell out. A lower price yields a lower total sales revenue (alternatives I and II) but saves time. The longer it takes to sell out the higher the seller's total costs. The seller's task is to select the price providing for the highest sales revenue (alternative II).

During the selling process the seller can affect the pattern of revenue and cost growth. The shape of correlation between the values given in expression (6) is characterized by the highest degree of uncertainty. We can only record the presence of certain trends. For instance, the growth of advertising expenses gives a boost to demand but not always, not in every case and no one can foresee the extent of such boost.

Based on price the optimum degree of demand elasticity may be achieved by rapidly “piercing” growing costs with growing revenue and arriving at a maximum excess of the latter over the former. In practice such solutions are found intuitively and many of them come to good.

Equilibrium Price

According to the ideas earlier prevailing in economics, an equilibrium price on the consumer market results from the equilibrium of supply and demand. We have already discussed the presentation of this equation by J. Sloman.²⁵ Now we should understand what really happens.

We shall first try to define the equilibrium of supply and demand. In the example discussed earlier (see *Fig. 1*) the equilibrium of monthly supply and demand was achieved at 350 Kt of potatoes sold at 60 pence a kilo. Was it possible for real sellers and buyers to determine the moment when demand became equal to supply? And why is the equilibrium “tied” to a

²⁵ Sloman J. Economics, 5th ed./Translated from English. Ed. by S.V. Lukin — St. Petersburg: Piter, 2005. P. 56-57.

certain time period, i.e. month? Would the equilibrium price be achieved if supply and demand were not in balance every week?

We can find no answers to these questions in textbooks and in real life things are quite different.

We have already discussed the functions of intermediaries operating between the producer and the consumer. Another important feature of consumer market should be emphasized — it cannot operate without a stock of commodities. These factors materially affect the equilibrium price formation.

If you are a smoker (too bad of you!) then having called at a tobacco shop you are exposed to an ample supply confronting your miserable demand. Those who will call at the shop after you may possibly have needs rather than demand. The needs (if any) of solvent purchasers will transform into demand. This means that supply and demand on consumer market have different characteristics: supply is represented by volume measurable in the mass of commodities units whereas demand — by a process with the intensity depending on the quantity of goods sold per time unit. Therefore, speaking of the relation of supply and demand one should recognize that, translated into real life, it means that aggregate supply is opposed by aggregate demand. But a process may only be opposed by a process and an aggregate — by an aggregate and hence it is incorrect to speak about the supply and demand equilibrium in the consumer market context.

The situation has radically changed compared with the earlier examples where the supply and demand equilibrium was discussed in the context of a market of commodities intended for commercial use. Whereas a particular industrial demand for industrial goods may be satisfied by one or several producers and the volume of such demand (by one enterprise or company) may be commensurate with the volume of a particular supply

an individual consumer demand is insignificant compared with supply of consumer goods.

During the earlier discussion of industrial goods pricing we did not emphasize the differences between requirements and demand which are of major importance for the understanding of the consumer pricing mechanism. The reason is that, first, unlike the market of industrial goods based on continuous business relations the consumer market provides for the free movement of buyers selecting from the available variety of sellers and goods. And second, consumer demand for each commodity item is not restricted by the consumption performance (no upper price limit exists). When shopping you usually have an amount of money exceeding the price of the most expensive cigarettes available but you buy the cigarettes meeting your consumer preference.

In practice the fluctuations of demand for a particular commodity are counteracted by the change in its stock whereas supply expressed in the mass of commodities units is counteracted by requirements measured in the same units. And while the pull of demand is a real category and you can easily determine how many packs of cigarettes are sold per hour, week, month... the requirement is an estimated category. One could easily misestimate requirements. Besides, a requirement not always becomes demand.

The stock of a particular commodity may be different such as working stock, reserve stock, goods in transit, etc. The seller determined the market equilibrium by the fluctuation of total stock. Sellers have certain control points. If, other things being equal, the pull of demand has reduced the stock below a certain volume the price should be increased and a shortage is possible. If the stock exceeds a certain volume the overstocking is possible and therefore advertising should be intensified and the price reduced.

When such fluctuations are within certain margins arousing no misgivings the price remains steady and may be called equilibrium.

The equilibrium price means the seller's patience and willingness to bear his costs provided given this or that revenue. He finds the equilibrium based on experience, the equilibrium indicator being a relative stability of the stock.

The equilibrium price means the buyer's willingness to cut his budget by the price resulting from his evaluation of the price conformity with the quality of goods and the social level selected by the buyer for himself. Such evaluation is based on his experience of positioning in economic environment. The indicators of future changes for the buyer are behavioural trends and dispositions of other buyers as well as price fluctuations.

Our discussion of consumer pricing related to a stable market. Shortage and oversupply are deviations describing extreme market conditions. Both situations arise from equilibrium. We wouldn't be able to record shortage or oversupply if we didn't know existing standards.

Except when shortage and oversupply are immanent in the economic system²⁶ they result from the absence of a strong relation between the production of consumer goods and their retail prices. The situation seems to be very simple only in abstract theoretical constructs: the production grows as the price increases and reduces as the price goes down. In real life supply elasticity on consumer market in each particular case has a certain time-lag.

Supply, i.e. the production of any commodity available on consumer market is aimed at meeting demand for such commodity. The producer obtains information on demand from marketers or through independent estimate. On the one hand, the producer becomes aware of the changed

market situation with a certain delay since a sharp change of demand eventually resulting in both oversupply and shortage initially affects the marketers' stock. One cannot immediately estimate whether the changes are persistent.

On the other hand, a steady production process requires secure relations between producers and marketers. This type of business relations provides for high-performance production but reduces its mobility (volume decline or increase). A large-scale production and marketing network coupled with the mass of commodity within the distribution network distort the price elasticity of supply tending to result in shortage or oversupply.

Basic Contradiction

It is self-evident that economic activities consist of a set of simple coupled "producer-consumer" elements — the atoms of economics and this chain ends in ultimate consumption. An increase in production, consolidation, centralization and concentration, technological and organizational changes, the development of new types of activity change nothing in the janiform set of alternative attributes of the economic atom representing a basic economic contradiction of mankind. **Our consumer interests contradict our producer interests.** Everyone tries to sell dear and to buy cheap.

It should be noted that the world triumphs over the contradiction with remarkable ease gaining from the difference between resources obtained and spent in opposite qualitative situations.

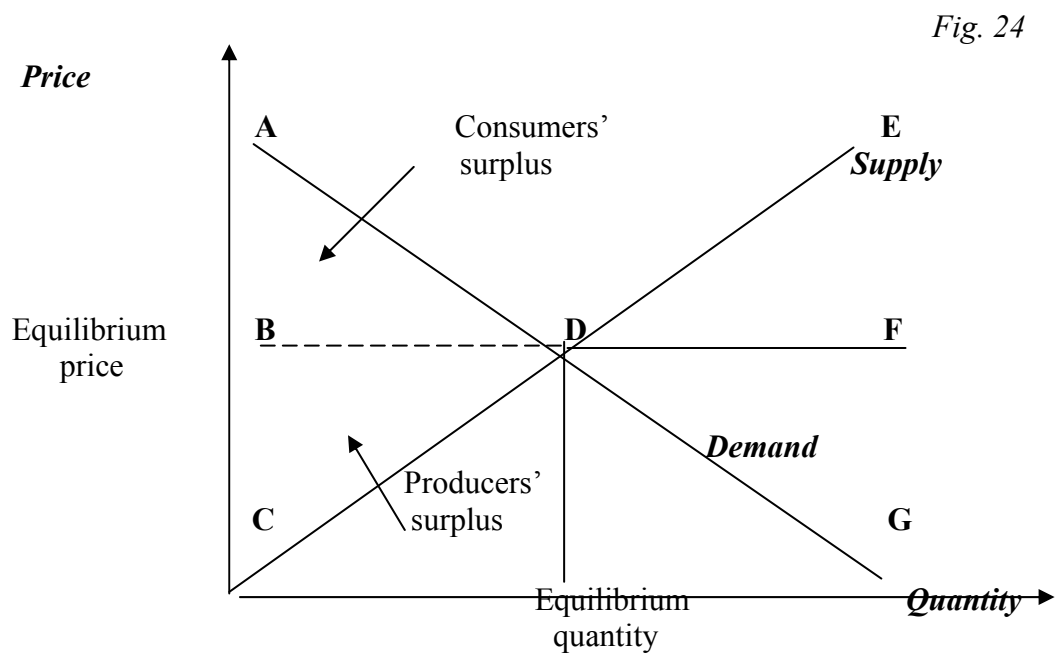
The concept of both consumer's and producer's gain or surplus has long become conventional in economic constructs and has been included in

²⁶ Typical, for instance, of the USSR economy

economics textbooks which insist that free markets produce the quantity of goods maximizing the aggregate consumers' and producers' surplus. The size of producers' or consumers' surplus has never been estimated since it was not necessary nor any idea existed of the measuring procedure. The intuitive awareness of the category's existence took shape in theoretical constructs (see *Fig. 24*).²⁷

In *Fig. 24* consumers' surplus (**ADB**) results from the equilibrium price falling below the demand price in the **AD** interval and producers' surplus (**CDB**) results from the equilibrium price rising above the supply price in the **DC** interval. The left part of the chart, however, does not embrace total demand and total supply.

In the right part the situation is opposite. Demand in the **DG** interval is satisfied at a price higher than that offered by consumers whereas in the **DE** supply interval producers expected to sell at a price higher than the established equilibrium price. Therefore **FDG** represents consumers' shortage and **FDE** represents producers' shortage.



²⁷ The figure is borrowed from Mankiw N.G. Principles of Economics. — St. Petersburg, Piterkom, 1999.

The question is what we get by adding together the left and the right parts? Quite right, nothing.

Looking at the suggested pricing patterns one can easily see that they show producers' surplus, a substance well-known to any sophisticated reader and being the difference between a commodity price and its total cost (the lower price limit). Producers' surplus is almost identical to sales revenue.²⁸

If supply exceeds demand (see *Fig. 8*) the producers' integrated surplus should include both the profit from foregone sales and losses of the producers whose products failed to find a market. The shortage is not limited by lost profits, it may equal the cost of goods manufactured by that part of producers. The situation is very specific and therefore it is hardly possible to correctly present the producers' integrated surplus graphically.

If products are purchased for further use consumers' surplus results from the acquisition of products at a price below the marginal (below the upper price limit).

Consumers' surplus is a complicated category.

In the context of fixed assets acquisition it includes potential savings in depreciation charges, running costs, etc.

The surplus of procured materials results in lower material inputs and reduced current capital needs.

It should be noted that consumers' surplus is latent by nature and cannot be traced by accounting records. The issue of the origin of consumers' surplus is somewhat paradoxical: consumers incur costs and gain a surplus showing that their costs could have been higher.

²⁸ The word "almost" reflects accounting deviations from the real economic substance of profit and production cost existing in any country. This is the reason why economics textbooks use such concepts as "normal profits" and "abnormal profits".

In the ordinary (not extreme) course of events no one would buy a commodity at an unreasonable price. Therefore, under a sales transaction consumers' surplus cannot be negative. It equals zero only if there are no sales. The consumers' surplus for the demand, that was not met by the adequate supply (see *Fig. 7*), could turn into consumers' shortage.

Unlike the authors of the chart presented in *Fig. 24* I dare not suggest a graphic representation of the consumers' integrated surplus.

First, because the estimate of buying advantage (meeting condition (2): $T > C$) is based on information preceding the transaction and the situation may considerably change in the course of the purchased commodity employment.

Second, the losses of potential consumers remaining unsatisfied are generally inestimable, customer-specific and may vary from zero to values times higher than the cost of unsold goods.

The above surplus discussion apparently relates to the market of industrial goods. The size of end-consumers' surplus would be estimated differently.

In case of budget-funded government procurements consumers' surplus would be expressed in savings. Budget savings are a rare and ambiguous phenomenon which can be regarded both as a positive and a negative result. They may result from government officials' efficiency or reflect budgeting flaws.

As the price theory represented in contemporary economists' works studies consumer market (and generally nothing but consumer market) the concept of consumers' surplus in the context of personal purchases is explicit. I would like to remind that consumers' surplus (also called "consumer gain" in economics textbooks) is defined as the difference between the price which the buyer is willing to pay and the actual price of purchased goods. According to the authors the amount of such "consumer

satisfaction” is equal to the difference between consumers’ dreams and reality. If we take the contents of the textbooks for granted then you, consumer, dream of buying dear and the reality disappoints you agreeably and continuously.

In fact we buy goods at prices specified on tags and going shopping take an amount of money justified by actual familiar prices which satisfy us rarer that upset.

It is my belief that the concept of “consumers’ surplus” is totally irrelevant to personal purchases.

Both consumers’ and producers’ gain stems from “energy revenue” received by society from nature. A part of it such as salary, dividends, interest, fees, etc. we receive in exchange for our share in the activities or work deemed necessary by society. Such exchange is intrinsically non-equivalent. A worker has already received a share of energy revenue exceeding his actual energy input. On consumer market the revenue embodies in necessary goods. Therefore, the process of purchasing consumer goods can generate no consumer gain. One ticket cannot win twice.

And if today you bought bread at a different bakery 10 Kopecks cheaper than yesterday it is not clear whether you gained today or lost yesterday.

Production

Efficiency

It is easy to see that to define surplus we discussed static interaction between the seller (producer) and the buyer (consumer).

Dynamically both seek to increase the appropriated surplus. In other words, they seek to improve efficiency and to turn the trick.

It is generally assumed that the term “efficiency” was first used by William Petty and Francois Quesnay²⁹. However, they regarded “efficiency” as effectiveness rather than as a self-contained economics concept.

David Ricardo used the concept of “efficiency” to evaluate the efficiency of capital and initially determined it as the ratio of result to a certain cost item. Further this concept became a generally accepted economic category.

Later the concepts of absolute and relative efficiency were developed. Thanks to the methodology of comparative effectiveness, the economic practice developed an instrument enabling the comparison of quite different organizational and technical suggestions. Economics (and only economics) managed to suggest a method of assessment giving a reasoned answer to the question which of compared alternatives is better. The relevant efficiency concept is based on the method’s unique ability to reduce to common basis current and capital costs totally different in the time of payment.

The term “absolute efficiency” contains a certain contradiction. If absolute efficiency is understood as the result-to-cost ratio then the ratio evaluation requires its comparison with either a benchmark or a peer value.

Therefore, efficiency is always relative.

Genesis of Discounted

Cost Difference Method

Economics purports to be a science studying the use or employment of scarce resources providing for the best (or maximum) possible

²⁹ Francois Quesnay (1694-1774), French economist.

satisfaction of infinite social needs thus confining itself to an abstract discourse which can be neither evaluated nor verified.

According to economics concepts “economic efficiency means deriving maximum possible benefits from available resources. To this end benefits (goods) and costs should be subject to continuous comparison or, in other words, behave rationally, the rational behaviour meaning that the producer and the consumer of goods strive for marginal efficiency through the maximization of benefits and minimization of costs”³⁰.

It would be vain for you to look in economics textbooks for methods of your behaviour assessment based on the “rationality” criterion to implement them in practice. The above definitions bring the problem of effect and efficiency evaluation beyond the scope of rational knowledge. You will see that if you try to give a calculable definition of “benefit” subject to maximization.

Meanwhile cost benefit analysis instrumental in the present-day economic practice is based on a common principle of efficiency calculation by the difference of discounted costs (DCD)³¹.

The international standards applicable to business plans (e.g. those of EBRD, UNIDO, TACIS) are conceptually similar to DCD method.

The present-day methods of investment project appraisal include the calculation of a number of different dimensions such as the social implications of an additional investment unit, the value of an additional consumption unit, an estimated price of investments expressing their social value in discounted consumption units. One can also find there the calculation of shadow wage rates, shadow exchange rates. A project’s net present value is estimated based on a social discount rate.

³⁰ Campbell R. McConnell, Stanley L. Brue. Economics. Moscow: Infra, 1999. P. 24.

³¹ The costs expressed as $C+EI$ are called “discounted” because investments (I) are reduced to a common basis with current costs (C) through the application of efficiency coefficient (EC).

However, particular estimates justifying the feasibility of investments are and will be based on the discounted cost difference method and derived parameters such as “payback period” (PP) and “efficiency coefficient” (EC).

Notwithstanding of wide acceptance of the DCD method the economic interpretation of discounted costs and the results of estimates by their difference are still under discussion.

In Soviet times cost-effectiveness analysis constituted the most sophisticated area of economic research.

Although there are plenty of works devoted to the problem it is still unclear³² to which economic category (E) resulting from the formula given below should be attributed:

$$E = ON_2[(C_1 + EC_1) - (C_2 + EC_2)] \quad (8)$$

where:

$C_{1,2}$ is unit cost before (C_1) and after (C_2) implementation of the facility or investment project under review;

$I_{1,2}$ is unit investments under compared alternatives;

ON_2 is output in natural units after the implementation;

E is efficiency coefficient.

Development of the methods of business solutions assessment including those relating to production upgrading began with the introduction into

³² V.V. Novozhilov defined discounted costs (“differential costs”) as the sum of production costs (C) and “feedback” costs (F_bC). According to V.V. Novozhilov F_bC is a conventional (“ancillary”) value as it is used “to find the common minimum of actual production costs...” See Novozhilov V.V. Changes in Costs and Results under Optimal Planning. — II. Ekonomika, 1967. P. 141. A similar opinion challenging the economic import of discounted costs may be found in works by V.N. Bogachev, A.L. Lurye, etc.

economic practice of the rate of return concept applied to measure the efficiency of capital.

The assessment of business solutions based on rate of return is formally expressed as follows:

$$E = Q_2 - F_2 \frac{Q_1}{F_1} \quad (9)$$

The performance of newly advanced capital (F_2) is evaluated by the ratio of realized return (Q_1) to functioning capital (F_1). The efficiency of investments (E) is determined by the excess of realized return (Q_2) over the assessed value ($F_2 \frac{Q_1}{F_1}$).

It should be noted that the initial approach is universal and enables determination of both most profitable investments and the feasibility of investments in the expansion and development of production.

Whereas for capital movement such capital's initial tangible form could differ from its final form which is typical of commercial capital in case of production expansion the "new" capital comprised earlier investments. This fact gave rise to the concept of additional investments resulting in the necessity to compare additional profits ($Q_2 = Q_2 - Q_1$) with additional investments ($F_2 = F_2 - F_1$) weighted by the realized rate of return. Therefore, original expression (9) takes the following form:

$$E = Q_2 - F_2 \frac{Q_1}{F_1} \quad (10)$$

It is easy to see that, the form having been modified, the assessment method retained its substance. Indeed:

$$E = Q_2 - F_2 \frac{Q_1}{F_1} = (Q_2 - Q_1) - (F_2 - F_1) \frac{Q_1}{F_1} = Q_2 - F_2 \left(\frac{Q_1}{F_1} \right) \quad (11)$$

A milestone of industrial development was the creation of multiproduct manufacture under which rates of return for different products could mismatch. It naturally means that decisions on the breakdown of additional investments should be made on a case-by-case basis. Combined with the regular process of accounting refinement the differentiation resulted in a new modification of the original expression enabling the comparison of additional profits (P) and additional investments (I) on the unit of production level:

$$E = ON_2 \left(P - I \frac{Q_1}{F_1} \right) \quad (12)$$

In this context the concept of specific values originates, namely profit per unit $P = \frac{Q}{ON}$ and unit investments $I = \frac{F}{ON}$.

The output (ON_2) in natural units (pieces, tons, running meters, etc.) derived from expression (12) which could be changed by the implementation of innovations differed from that derived from original expression (9).

The unit indicators permitted to use for economic estimates a basic expression $P_2 = P_1 + (C_1 - C_2)$ linking a unit of production before (P_1) and after (P_2) the implementation of innovations to changes in production costs (C_1, C_2) in which case the original method is described by the following expression:

$$E = ON_2 \left[(C_1 - C_2) - (I_2 - I_1) \frac{Q_1}{F_1} \right] \quad (13)$$

The introduction of the algorithm described by (13) became a major breakthrough in the original method enhancement enabling the economic appraisal extension to microlevel, i.e. a level beyond the bounds of pricing. It also enabled the transition from a general economic appraisal of commodity production to the economic appraisal of a particular part, assembly and eventually the economic appraisal of process improvement considerably expanding the scope of economic estimates.

The method of economic benefit assessment further developed to turn specific rate of return ($\frac{Q_1}{F_1}$) into a benchmark coefficient.

With the introduction of the reference efficiency coefficient the original method eventually lost its initial form and transformed into the discounted cost difference method.

Indeed, if $\frac{Q_1}{F_1} = F_b$ then

$$E = [(C_1 - C_2) - (I_2 - I_1) \frac{Q_1}{F_1}] ON_2 = [(C_1 + F_b C_1) - (C_2 + F_b C_2)] ON_2 \quad (14)$$

The seeming absence of any connection between (8) and (14) resulted in repeated attempts to fill the new form with new substance³³. However, for the DCD method it remained unchanged compared with efficiency evaluation by rate of return. This is evidenced both by the correctness of transformations transforming (8) into (14) and the fact that these formulae yield identical results provided:

³³ For instance, N.P. Fedorenko, D.S. Lvov, N.Ya. Petrakov, S.S. Shatalin are convinced that the category of “discounted costs” “may be considered an “invention” of socialist centrally planned economy”. Moreover, they believe that “it would be senseless to look for a similar category in market economy”. See Fedorenko N.P., Lvov D.S., Petrakov N.Ya., Shatalin S.S. Efficiency of Business Operations// Economic and Mathematical Methods// 1983. — V. XIX, issue 6. — P. 1079.

$$\frac{Q_1}{F_1} = F_b$$

The common approach to the efficiency of investments expressed by (14) and (8) reveals the economic substance of the effect determined by the DCD method.

The effect estimate by the DCD method includes the comparison of the actual increment in profit resulting from the implementation of technical innovations [$P = (C_1 - C_2)$] with an assumed value of $I \frac{Q_1}{F_1} = (I_2 - I_1)E$,

i.e. the increment which could have been obtained if the money actually spent were invested in production expansion based on the former technology assuming that such expansion could not change the profit rate established before the implementation (E). Therefore, the effect estimated by the DCD method is conventional and only enables a qualitative assessment of the rate of return trend ($E > 0$ — growth, $E < 0$ — reduction) in comparison with the established ($E = \frac{Q_1}{F_1}$) or assumed

($E \neq \frac{Q_1}{F_1}$) level.

Discussing the DCD method genesis we noted that the effect assessment formula (12) developed at a certain stage permitted the economic appraisal both for products carrying a market value and parts thereof.

Nothing prevents the statement and solution of the opposite problem — determination of economically sound marginal prices of new products, their effect for consumers estimated by the DCD method. It is only natural that all attempts to find the best price were made in situations when no market pricing existed. The methods applied to estimate the economic impact of production and new facilities implementation were developed by Soviet economics.

$$E_2 = \left[D_1 \frac{ON_2}{ON_1} \times \frac{R_1 + E}{R + E} + \frac{M_1^1 - M_2^1 - (I_2^1 - I_1^1)E}{P_2 + A} + D_2 \right] A_2 \quad (15)$$

where:

E_2 means the economic benefit of the new facility production and employment;

D_1 and D_2 mean discounted cost of a basic and new facility unit;

ON_1 and ON_2 mean annual output for basic (1) and new (2) facilities;

R_1 and R_2 mean depreciation charges intended for renovation of basic and new facilities;

E means efficiency coefficient;

I_1^1 and I_2^1 mean relating consumer investments in basic and new facilities per unit produced by new facilities;

M_1^1 and M_2^1 mean consumer annual operating expenses for basic and new facilities per unit produced by new facilities net of investments in capital equipment renovation;

A_2 means annual output of new facilities.

The discounted cost difference formulae contain efficiency coefficient. In certain cases (estimating efficiency of new equipment and technology) the USSR guidelines regarded it as reference whereas to calculate efficiency of investments in each industry different coefficients were applied.

Indeed, the wide-scale interindustry penetration of technology and the relatively independent, non-consumer-oriented development of science including engineering tend to replace specific rate of return with a benchmark (E_b).

At the same time such coefficient makes no practical sense from an individual businessman's point of view.

Furthermore, a positive result obtained from (8) is not sufficient to consider investments efficient from an individual investor's point of view, the necessary condition being also a full recoupment of investments over the lifetime (t_c) of new production facilities funded by the increment in profit. If benchmark efficiency coefficient and rate of return are equal the two conditions referred to above may be described by the following set of inequalities:

$$\begin{cases} C_1 - C_2 > (I_2 - I_1) E \\ C_1 - C_2 \sum_{t=0}^{t_c-1} (1+E)^t > I_2 - I_1 \end{cases}$$

Given the share of accumulation in national income ($\sim 1/4$) and the rate of surplus value applicable in economy ($\sim 100\%$) to derive E and t_c the above set of inequalities may be transformed as follows:

$$\begin{cases} 0.5 \frac{\tilde{N}_1 - \tilde{N}_2}{I_2 - I_1} \frac{(1+E)^{t_c}}{E} > 1 \\ \frac{(C_1 - C_2)}{(I_2 - I_1)} > E \end{cases}$$

Having solved the set for t_c we obtain:

$$t_c > \frac{\lg 3}{\lg(1+E)}$$

Setting the values of E we obtain:

$E = 0.08$	$t_c > 14$ years
$E = 0.12$	$t_c > 10$ years
$E = 0.15$	$t_c > 8$ years
$E = 0.20$	$t_c > 6$ years

The above estimates show that the benchmark efficiency coefficient is differentiated by the difference in reequipment cycles. This factor is very significant in market economy as it develops a trend preventing the rate of return averaging since an accelerated capital renovation requires a higher rate of return.

An important point is that the accuracy of estimated effect and efficiency is essentially bounded.

Such bounds make it impossible to reliably predict the whole range of used ratios irrespective of the method applied. Whatever the degree of accuracy with which we determine the values of any estimated element they only describe the efficiency of implemented actions in certain forecast situations. The accuracy of forecasts eludes estimate governing the accuracy of efficiency and effect estimates.

The above estimates also show the feasibility (or unfeasibility) of a project in the present situation on the assumption that to a certain extent we can foresee the future changes of business environment.

Estimating efficiency we actually guard ourselves against obvious errors.

Pareto Optimum

The modern theory of efficiency is underlain by the principle developed by Vilfredo Pareto according to which welfare economics may only be based on the marginal rate of substitution in consumption called *Pareto optimum*³⁴ which according to the textbook by J. Sloman referred to earlier may be achieved in perfect competitive environment (under certain conditions)³⁵.

³⁴ Vilfredo Pareto (1848-1923, Italian-Swiss economist and social scientist), the author of the classical modification of the general equilibrium theory developed by Leon Walras (1834-1910, French economist).

³⁵ Sloman J. Economics, 5th ed./Translated from English. Ed. by S.V. Lukin — St. Petersburg: Piter, 2005. P. 327-328.

J. Sloman defines efficiency as follows:

“Production efficiency means a situation when companies achieve the marginal output possible at given costs or the target output is achieved at minimum costs”. He also interprets production efficiency as “the achievement of target output at a minimum cost of production factors”.³⁶

The above and many other similar definitions condition production efficiency solely on output and production costs and traditionally omit the price factor.

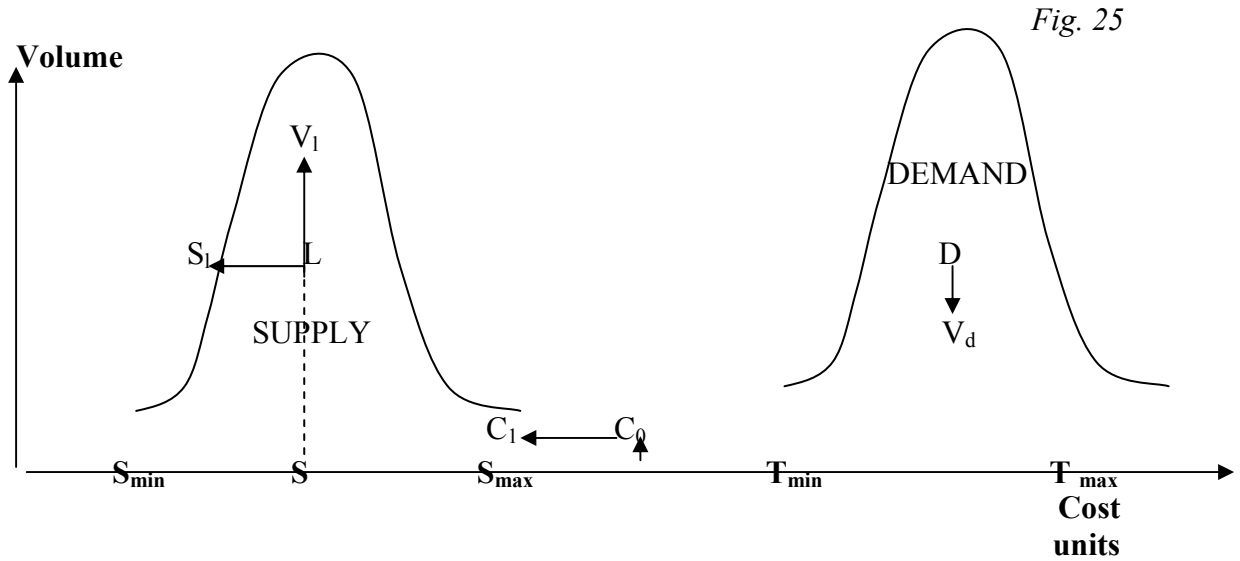
There are two reasons for that.

First, efficiency evaluation may extend to intermediate products (assembly, part) or production processes, i.e. the segments of production beyond the scope of pricing.

Second, the dependence of prices on performance aimed at improving production efficiency is assumed (by default) negligibly weak or uncertain. The rule of “other things being equal” applies under which the prices are assumed equal before and after the implementation whose benefits are estimated although it is obvious that efficiency depends both on spending behaviour and price changes. In actual practice we often encounter situations when a product's price growth not only covers but also exceeds the growth of production cost.

Let us discuss an example of activity aimed at enhancing production efficiency based on the earlier patterns of equilibrium price formation (*Fig. 25*).

³⁶ Ibid., p. 828.



In the above example the volumes of supply and demand are equal and the equilibrium price has been established at C_0 .

Among the set of enterprises building the total supply we choose an enterprise with the output of L and the lower price limit of S .

We also choose an enterprise consuming the above manufacturer's products ($L = D$).

The figure shows that improving efficiency of its operations the manufacturer tries to increase the output to V_1 concurrently reducing the cost of production and hence the lower price limit to S_1 .

The consumer also tends to improve the efficiency of resources purchased from the manufacturer at the price of C_0 . To this end it reduces the consumption of resources which is achieved at the demand level of V_d .

Eventually the manufacturer's and the consumer's joint efforts change the original situation. The aggregate supply increased by $(V_1 - L)$ whereas demand reduced by $(D - V_d)$. Therefore, as supply exceeds demand the equilibrium price fell to C_1 , ($C_1 > C_0$).

It is clear that in our example both the manufacturer and the consumer allocating resources to enhance efficiency based on savings estimated at C_0 will actually obtain a totally different result.

The above discussion may be exemplified by *Table 3*.

Table 3

Initial Data

	Supply	Demand
Total volume, t	1,000,000	1,000,000
Equilibrium price	\$100	\$100
Including	Factory A	Factory B
Output (A), consumption (B), t	100,000	100,000
Cost reduction per t	-\$10	0
Output (A), consumption (B) change	+50,000	-25,000
Investments	\$4.5 mln	\$7.5 mln

The calculation of expected efficiency at A and B factories is given in *Table 4*.

Table 4

Calculation of Expected Efficiency

	Factory A	Factory B
Output (A), consumption (B), t	150,000	75,000
Output (A) or consumption cost reduction (B)	-\$1,500,000 = \$10x150,000 t	-\$2,500,000 = \$100x25,000 t
Payback period, years	3.0 = \$4.5 mln:\$1.5 mln	3.0 = \$7.5 mln:\$2.5mln

The steps taken to enhance production efficiency resulted in the output growth at factory A and the output reduction at factory B changing the demand-supply situation: the aggregate demand reduced to 975,000 t and the aggregate supply increased to 1,050,000 t.

Therefore, the equilibrium price (cutoff price) was established at \$93, i.e. reduced by \$7 relative to the price at the time of calculations (\$100 - \$93).

The actual increment in factory A profit per t of output amounts to \$3 (\$10 - \$7)³⁷.

Table 5

Calculation of Actual Efficiency

	Factory A	Factory B
Output (A), consumption (B), t	150,000	75,000
Profit growth per output unit (A) or consumption (B) cost reduction	\$450,000 = \$3x150,000 t	\$2,850,000 = \$93x25,000 t + \$7x75,000 t
Payback period, years	10.0 = \$4.5 mln:\$0.45 mln	2.6 = \$7.5 mln:\$2.85mln

Through the reduction of material consumption per t factory B saves \$93 rather than \$100 as expected initially³⁸. However, the price reduction will yield additional unplanned savings on material costs of \$7 per t of purchased raw materials.

The actual outcome of the steps taken shown in *Table 5* differs from what was expected.

The above example which is rather typical shows that Pareto optimum rises from the author's and his followers' misapprehension. Production efficiency cannot be enhanced without changing the range and volume of consumed resources. The effect of such changes is multifaceted but always contradicts the interests of those who produce or consume such

³⁷ At constant prices the increment in profit per output unit should be equal to savings (\$10) but the price reduction “nibbled away” \$7.

³⁸ Reducing its consumption by 1 t factory B saves on the actual price of consumed resources which gives only \$93 instead of \$100.

resources. Therefore, “the marginal rate of substitution in consumption” is an economic fable. This also takes the tuck out of “Pareto optimum” considered by J. Sloman a cornerstone of the modern theory of efficiency.

Product Quality

Does the integrated efficiency of public production rise in the country, in international business associations, in the whole world? It seems to be a quite natural question which should be answered by the theory of efficiency. Unfortunately, there is no answer.

Available theoretical constructs revealing the substance of capital movements among industries and businesses in quest of more advantageous opportunities explain the process of public production-wide efficiency averaging. But does it mean that the averaging process results in the exchange of efficiency for inefficiency? And if eventually we receive some gain how does it show up?

The narrowness of traditional academic viewpoints on efficiency stems from the fact that output growth and cost reductions are not the only options for its formation. Economics ignores a very important phenomenon of efficiency translation and redistribution when goods with improved or new consumer properties are developed.

The substance of this phenomenon is that the potential effect created by the producer is transmitted along the “producer – consumer” chain to be implemented by the consumer in the course of use or operation. In that case traditional approaches based on the recording of cost reduction and output growth generally fail to record enhanced efficiency and occasionally record efficiency decline whereas a growth exists, although rather peculiar, as in this case consumption efficiency improves.

Consumption efficiency is a category closely connected with product quality. Enhancement of consumption efficiency results from improved

quality. Funny enough, the economic effect of the improved quality of goods and services is not discussed by economics textbooks. The economic effect of new goods offered on the market cannot be explained within the framework of the “cruciform” supply-demand situation patterns on which the theory of the course rests.

To handle the issue of consumption efficiency assessment we shall further use two new economics concepts: *consumer resource*³⁹ and *cost of possession*⁴⁰.

The consumer resource of a commodity means the estimated result of its consumer properties implementation⁴¹ over operating life (service life, useful life). The consumer resource of natural gas is its caloric power. The consumer resource of a truck is ton-kilometers it can carry over its service life⁴².

Anything intended for practical use has a consumer resource. Some commodities may have several antagonistic⁴³ or cooperating⁴⁴ types of consumer resources subject to the purpose or consumer requirements⁴⁵.

³⁹ In practice the term “consumer resource” is sometimes used to describe the volume of consumer goods supply. Presently, however, we are in another bag.

⁴⁰ It should be noted that although economics does not define the term “cost of possession” it is used by vendors of such high-tech products as motor cars, personal computers, operating systems and electronics.

⁴¹ Subject, of course, to the chosen unit of goods: piece, ton, running meter, etc.

⁴² The unit of ton-kilometer provides for rather a simple method of consumer resource evaluation. Consumer resource of a sophisticated tool is expressed in the possibility of its use for making parts of particular complexity, configuration and size subject to applicable requirements to surface accuracy and finish over a certain period of operation. Such combination of consumer properties cannot be formalized.

⁴³ Natural gas has different consumer resources when used as fuel and raw material for mineral fertilizers. However, gas used for some purpose cannot be used for another purpose.

⁴⁴ Crude oil has different consumer resources if we use it to produce tar or jet fuel. In this case we may produce both and many other products.

⁴⁵ It should be noted that consumer properties of a commodity include the terms of its delivery and its location at the time of purchase — with the buyer, at the seller’s warehouse, etc.

The main property turns into a consumer resource through multiplying by estimated service life (useful life) and eventually the consumer resource always has a definite value. In extreme cases it may be either the product of the amount of consumer property by one for non-durable goods or by service life for long-life equipment. Any multidimensionality including multiple consumer properties of goods requires ranking. Among consumer properties of a commodity the buyer selects the main one being either the only property or a combination of two or more properties. The properties not included in the fundamental set are supplementary.

The buyer's individual and specific evaluation is based on his requirements and future conditions of the commodity (goods) operation (use).

If you take 40 in shoes neither 39 nor 41 would have a consumer resource for you. This also holds true for trucks. If you have to carry 5 t you wouldn't pay attention to trucks of lower capacity. For instance, a German consumer selecting a truck by capacity and mileage ignores trucks non-complying with the EC environmental or ergonomic requirements. This is a fundamental difference between a German and an Afghan consumer.

Therefore in actual practice additional properties are the criteria which a given commodity should meet to enable evaluation by the buyer of its consumer resource.

A potential consumer resource implies certain expected conditions in which a commodity will be used (location, weather conditions, shift operation, etc.) and for this reason an actual resource may be both insufficient and redundant.

The consumer resource of a commodity intended for personal (or household) use is essentially determined similarly to the consumer resource of industrial commodities. However, in that case a new form of consumer properties comes into being — unformalized consumer

properties. Since in addition to meeting their owners' requirements commodities of a given group should also confirm the social status and underline (or moderate) individual peculiarities of the owner the consumer resource of a monster vehicle may be deemed the time of enjoyment of neighbours' envious looks⁴⁶.

The consumer resource at the moment of choosing a commodity and executing a sale and purchase transaction is determined through prediction or expert appraisal. As the determination of consumer resources requires risk hedging such instruments as guarantees were developed resulting in the formation of consumer unions and consumers protecting organizations.

The cost of possession is a complex economic category which means the aggregate cost of using a commodity (product, service) over its service life, the period of consumption or operation.

In the simplest form the cost of equipment possession is the aggregate cost of acquisition, operation and maintenance. In a more extensive form it means the sum of initial (capital) costs⁴⁷ and operating expenses over the entire service life⁴⁸ as well as salvage costs less disposal value.

The cost of equipment possession includes the cost of inspection and various types of repair, direct and indirect losses caused by equipment failures. It is easy to see that these costs reflect the estimated value of such consumer properties as maintainability, reliability and endurance.

⁴⁶ The consumer resource (particularly that of consumer goods) is an issue for a separate in-depth research.

⁴⁷ That is the cost of equipment acquisition, delivery, installation, assembly, adjustment, development of relating infrastructure and other operations including obtaining operation permits.

⁴⁸ Operating expenses include the cost of operation, payroll, maintenance, power and auxiliary materials.

These parameters included in quality performances affect the aggregate cost of possession.

The cost of possession of inventory materials means the cost of their acquisition, delivery, storage, processing including equipment depreciation, payroll and waste disposal.⁴⁹

In the general case the cost of commodity possession includes any expenses relating to the enjoyment of the built-in consumer resource. If such resource has not been depleted or is insufficient relating losses are also included in the total cost of possession.

Similar to the consumer resource the cost of possession at the moment of acquisition is a predicted or estimated value.

In the economics context the quality of a product is the inverse of the cost of possession of the product's consumer resource unit.

The higher the cost of possession of a product's consumer resource unit the lower the product's quality.⁵⁰ This is one of the reasons why a product's quality is a function of its operation conditions.

A product's quality is clearly a comparative parameter, the comparison being made among different product (goods) items featuring the uniform quality of consumer resource as well as by the application or operation conditions.

Therefore, the lower the unit cost of possession of the product's consumer resource the higher the product's quality⁵¹.

⁴⁹ If the utilization of a material requires compliance with fire safety or explosion safety rules, environmental and health standards, etc. the cost of compliance forms integral part of the total cost of possession.

⁵⁰ It should be emphasized that for private goods the concept of consumer resource considerably differs from that for industrial goods giving rise to the difference in quality rating. The cost of possession of a unique consumer property by a certain category of buyers is determined by their financial standing.

⁵¹ The unit cost of production equipment possession is not only similar to but also coincides with the cost of manufactured products.

An example of the consumer resource and the cost of possession calculation for a motor car is given below.

Table 6

Initial Data

<i>Data item</i>	<i>Value</i>
Price	\$15,550
Additional expenses: alarm system, car stereo, flaps, crankcase protection	\$650
Expected life	4 years
Disposal value	\$11,000
Total insurance	\$3,500
Inspection	\$1,700
Annual mileage	20,000 km/year
Gasoline consumption per 100 km	10 l
Gasoline price	17 Rubles/l
Car washing	\$1,500
Parking charge	\$1,000
Dollar-to-Ruble rate	29

Calculation:

The cost of gasoline over service life:

$$80,000 \text{ km}/100\text{km} \times 10 \text{ l} \times 17 \text{ Rubles/l} : 29 \text{ (Ruble/\$)} = \$4,700$$

The **cost of possession** = price + additional expenses + gasoline + insurance + inspection + washing + parking – disposal value:

$$\begin{aligned} & \$15,550 + \$650 + \$3,500 + \$4,700 + \$1,500 + \$1,000 - \$11,000 = \\ & \$17,600 \end{aligned}$$

There are two alternatives of the **consumer resource**:

- total mileage over service life = 20,000km/year x 4 years = 80,000 km
- service life (machine-year) – 4 machine-years = 1 car x 4 years

Quality performance (QP):

Alternative 1 of the consumer resource appraisal:

$\$17,600 : 80,000 = \$0.22/\text{km}$. $QP_1 = 4.5$ km per \$1 of the cost of possession.

Alternative 2:

$\$17,600 : 4 = \$4,400/\text{year}$. $QP_2 = 2.7$ months of operation per \$1,000 of the cost of possession.

The above example gives a general idea of the formal description and estimation of such a “compound” economics concept as product quality.

Consumption

Efficiency

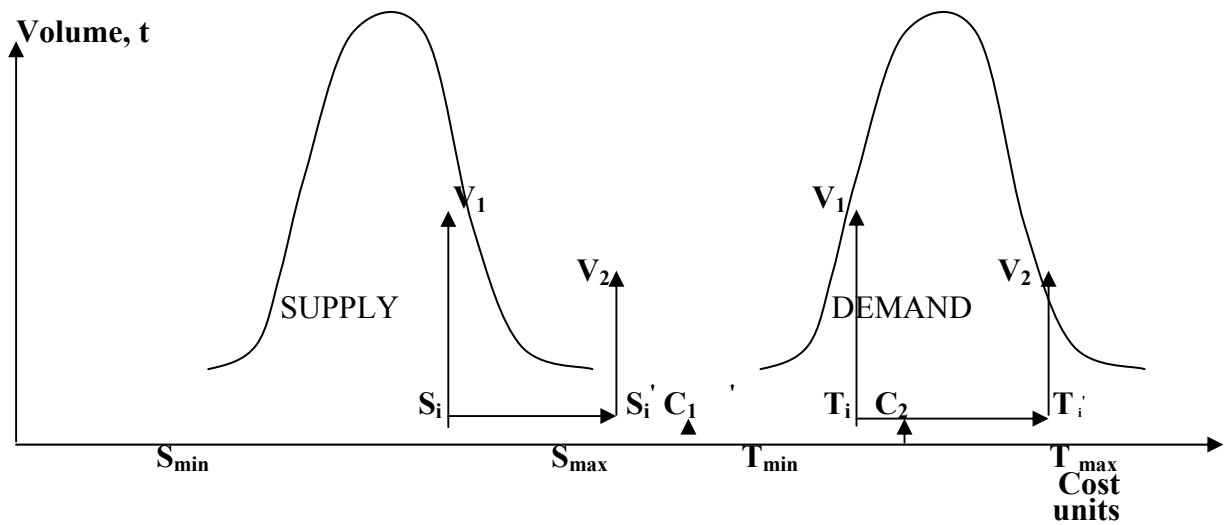
Let us now discuss the interaction between the seller and the buyer when switching to a new higher quality product such as cleaned coal.

Before producer X has switched to coal cleaning the distribution of demand for and supply of raw coal had the shape shown in *Fig. 26*. The relative equilibrium of supply and demand provided for the equilibrium price of C_1 whereas producer X had the upper price level of S_i and the output of V_1 .

The process of coal cleaning, i.e. associated rock separation results in increased production costs and hence a higher upper price level of S'_i and the output of the new higher quality product in tons reduces to V_2 .

$$\text{Here: } (V_2 < V_1). \quad (16).$$

Fig. 26



The switching to clean coal provides for higher temperature of coal combustion reducing coal consumption. In response the cost of transportation and storage and ash formation reduce enabling the operation of state-of-the-art furnaces with higher wear tolerance, the reduction of pollutant emission, etc. The factors described above raised the consumer's lower price limit from T_i to T'_i , which means that the consumer can buy a more expensive product, the equilibrium price setting at C_2 . In such case:

$$S_i < S'_i, \quad (17)$$

$$T_i < T'_i, \quad (18)$$

$$C_1 < C_2. \quad (19)$$

According to the traditional idea of the processes enhancing efficiency all conditions (16, 17) of our example suggest a decline in efficiency: the volume reduced and the cost increased. However, the fulfillment of

condition (19), i.e. the increased price of the new higher quality product results in enhanced production efficiency provided, however, fulfillment of condition (20), namely:

$$C_2/C_1 > S_i'/S_i \quad (20)$$

which means that the price growth should outpace the cost growth.

The question, however, remains open of evaluating benefits arising from the producer switching to the new higher quality product subject to incurred capital expenditures.

It is notable that in this example capital expenditures are incurred by the producer whereas the consumer enjoys the results (reducing its costs) and is spared additional investments. Therefore, the producer's motivation is all the more important as at the initial stage of conversion the producer suffers losses although temporary. The producer's behaviour may be interpreted as a response to the downward efficiency trend which most of producers get the scent of.

The problem has long preoccupied researchers. Suffice it to remember the “theory of diminishing soil fertility” at one time extensively discussed in mass media.

The technical and technological process improvement giving rise to efficiency is in a broad sense a permanent fight against declining efficiency which, having been lost, results in ruin and, having been won, in prosperity although always temporary. What we usually call competition is in fact a part of the human battle of life. On the surface it seems that a man fights against a man. In fact human beings fight against nature by intensifying its exploitation, extracting an ever-increasing volume of energy in the environment becoming more and more severe. So far people have managed to surmount but not to terminate the second

law of thermodynamics. The energy earlier extracted and embodied in capital cannot keep its form forever nor can the growth of entropy be avoided. The new energy extracted by people is used both to increase and to compensate for retired wealth.

Similar to racing the survival championship makes businessmen run a distance which has no finish. They are running not tracks but rather conveyors traveling in the opposite direction with different speeds. Naturally this pursuit of an uncertain price is lost by those lagging behind. But their exit affords the leaders no opportunity to halt or to take a breath.

The launching of a new higher quality product changes the rules of the struggle for survival.

In the example discussed above the usage of a higher quality product results in the consumer's cost saving which the consumer partially shares with the producer purchasing the high quality product at a higher price.

But this example only illustrates the simplest case when the effect of higher quality is achieved in the second link of the "producer-consumer" chain. In real life the effect's translation along the chain may take a long time. Moreover, in certain cases the effect is achieved provided a combination of several new factors: materials, equipment, fuel, etc. Such combination may result in a new technology enabling the consumer's cost saving or a new product comprising a fundamentally new quality, an example being new missiles or household appliances.

The switching to new materials and equipment involves a complex process of balancing interests.

New materials and new equipment provide for the consumer's transition to the improvement of existing or the development of innovative technologies enhancing its production efficiency. The effect of the new quality of materials and equipment is achieved by the consumer along

three lines of process improvement: providing expansion, supplementation and replacement effect, correspondingly.

The expansion of production capabilities may be illustrated by surface hardening and tarnishing techniques.

We have already touched upon the issue of sharing the effect produced by quality improvement or creation of new quality. The producer is not the only link of the chain with which the consumer shares such effect. As the equilibrium price for the new commodity (higher quality product) is able to compensate the consumer the upper price limit on terms differing from the existed while the replaced commodity (product) purchase. The buyer may include in the upper price limit of a new product additional expenses not always connected with technical changes.

The suggested approach to the effect reveals the causes of businessmen's "irrational" behaviour when they push on with launching higher quality products.

So, we presume the existence of two different types of the economic system development recorded by available tools in the form of economic effect.

The first type is a derivative of the output growth and cost reduction per unit of product (goods, service) produced.

The second type is found when a new product is manufactured manifesting itself in a higher ratio of the consumer resource to the cost of possession.

A characteristic feature of the former is that it has its limitations — indeed, one cannot infinitely reduce costs.

The latter's distinctive feature is that the consumer of a new product experiences the former effect whereas in case of its extra-market achievement (government and household procurements) it cannot be recorded by statistical methods. The new quality of military or household

equipment does not affect the growth of gross product and productivity. This should be emphasized as a very important feature of the latter effect linked to the pervasive changes going on in business environment.

The intensity of such processes and phenomena may be exemplified by a problem deemed perpetual by many. I mean the matter of economists' continuous concern — the balance between increase in labour productivity and wages.

During the recent years it has suddenly become clear that the common-sense law of productivity growth outpacing wage increase fails almost universally.

Bearing the problem in mind let us try to answer a very interesting question why the declining productivity trend emerged. For instance, in 1973-1994 the rate of productivity growth in the USA was 2.5 times lower than during the preceding 15 years.

The obvious slowing down on the background of apparent technological advance acceleration cannot be explained by traditional concepts. That is why new plausible hypotheses are required.

It is general knowledge that the productivity growth eventually reduces the share of labour cost in total production costs. It should be noted that such static dynamics may only be observed for commodities produced for a long period of time (coal, sugar, etc.). Since the time when coal was taken by pick axe and shovel the share of wages in product cost has dramatically reduced although it became many times higher per worker. Quite apparently this process has its limitations. It might be compared with a record hundred-meter dash: one can run faster and faster but the distance cannot be covered instantly.

Discussing the issue of declining productivity we encroach upon the domain of basic economics concepts which turn out to be far from everlasting.

Many economics concepts deemed classical were formulated at the stage of human history when the range of manufactured goods was relatively unvarying, i.e. during the period of predominant changes in the production of a slightly changing range of equipment and household appliances.

The present day technological advance takes a different direction expanding the range of available goods and services. Moreover, today it features an accelerated renewal of the range of products. New products, particularly new technologies, have the greatest impact on consumption rather than on production. At the same time the conversion results in the labour productivity decline especially noticeable when physical indicators (pieces, meters, etc.) are used. The reason is obvious: new products are more labour-intensive compared with those being replaced. At the consumption end new equipment and technology require a much better operation which brings about the changes in labour input without abrupt changes in its total volume. It is also very important that the effect of new products (services) consumption has no impact on the analysis of changes in the productivity of collective labour of society. To make the picture complete it should also be noted that during the last decades the non-productive sphere has been developing with increased speed compared with material production.

Therefore it may be said that in the past decades (I do not insist on this time frame) advanced economies achieved a new level where the effect of technological advance changed its predominant form affecting not only the growth of productivity but also the quality of labour both in material production and non-production including household.

Possibly we should call it a new approach to the implementation of scientific and technical achievements, a shift from the initial and intermediate stages to the final stage accommodating all types of tax-

funded human activities and households of community members. Presumably a major structural change has occurred. The surplus created by economic operations is mainly allocated for the consumption and non-production.

Today it becomes clear that the problem of productivity to wage growth ratio has no simple solution. The growth of wages cannot always lag behind the growth of productivity measured in any conventional economic units. The trend of advanced productivity growth cannot last for ever as in that case the share of wages in costs would become nominal. The attention given to the issue by Soviet economists was explained by its keynote — value is created by labour. A new idea of value is suggested — value is created by the combination of labour and energy extracted by society from Nature. The share of wages in costs is affected *inter alia* by the outcome of the battle for the benefits of those engaged in material production fought when the surplus derived from the exploitation of natural resources is distributed.

The detailed discussion of the turn in the production growth rate recorded lately is intended to demonstrate both the dying-away of existing economic trends and the narrowness of social progress evaluation by indicators describing the development of material production.

Analysis of material wealth growth in absolute and relative terms is presently very important for the reproduction process assessment but they gradually fail as social development indicators.

GOAL SETTING IN ECONOMIC SYSTEMS

Economic and Non-economic Goal Setting

It is common knowledge that the business environment created in the USSR was a direct opposite of the business environment in free market economies. The two rival political systems seemed to be based on directly contrary economic principles: capitalist unemployment versus permanent socialist shortage of manpower, searching for markets and bidding for orders versus unsatisfied supply and continuous resource shortage whereas inflation — an inherent attribute of market economy — was virtually unbeknown to the country of stable, artificially maintained prices...

The signs confirming the existence of two distinctive economic antipodes were numerous and could be found high and low visualizing the strikingly opposite foundations of the two social and political antagonists.

This difference is explained one way or another in numerous publications, their review showing that the explanation is not so self-evident. The main secret is that the antagonistic capitalist and socialist systems employed totally different — economic and non-economic — modes of goal setting.

An approved mode of goal setting has the deepest material effect on the implementation of any management system. The mode of goal setting is both material and determinative for the organization of production.

It is well known that particular goals set by economic agents do not match. Moreover they mostly interfere with each other and therefore gains for some generally mean losses for others. Additionally, in real life we face the plurality of goals which may be different in quality (social, environmental,

economic), complementary (increase in profitability and yield) or alternative (cost reduction and improvement in the conditions of work).

However, any previous discussions of economy goals related only to specific aspirations of individual economic agents. The present work is the first to touch upon the effect of goal setting on the functioning of economic megasystems and to show that the prevailing mode of goal setting has a dominant influence both on the content of national economic policy and the microlevel of economic behaviour.

Contemporary economics only contemplates the phenomenon of non-economic goal setting in the context of economic systems from the angle of natural economy disregarding a broader interpretation (beyond closed lacunae out of contact with the products and services market¹) of the goal setting system including elements not intended for deriving revenue or profit. This is true for the study of both individual economic agents and economic systems of individual states.

Such approach apparently results from stereotypical thinking: for some reason both economics theorists and practitioners believe that the main objective of any economic activity is to obtain an economic result — revenue or profit. This is seemingly self-evident: what objective other than economic can an economic system pursue? In other words: if an objective is non-economic what has it got to do with economy?

Both opinions are erroneous.

Goal and Motive

Economic agents forming the products and services market pursue different goals having one thing in common: all market participants implementing their individual goals are profit seeking. It makes no difference

what methods they apply and it is totally of no significance when — in the short or long run — they expect to make profit. Such type of economic activity may be business-oriented, its determinant attribute being *economic* goal setting.

Economic goal setting, however, is not the only form of business organization. Upon a closer scrutiny we can detect around us an immense stratum of economic², i.e. expedient, socially useful non-profit activity.

Public administration, free education and health care, basic research, defence are typical examples of large-scale activities equipped with fixed assets, consuming material and human resources but not intended to derive profit.

A primary objective of the military is to defend, of teachers — to teach, of the medical profession — to cure. The various objectives of these and other similar activities have one thing in common: they are non-economic.³

A predominant feature of non-economic goal setting is the organization of activities aimed at accomplishing a particular task or assignment not directly connected with profit making.

It should be noted that the choice of a goal setting mode is totally independent of work techniques.

Cooking meals in a cafe is intended to make it profitable whereas cooking of the same food according to the same recipe at home is an example of non-economic activity.

Let us consider another example.

¹ Lacuna — a gap (empty zone) in a filled space.

² In this case economic activity means a form of human labour employing fixed assets (buildings, structures, equipment, etc.), material resources and resulting in a socially useful tangible or intangible product.

³ In addition to economic activities organized to attain non-economic objectives other — unorganized — types of activity exist producing results which are not guaranteed public recognition. Such “venture” activities include writing, arts, etc. Sometimes painters, musicians and writers fail to articulate their objectives. True that many of them blankly deny the presence of an economic component in their objectives.

A bridge construction by a business entity and an engineer unit, although identical in technology, differs in goals. The military construct and remove a bridge for exercise — they have accomplished their end and derived no revenue although the construction involved certain costs. The business entity would not be satisfied with the mere fact of completed construction as its needs profit.

Therefore further we shall discuss two modes of goal setting incidental to creative, socially useful and recognized types of activity: economic and non-economic.

An explanation of the fact that non-economic goal setting is largely ignored by economics can be that the application of a universal economic tool — cost estimate — leaves no lacunae embracing virtually the whole range of social processes. Any economic activity, wherever performed, suggests the employment of certain estimable resources. At the same time all able-bodied human beings are involved in different forms of financial and monetary interaction, bound up in an essentially economic environment creating an illusion of the generality of financial and economic content for all types and forms of social activity. But the fact that we use financial tools and generally enter into financial and economic relations does not mean that economic goal setting is the only possible form thereof.

In real life two possible modes of goal setting (economic — non-economic) overlay the dualism inherent in human motivation. The material aspect of life necessitates an income component in the activity of any altruist although those who are basically guided by an itch for gain cannot ignore the immaterial aspect of their motivation.

Obviously the material motive is incidental to activities involving the economic mode of goal setting whereas altruists prefer organizations within which deriving of income and profit is not a dominating motive.

In some instances an employee's motivation and the mode of goal setting incidental to the activity he is engaged in contradict each other.

Clearly a purely materialistic motivation does not make an individual employed by a private business entity feel uncomfortable. He works for money and is anxious to have his wage raised which is his primary motive. Other motives such as liking for work, working conditions, psychological climate are also important although secondary. In this case the employee's material motivation is totally consistent with the mode of goal setting incidental to his employer's activity.

The activity of a scholar engaged in the decipherment of an ancient manuscript does not suggest any commercial outcome. However, like all of us, he is remunerated for his work. In this case (and in many other similar cases) the motive contradicts the goal. A true scholar (actor, artist, military man, teacher, doctor, etc.) would eagerly emphasize his nonmaterial motivation and non-economic goal setting in the activities he pursues. However, whatever the motivation, every individual buying bread and butter for money comes into contact with the world driven by profit making. The manuscripts examined by our scholar may have a market price and the publisher of the resulting book will sell it at a profit. It should be noted, however, that this would not change the scholar's non-economic goal setting. But real life is not so soft and pleasing giving the examples of numerous "cataclysms" when material motives smash the actors' attitudes induced by the mode of goal setting incidental to their activities.

Motivation is actualized through the content of a particular activity. A motive concomitant with material circumstances enabling its actualization forms the types of activity differing in the mode of goal setting. It should be noted, however, that for certain types of activity the modes of goal setting overlap. Medicine, education, culture, sports, etc. balance between profit and altruism.

A motive actualization within the framework of economic goal setting comes down to an itch for money and what is even more important — for deriving profit.

Revenue is a necessary although insufficient condition of the economic goal setting actualization. The fact of deriving revenue from any activity means that such activity is socially recognized: something is produced and purchased by somebody, the amount of revenue showing the scale of activity.

Profit or, more specifically, its availability is a qualitative indicator. Profit reflecting the excess of outcome over costs is a combined characteristic of activity, its availability confirming the attainment of an economic goal.

At the same under non-economic goal setting time profit is not a yardstick of successful activity. The concept of “profit” is irrelevant to any type of activity with such mode of goal setting.

In this case a principal difference is that any commercial profit-oriented activity is self-reproducing whereas activity with non-economic goals requires continuous financial support. Therefore the excess of the amount of financing over actual expenses results in saving rather than profit. The concept of “loss” is also irrelevant to an activity with non-economic goal setting although its actualization may result in “cost overrun”.

The difference between profit and saving is that profit is an indicator of the economic goal attainment whereas saving is a possible although not necessary by-product of activities guided by non-economic goal setting. If a businessman suffered losses he failed to attain his goal, to actualize his motive. Similarly saving of available munitions affords no excuse for the commander of the army that lost the day.

Additionally it should be noted that a most important although still unsettled issue of any activity regardless of the mode of goal setting is the finding of a balance between material and altruistic motivation of employees. A

board of honour and cash bonus are applicable to both a business entity and a free health facility.

Transformation of Goal Setting

The Soviet Union accumulated a vast experience in the implementation of the global non-economic goal setting. This means that the country's economy pattern was determined by non-economic goals. The “**non-economy**” created and operated in this country for several decades was an exact antipode of market economy.

However, national economies not overburdened with an urge to wealth may also be found in the earlier days of human history.

The palm of an economy dominated by the non-economic mode of goal setting should be given to Sparta. The reforms implemented by King Lycurgus were aimed at eliminating material inequality. According to a Greek historian, “to refine away insolence, jealousy, malice, luxury and still older and menacing state vices — wealth and poverty — Lycurgus reasoned the Spartans into consolidating their land and sharing it equally...”. Contempt for any business was intensively cultivated in Sparta under the aegis of Lycurgus since, as Xenophon stated, “Lycurgus forbade all freemen in Sparta to engage in anything having to do with profit...”.⁴

But there was no discontinuity of time between Sparta and the USSR. The states dominated by the non-economic mode of goal setting occasionally came into existence, they also exist today and will predictably come into existence on the Earth.

⁴ Quoted by L.G. Pechatnova. History of Sparta. Humanitarian Academy, 2001. St. Petersburg.

Objectively no socioeconomic system pursues development as the only goal. There are social objectives pushing aside economic solutions of which the undoubtedly top-priority task is to maintain the society.⁵

The pursuit of non-economic goals initiated by a state and implemented in its economic system is a natural response to an emergency situation threatening the country with global cataclysms or dissolution. It happens during the periods of war or natural disasters endangering the very existence of the state and society. Any country facing such circumstances defends itself by realigning, passing into a state described by non-economic goal setting virtually throughout the entire economic system. “Everything for the sake of the front, everything for the sake of victory!” is the only possible economic priority in such circumstances. During such period the transition to non-economic goal setting is inevitable, whatever political and ideological attitudes underlie the political system.

Was it vital for anybody in 1940 in England how much a fighter or a shell cost? No, one and all were eager to know **how many** fighters and munitions can be supplied to the army of the country struggling for survival.

Under such circumstances economic criteria of economic activity are replaced by other impelling needs of the army and navy. This sometimes results in the disappearance of independent economic agents subjected to public control. The boundaries between properties dissipate nationwide. Property is no more sacred and is very violable, the proprietors becoming managers contracted by the government similar to workers or foremen at their enterprises.

Any emergency, however, eventually comes to an end and the country’s economy although not without losses gradually returns to its former state and economic goal setting abolishing centrally planned supply and guaranteed sale

⁵ This fact is underlined by American scientists. See: Future Economy of the USA. (Issues and Prospects). Moscow: Progress, 1982. P. 36.

and eliminating government agencies managing the country's economy under extreme conditions.

The USSR experience is interesting and to a certain degree similar to that of Sparta. It shows that a country can sustain a continuous and lengthy state of permanent struggle. The objectives of such struggle may be different. In Sparta it was the pursuit of a perfect society. The founding fathers of the USSR "raised" the country to further the cause of the world revolution.

For many reasons the USSR experience is more important for us and therefore we shall discuss it more in detail.

Let me recall that at the time of seizing power Bolshevik leaders had no intelligible economic doctrine. Having substantiated the inevitable collapse of capitalism Karl Marx suggested no guidelines for a model of the succeeding socioeconomic formation. Therefore from October 1917 the government of workers and peasants in Soviet Russia set to improvising "socialist economy".

Adventurers are known to think that the government of a country is all beer and skittles. It was not for nothing that Lenin invoked Napoleon time and again: "As far as I remember Napoleon wrote: "On s'engage et puis... on voit", a loose translation of which into Russian being "Let's first pick up a hard fight... and then we'll see".⁶

In this quotation the word "**fight**" is the most essential for understanding the system of government created by Communists in Russia.

It is on record that Russian economy inherited by Bolsheviks was broken into flinders by the world and civil wars. The introduction of "war communism", a deeply non-economic system of government, was as natural as the transition to the "New Economic Policy" (NEP). After the civil war had been over and the threat of the Soviet state's collapse had abated a natural

⁶ V.I. Lenin. On our revolution (concerning commentaries by N. Sukhanov), collected complete works, 5th ed., v. 45. p. 378.

transformation began of the country's economic system involving the transition from non-economic to economic goal setting.

A short period of the NEP demonstrated to Bolsheviks the inconsistency of their political ends — the world revolution, external expansion — with the economic goal setting taken as the basic principle of the economic system formation. The country's transformation into a military camp was prevented by economic and legal independence of some economic agents. Therefore the NEP was naturally smudged out of existence — taking advantage of the improving economic situation Bolsheviks made another effort to implement the principle of politics domination over economy.

The NEP could not be regarded as a possible or acceptable alternative of the resulting economic system. The NEP represented a form of economy organization unable, as the government believed, to support the attainment of the political end for the sake of which the country suffered such hardships, i.e. the global victory of communism.

A nation-wide non-economic goal setting represents a natural response to the prevailing emergency. If the situation changes the state of emergency should be maintained or at least simulated to retain the economic system based on such mode of goal setting.⁷ Therefore naturally rather than accidentally the country, even in peace-time, was proclaimed either a military or a labour camp, the enemies from within and without to be opposed were smoked out, everyone who worked “fought for” the fulfillment of plans, for the harvest, against the “survivals of times past”...

The economic system based on non-economic goal setting created in the USSR approved itself during the periods of real emergency. No other pattern of economic management would be able to hold out against the totalitarian destructive blow to which the USSR was exposed in 1941-42. Our country not

⁷ To simulate does not mean to play game. The reality of the red-hot emergency is confirmed by the scale of GULAG and millions of ruined lives.

only withstood the blow but came out victorious as its economic system had been prepared for and adopted to functioning in an emergency. Although industrial enterprises had to be relocated to the east the economic system required no adjustment as it was ready for a totalitarian “war to the death”.

Politics and Economy

The founding fathers of the future “socialist economy” understood the natural imperfection of their baby as early as at the time of its birth.

At that time N. Bukharin, an ideologist of the new system, wrote: “What we want is not a **growth of productive forces** per se but rather a growth of productive forces **enabling the victory of socialist elements**” (*accentuated by me — S.T.*). And further: “Just fancy that we have stores offering almost exclusively the “Proletarians of all countries, unite!” signs and not a piece of goods, inactive factories decorated by the “Proletarians of all countries, unite!” red banners, banks, i.e. bank premises with the “Proletarians of all countries, unite!” signs and assets not worth a red cent, a huge amount of Soviet paper currency flooding the market and also bearing the “Proletarians of all countries, unite!” slogan but of no worth... In that case we would face a high risk of losing our economy and even our heads”.⁸

During the ensuing years to the final collapse the economic system created in the earliest days of Soviet government was ploughing around for a passage through a blind alley trying to make economy overridden by politics fill store shelves with “pieces of goods”.

Of course, the filling of store shelves with consumer goods was not a primary objective to be attained by the USSR economic managers. The ultimate purpose of the economic system of the Soviet Union built by the trial-and-error method was the expansion called the world revolution. Setting aside the

qualitative assessment of the created economic system I must emphasize that it was efficient only in emergency situations. It was never combined with any elements borrowed from the other mode of economic goal setting. The system rejected any “self-support” novelties introduced under the guise of various “economic reforms”.

This exposes the primary cause of the USSR collapse — an attempt to put an end to the external (peaceful coexistence with capitalism, peaceful economic competition) and internal (scouring after “wreckers”, recognizing material incentives) emergency while maintaining the prevailing non-economic mode of goal setting. The Soviet Union was doomed to economic degradation at the moment when the idea of the invasive world revolution was rejected. The emergency-oriented economic system could not and did not work in the absence of the idea.

A reference to modern China would be appropriate.

Among the many reasons explaining the country’s dynamic development during the last decades the main one is that the economic policy formulated by Den Siao Pin proved to be efficient as its implementation was not “sidelined” by ideological doctrines. What has been going on in China in recent years is basically similar to the NEP in Soviet Russia, the vital difference being that the communist leaders of China forsook the subordination of the economic system development to the attainment of non-economic objectives making modern China an antipode of North Korea, Cuba and, sure enough, the USSR during the period from Lenin to Gorbachev.

⁸ N.I. Bukharin. Selected Works.// Moscow: Politizdat, 1988. P. 345.

Goal Setting and Property

Economic textbooks contain no sections devoted to the issue of property. Nor is the concept of “property” included in glossaries thereof. Western economists farm the issue out to lawyers.

At the same time the issue has many purely economic aspects of great importance for our further discussion. The intrinsically different economic and non-economic modes of goal setting may exist under totally different property relations.

Property relations are based on the well known legal triad of disposition, possession and enjoyment which, however, does not exhaust the attributes of such relations.

It should be noted that along with the concept of “property” another close and to a certain extent duplicating concept exists — the concept of “assets”.

The difference between property and assets is similar to that between commodities and products. A product may only become a commodity through trade in which case its earlier attributes are supplemented by value. The transformation of assets into property is similar, the similarity explaining the existence of two terms describing different aspects of the same aggregate of material wealth — assets and property, the latter being a certain transient condition of assets arising at the moment of their coming into contact with other property. Additionally property relations manifest themselves in the “defence reaction” of property to a possible change in ownership.

Let us discuss the genesis of property relations.

One may suggest that initially property originated from accumulation. Accumulation is very similar to saving. The first atoms of assets came into being through the accumulation of food supplies. Assets are an antipode of personal consumption and result from underconsumption.

Under the hypothesis I suggest assets forerunning property remained unchanged until they were involved in trade or barter, the gap having been closed with the passage of time. As soon as reserves had been accumulated people appeared willing to seize them. Protecting his assets a man realized he was a proprietor giving rise to the sense of justice and the understanding of the essence of exchange and the fairness of its terms (i.e. mutual benefit of both parties).

The attempts at forcible seizure had been recorded before exchange relations became possible. The concept of “property” is not only older than the concept of “value”, it also implicates a certain primordial moral import linked to the perception by human beings of such categories as “my” — “your”, “own” — “other’s”. The advent of exchange and the resulting trade involving assets gave rise to the final concept of property filling it with economic content.

Among the many aspects of the property issue we shall refer in detail to the pattern of ownership and the phenomenon of state property.

You will remember that property is a relationship. In this connection we should remember K. Marx who thought that an individual’s property in land was as absurd as the faculty of speech.⁹ This is obviously true for property in general. A group of armed people may call themselves an army only when they are opposed by another army. Similarly property comes into being when interacting with other property.

While the classical pattern of private property¹⁰ seems to require no explanation collective property gives rise to many questions. For instance, what is the motivation of an employee holding shares in the company? What goal setting mode exists in a collective business (owned by all workers)?

The triad of “disposition, possession and enjoyment” underlying property relations can only be implemented in its entirety in private property. All other

⁹ Marx K., Engels F. Collected works, 2nd ed., v. 46, p. 1. Pp. 473,479.

¹⁰ We set aside such atavistic attributes of socialist legal awareness as personal and individual property.

available patterns of ownership — corporate, collective, shared, joint, municipal, regional, federal, state, etc. — in effect are not property.

Some of the patterns referred to above are substitutes whereas other are protected property.

This requires explanation.

If you, reader, and I jointly buy a cow who is its owner? Who can dispose of, possess and enjoy the cow? Neither me nor you. Naturally before buying the cow we enter into an agreement specifying the terms of the animal employment. It should be understood that entering into the agreement we create a third party — a sort of substitute owner, incorporeal or, as they say today, virtual but vested the powers of disposition, possession and enjoyment. It is the only party that may sell the cow and the milk and buy forage. Therefore through buying the cow for our money we create quasi-property or substitute private property. All other ownership patterns based on the principle of property amalgamation are also substitutes derived from private property. The proprietor formed by two or more owners is specified in the constituent documents. Cooperating owners who are **not** disponents (**nor** users as a general rule) may modify, adjust or annul the substitute owner entrusted with their assets. We deliberately use the term “assets”. Material and other values forming the common property remain assets until they have come into the market.¹¹

The difference between assets and property is very significant for understanding the phenomenon of state property.

The economic and legal nature of material assets in possession of government authorities is totally different from that of substitute ownership patterns sounding on the contract among self-determined and unrelated assets owners let alone private property. The only ownership pattern available to every single state is a noncontractual seizure of assets forming the bulk of the

so called “state property” based on legal inequality of an economic agent and the government.

The other reason for which government assets are not property is that they fail to satisfy another necessary (but not sufficient) condition of its creation which is the relation between the changing amount of material assets comprised by property (or assets which may be transformed into property) and personal consumption of the owner.

Property relations arise only when subjects thereof see a real connection between personal consumption and property. Property materialized from accumulated underconsumption and is a possible source of additional consumption of its owner.

It is of no importance what is specifically divided into the consumed and accumulated parts — a self-made product or a product made by hired labour although the question always arises whether to accumulate or to consume. Property feeds but is “fed” with the remains of possible additional consumption surrendered to property.

Here lies the link between an individual and his assets resulting in numerous conflicts in property relations frequently described and yet not thoroughly understood.¹²

Hence the term “state property” is incorrect. State property is not even a substitute ownership pattern since a negotiated, voluntary amalgamation of assets does not and cannot exist under the aegis of the state. No citizen of any country of the world may claim a share of the so-called state property by terminating its arrangement with the state since no such arrangement exists. It should be noted that assets accumulated by government authorities stem from

¹¹ For instance before father Fyodor appeared on the scene in the famous novel by I. Ilf and Ye. Petrov the chairs belonging to engineer Bruns had been his assets further transformed into property through strenuous efforts of the priest.

¹² Serfs did not own land, moreover they were owned by feudal lords. However, their treatment of land, a source of their livelihood, was assiduous and zealous and their labour was distributed between that providing for consumption and that maintaining and enhancing the means of production at their disposal. In a sense serfs rather than feudal lords were real land proprietors.

seizure (basically fiscal) or expropriation and are not intended for business.¹³ Therefore they underlie many types of business operations with non-economic goal setting.

As far as the terminology is concerned “state property” as an established and convenient “figure of speech” differs from its intrinsic content. It would be more correct to call the substance referred to as state property “property protected by the state” a contact with which results in the paralysis of property relations. It would also be acceptable to identify this phenomenon as “the state’s assets”.

A complete paralysis of property relations occurs, as it was in the USSR, in case of a comprehensive etatization of the means of production featuring a total lack of “alternative” assets.

In Soviet times economic activities lacking property relations were both determinative and predominant. They reigned supreme.

The existence of two ownership patterns — state and collective farm-cooperative ownership — was a sheer illusion. Collective farm-cooperative ownership did not imply property as cooperating collective farmers were not sovereign disponents of their assets fulfilling “plans” and executing orders issued by persons who were not members of collective farms-cooperatives.

Of course, the paralysis of property relations could not be absolutized, it could not embrace the whole society because no social systems with absolute properties can exist.

A nation-wide economic system with non-economic goal setting can have economic lacunae within the limits and bounds which do not challenge the unchanged quality of the megasystem. The socialist society tolerated private enterprise, mainly in the most troubled (agriculture) and outsider branches (consumer services). The megasystem suppressed, whether directly or indirectly, such foreign elements or strove to adjust the economic relations

¹³ It should be remembered that here and elsewhere we consider prevailing trends.

implemented in such “economic reservations” in accordance with the prevailing non-economic mode of goal setting. The economic system secretly or apparently dominating in the USSR opposed any type of business-oriented economic activity.

The nature of relations within an economic system with non-economic goal setting cannot be regarded as totally destructive. We have already discussed the spheres of human activities and the circumstances under which activities performed beyond the scope property relations are necessary and sometimes the only possible.

The issue of relations originating at the juncture of private property (or derivatives thereof) and the property protected by the state is not only interesting but also of practical importance.

On the one hand, state property is replenished and enhanced for the account of business. The tax system applied in any spot on the globe results from a compromise in an unfair play. Nobody have ever managed (or even tried) to explain the rate of any existing tax.

On the other hand, neither the tricks like tenders, auction sale, bidding, etc. arranged in the course of public funds employment nor the severity of law nor the efforts of mass media unceasingly castigation corruption, nothing could turn business from eating up state assets as soon as they could be reached.

This eager fight between the state’s power and the energy of life is everlasting.

Interstate property cooperation is eclectic, its forms varying from the imitation of selling events to utter altruism (grant assistance), all parties realizing that the exterior form fails to reflect the content underlain by seeking after non-economic, basically political objectives.

Clear that economic goal setting may only be implemented through commodity-money relations and vice versa — non-economic goal setting cannot be implemented through this type of relations.

Commodity-money relations make the cooperation of owners beneficial enabling the exercise of property rights. The mechanism of commodity-money relations is switched on when different owners contact. The power and persistence of commodity-money relations results inter alia from their function of protecting one property from the other. They maintain “sterility” of property preventing the spread of the “viruses” of negative processes through the establishment of economic ties and strengthening the entire economic system.

Whatever form of beneficial relations we record their agents always are proprietors implementing their economic objectives. Therefore commodity-money relations are the only possible means of actualizing the main attribute of property — economic goal setting. This seemingly rather trivial conclusion has a very important effect: economic goal setting is directed to the outer world and cannot be directed into property.

Let us enlarge upon the point.

The intention of a factory employee lathing parts is to earn wage and his motivation is basically predominated by a material component. But the employee does not sell the products of his labour. He cannot approach free market nor is he the owner of manufactured parts. The employee is unaware of the cost of production in which he is engaged and is not interested in obtaining positive financial results from his work or the factory operation. Moreover even if the factory is loss-making the employee is not directly responsible for such performance as he cannot affect the eventual result which is beyond his province and his interests.

This means that if a factory division or an individual employee passes the product of his labour on along the processing chain to another division (employee) within the same property his activity is guided by non-economic goal setting.

Let us discuss a different situation when the same technology is applied but the product is sold rather than passed on. The picture changes dramatically.

The same employee performing the same job but selling the products bears all business risks and is aimed at deriving profit. In this case his vital interest is to reach a situation when revenue exceeds costs. Therefore he is both an employee and a proprietor and his activity is guided by economic goal setting.

Therefore an organization based on a single property is built on the principles incidental to the non-economic mode of goal setting, the boss being a sovereign. No proprietor of an enterprise would permit anybody to pursue his private commercial interests. An economic goal may only be set for the whole body of elements comprised by the same property. And the main goal set for each element must be non-economic. This is the way of organizing the activity of a bay, shop, manufacturing department is organized. A factory's operations may have a similar organization if its products are transferred to another factory within the same property. But as soon as the product of labour approaches the boundary of property within which it has been manufactured the issue of benefit inevitably arises resolved through commodity-money relations. Non-economic goal setting always finds room inside economic goal setting. It seems to be on the watch to surface and claim its priority.

The contrary proposition is also true. There is always an element of economic goal setting within non-economic goal setting since the proposition "whatever "missions" and tasks be assigned to me I always compare them with my wage" is true for every employee.

It should be particularly noted that the qualitative difference between the modes of goal setting "around the periphery" of and inside property results in the detachment of employees from the means of production manifesting itself in practice through conflicts (often covert, sometimes apparent) between the goals of a company (firm) and private ambitions of employees. The world management practice abounds in the attempts to combine corporate objectives and employee motives. The range of the problem solving techniques is broad enough: from life employment to compulsory attendance of quality circles.

However, neither such steps nor bonus plans nor stock or derivatives purchase plans established for employees harmonize the conflicting interests.

The priority of property relations over any other relations coming into existence in their bosom is completely and finally implemented only under a refined pattern of ownership, i.e. private property, all other derivatives or substitutes giving rise to deep problems.

It has already been noted that non-economic goal setting embracing the whole economic system of a country smashes the boundaries separating different types of property. Even without such external input, however, property relations per se in the course of time change in market environment both in form and content.

In this connection we should refer to certain trends in the transformation of property relations which have emerged during the last decades. Private property is becoming a sort of anachronism, its share in the aggregate of ownership patterns continuously diminishing. At the same time the share of substitute property topped by corporate property is growing.

It has been noted that the link “consumption — accumulation” is the initial, primordial basis of property relations completely implemented in market environment. Today the link remains the most essential and meaningful element of such relations. Therefore both the relations established at enterprises with collective or corporate patterns of ownership and the real-life behaviour of shareholders or owning employees are based on the absolute priority of private property of particular individuals over any other ownership patterns they establish, whether collective, corporate or other of which existing practice is plump with examples.

A change in relations is a derivative of a change in motivation. An individual proprietor’s motivation guides him to maximize profits whereas a shareholder’s motivation guides him to increase the market value of shares. It is arguable that the amount of a company’s profit, its profitability and movements

of stock prices are directly related. That is really the case. One should bear in mind though that, first, stock prices depend not only on a company's financial performance and, second, shareholders and other stock market participants are sensitive to **indicators** describing various aspects of the company operations which can dramatically differ from real indicators of the processes going on in a company. There is every indication of a gradual erosion of relations incidental to the period when refined private property dominated and the expansion of economic relations illustrative of the non-economic mode of goal setting.

Form of Management

Strictly speaking management with its inherent attributes such as controlled and controlling systems, the necessary hierarchy, etc. may be only administrative.

This means that the expression "economic management" highly favoured by many authors is either a convenient figure of speech or the reflection of a wrong belief that such phenomenon exists.

At the end of 1980s, during the period of a particularly intensive search for an economic form of management certain attempts were made at its identification. Economic management was believed to include "methods based on the management of interests and through interests".¹⁴

The substance of this and many other similar definitions becomes clearer if we ask the question "Who exercises management?"

Whoever personifies the controlling system, whoever is at the helm of management he or they necessarily have their own economic interests. Therefore it follows from the above definition that some evidently higher interests amalgamated, identified with the controlling system's interests govern

¹⁴ Political Economy. Moscow, Politizdat, 1988. P. 379.

other lower interests representing a typical attribute of administrative management.

Management generally means “an element, function of organized systems providing for the maintenance of a certain structure, a mode of operation and the implementation of a business mission, objective”.¹⁵ This definition covers all types of systems although fails to reflect a most essential function of social systems, i.e. self-development.

Any society faces a dual task — self-development and self-preservation, the latter depending on the strength of management and the former on the weakness thereof. Management cannot stimulate a society’s development as it provides for the maintenance of its structure (see the above definition) whereas development eventually means its negation. “The life of peoples is driven” by interests (V. Lenin) of which economic interests form an essential part.

Conscious management and self-regulation, self-adjustment are the two poles between which all the innumerable options of social system organization may be found.

The dominance of administrative management in extreme conditions stems from its prime advantage — the highest degree of efficiency. This feature combined with obvious non-economic compulsion enhances the viability of society. A given state of society enables (and this is of the utmost importance) a rapid concentration of available resources to solve the most significant problems. Under such circumstances the measurement of economic efficiency is not required since the goal is attained through the engagement of all resources available to the society.

The concentration of development resources in a single centre is perhaps the most important advantage of administrative management of the global economic system. For a long time it enabled the USSR to intensively compete with allied Western democracies superior in the aggregate economic potential.

As regards natural (non-extreme) economic macrosystems it should be justified to talk of economic inducement rather than economic management, economic inducement being a more precise term meaning the creation of conditions under which an economic agent may or may not make an economic decision desirable for the inciter without any administrative consequences.

A typical feature of economic inducement is a change of economic environment external to the incitee rather than the reduction in possible economic solutions typical of administrative management. It should be emphasized that economic inducement preserves the liberty of choice of economic decisions including those opposite to the direction of economic inducement.

Unlike administrative management based on hierarchy and subordination economic inducement is only possible under complete legal equality of all parties entering into economic cooperation.

In essence administrative management is aimed at an accelerated transformation of the controlled system's behaviour when external conditions change giving rise to a lower (compared with economic inducement) stability of management rules. Under such conditions the rule of law is opposed by the priority of managing will.

Administrative management of economic systems is based on the stability and priority of vertical ties whereas economic inducement is based on horizontal ties, which explains the high reliability of horizontal ties in market environment in distinction from irresponsibility of peer partners typical of economic systems with non-economic goal setting.

¹⁵ Great Soviet Encyclopaedia. Soviet Encyclopaedia Publishing House. Moscow, 1977, v. 27. P. 87.

Form of Organization

Although outwardly varied the forms of material production organization under global non-economic goal setting are basically similar. In emergency situations government agencies are created generally abolishing free market. Centralized resource allocation, regulation of the volume of output, appointment of management personnel brushing aside established procedures, etc.

At the same time the forms of organization of long-lasting economic activities in the USSR had certain specific features. Let us return to N. Bukharin who insisted that Soviet Russia required the growth of productive forces enabling the victory of all social elements.¹⁶

In this case, however, an interesting question remains unanswered: how can it be determined what growth of productive forces would enable the victory of social elements and what would results in their defeat. To give a correct answer (i.e. that eventually found by the system of the country's economy management created at that time) we should recall the statement of the same author: "We grow and they grow too. The question is who grows faster".¹⁷

The rate of growth with its only dimension — pace — soared to idol to be worshiped by everyone who was willing to survive in the country of victorious non-economic goal setting. Stanislav Gustavovich Strumilin was known to say in 1929: "I prefer to stand for fast pace rather than lie in prison".

The form of "command economy" established in the USSR was predetermined by the political and ideological objectives pursued by the country leaders and basically resulted from the spontaneous experience of the economic system creation.

¹⁶ N.I. Bukharin. Selected Works.// Moscow: Politizdat, 1988. P. 345.

¹⁷ N.I. Bukharin. Selected Works.// Moscow: Politizdat, 1988. P. 345.

In addition to idolizing the pace in the feverish desire to develop the muscles of social economy for a relentless struggle against the ideological opponent the form of economic management adopted a planning system based on a vulgar idea of loss-free economy.

The rationale of the new economic system was plain and comprehensible to everybody.

Since, according to Marx, capitalist competition generates losses than through the elimination of competition we create a loss-free economy.¹⁸ This simple play of mind resulted in a system superior to any predecessors in the ability to increase the amount of resources involved in economy along with a uniquely low (if not negative) efficiency.

In planning practice the brilliantly inelaborate idea of “loss-free economy” was implemented through balance¹⁹ reducing the diversity of market relations to a simple table (see Chart 1) clearly showing who and to whom and what delivers and how much.

¹⁸ Another formula of implementing the dreamboat of ingenious minds — invention of perpetuum mobile.

¹⁹ A future economy historian will hopefully give a detailed description of the transformation of balancing method into its opposite, the path of balance conversion into a monster generating tremendous imbalance.

Balance

Consuming factories / Supplying factories	A	B	C	D	...	Total
A						
B						
C		10				
D						
...						
Total						!

Chart 1.

Factory **C** *must* supply factory **B** with exactly 10 production units. It may supply more but in no case less, 10 units being the plan approved for factory **C** which may but is not obliged to fulfill it profitably. Its main task is to manufacture and deliver at least ten units. For the director of factory **C** it is much better to manufacture 10 units at a loss than 9 units at a profit. These two options generated utterly different results. Directors making 10 units at a loss were decorated with orders whereas those who made 9 at a profit were fired out. Why? Because efficiency of each balance item was desirable but not compulsory since basically efficiency of the entire people's economy²⁰ was shaped in the cell accommodating the exclamation mark. Efficiency meant definitive and irrevocable equilibrium. If you produced 9 units instead of 10 you entrenched upon the people's economy efficiency resulting from the equilibrium of the country's economy which was unpardonable.

It is general knowledge that diverse or numerous goals faced by an economic agent are subject to ranking. The absolute and unquestionable

²⁰ Such was the sacred name of the system.

priority of production volume over efficiency was a characteristic feature of the USSR economic system demonstrating its non-economic bearing.

The USSR economic system with its non-economic goal setting had three footholds: worshipping the pace of material production development, idolizing balance and recognizing the possibility and feasibility of man-made prices.²¹

The worship of pace was virtually supernormal. Any drop in production for whatever reason was regarded as an extraordinary event. A factory's policy was aimed at increasing the volume of output determining the status of the factory and its manager. Higher levels of management — central administrative boards, ministries, agencies — followed the same pattern.

The worship of balance was combined with a totally repugnant system of “incremental” planning under which new plans approved for factories exceeded the level achieved during the prior period. The plans provided for output growth even when products were unsalable. Therefore the workers of Uralmash threw over the fence to the scrap yard cast iron balls that nobody wanted.

Prices were continuously attended to by the USSR policy-making agencies although they were established rather simply and consisted of cost plus standard return.²²

Although it took some doing.

The state pricing policy accommodated a never published principle of “people's economy development promotion” under which the pricing practice was tuned to overpricing consumer goods and food and underpricing industrial goods. Eventually that produced a completely distorted picture when one tried to appraise the flow of commodities among economic agents both at industry and regional levels.

²¹ Price creation was a continuous process. A formidable army of price creators basically consisted of factory pricing department employees followed by scholars (!) in branch research institutes and headed by the USSR State Pricing Committee. A price hierarchy also existed, some prices approved by the State Pricing Committee, other by the State Procurement Committee and the most “insignificant” ones by branch research institutes.

²² They are still established in this way for “self-financing units”.

It should also be noted that the pricing pattern made a particular “contribution” to the collapse of the Soviet Union.

At the beginning of the 1990s the products of extractive, processing and heavy industries were underpriced. Therefore according to Soviet statistics the only republic of the USSR (the Russian Federation) showed a continuously unfavourable balance of trade with other fifteen republics. The Russian Federation concentrated the branches manufacturing “cheap” products in consequence of the pricing policy implemented by the State Pricing Committee. At the same time other republics of the USSR yielding mainly agricultural products and soft goods enjoyed relatively high prices.

The effect of those “crafty figures” on the shaping of political behaviour of the republics’ elites during the period of “sovereignty demonstration” should be neither under- nor overestimated. They relied on such information as no other was available and regarded the Russian Federation as a freeloader which must be done away with to win political power and improve economic circumstances in the new states created on the ashes of the USSR.

“Manual” pricing is only one of the factors resulting in the Soviet “economic” statistics which generated heaps of distorted information. Therefore any science-based attempts to optimize the distorted, perverse economic system were doomed to failure.

Speaking of current issues it should be emphasized that any comparison of the development of the Russian Federation during the Soviet period and post-communist Russia is totally invalid. The only thing such economic indicators have in common is their names.

Simulation

Under certain conditions both modes of goal setting simulate each other.

Marketplace participants simulate the non-economic mode of goal setting declaring their “mission”, making charitable contributions and engaging in sponsorship. It should be noted, however, that such declarations and altruistic actions do not deceive anybody as to true objectives pursued by free market members.

The simulation of commodity-money relations is more frequently resident in the spheres of activity guided by non-economic goal setting.

It has already been noted that commodity-money relations cannot exist within one property (let alone one asset). Hence all separate (individual), independent parts thereof cannot set high-priority economic targets. Such targets cannot exist in substance but they can exist formally, i.e. one can “play” commodity-money relations like parents playing “market” when they “pay” their children for doing well at school. However, if such relations in a family cease to be a game and become reality it means that the common family property has come asunder and the family has broken up.

Commodity-money relations can have no real content in “non-economic” environment. The existence of such relations in the USSR was mostly simulated and essentially fictitious.

The trade among factories was fictitious as “sellers” could not select “buyers” and vice versa and the volume of “sales” and their “cost” were specified by a third party rather than the parties of the “transaction”. Moreover, the fact that a “buyer” had no money to pay for a product (pseudo-commodity) was not the reason to refrain from delivery or terminate the “transaction”.

Credits were also fictitious as no security or guarantee was issued and credit was extended at command, by allotment or because it was impossible to wind up an insolvent debtor.

The centrally approved prices (based on information furnished by producers) were only fit for demonstrating their absurdity and could only be applied within an economic system rejecting market relations.

The only purpose of ubiquitous estimates of “economic efficiency” increase through the “implementation” of new technology or equipment was to justify decisions made for non-economic reasons. It is no wonder that the USSR domestic prices were never applied to foreign trade and had no significance whatsoever.

The simulation of commodity-money relations and the engagement of fictitious market attributes in the USSR economic system with non-economic goal setting may be explained by atavistic borrowing from the original free market system which continued to dominate the world.

On the other hand, such simulation preserved the appearance of orderly accounting, almost the main goal of the administrative command system since it permanently had to suppress the Soviet people’s attempts to convert the assets protected by the state into private property.

It is evident that the economic system based on non-economic goal setting maintains an illusion of economy. The paradox was that both scientists and practitioners regarded that illusion as reality. Moreover, today, fifteen years after the economic machine of the socialist empire collapsed, there is still no broad understanding that within its framework no real economy existed. The fact that scientific and political publications continue comparing the GDP of the USSR and post-communist Russia shows that the experts do not realize the magnitude of qualitative changes observed since 1991. We have not abandoned a poor economic model to search for a better one. No — we came out from behind the looking glass and replaced one economic model by another. No — the economic system regenerated. Therefore the USSR statistics may only be compared with themselves.

The simulation of economy in the USSR was so artful that every citizen of the country — from ministers to workers and from workers to economists — regarded it as reality. That was proved by the general deep and sincere belief that the concepts of “profitability”, i.e. efficiency and “cost-effectiveness” were identical for Soviet factories. That was confirmed by practical steps called “the improvement of economic mechanism”. For instance, in the 1980s the USSR made and implemented a decision to stimulate the accelerated launching of new engineering products by increasing the standard of profitability when establishing the prices of new products. But the factories guided by approved ratios, incentives, punishments, etc. and aimed at increasing the volume of output and fulfilling plans could not respond to the suggestion as expected by the authors thereof. The inefficiency of this effort like many other similar efforts is clearly demonstrated by information on the performance of the USSR national-economic complex available today.

It should be noted that during the last years of the Soviet “economy” certain attempts were made to motivate factories giving them the opportunity to implement real rather than invented goals. For instance, in the beginning of the 1980s the USSR Ministry of Electrical Engineering applied a method of translating the production growth pace under which the pace was estimated based on the economic effect of new technology introduction on consumers. The method had no economic sense but enabled a better understanding of real goal setting incidental to the USSR economic system aiming producers at the maximization of production growth.

The facts described above are interesting not only historically.

The simulation of one mode of goal setting within the framework of another mode can often be found in market environment: non-profit organizations engage in business whereas business entities appear to be altruistic.

The most frequently found in market economy is the simulation of business relations among divisions functioning within the same property. Divisions of companies, factories, multinational corporations simulate trading with the obvious objective: there is a pressing need to interbreed high efficiency of market economy with the conditions dictated by non-economic goal setting. This is why increasingly sophisticated systems are developed simulating benefit in the relations among divisions of the same property.

Mission

Economic activities performed under different global (i.e. national) modes of goal setting are based on different principles explained by different economic regulations governing particular economic agents.²³

Whatever the mode of goal setting, any economic activity begins from stating a task specifying expected target performance described by many concurrently attained parameters. When you cook dinner the target performance depends on the quantity and quality of courses, the time it takes to cook, the quantity and price of foodstuffs, etc. A house you build has a floorspace, height, utilities and if the house is intended for sale you certainly want to derive some revenue and profit.

Among the many parameters describing a particular goal pursued by an economic agent one should single out determinative parameters or those showing why the economic agent chose a particular line of activity.

Profit is a determinative parameter of any business activity. Mass of profits or production profitability is a normal target function of any business underlying the task set by the business owner for each planning period. Naturally a business is only profitable when it generates socially useful results

²³ Further we shall concentrate on the attributes of economic systems with different modes of goal setting operating in real sector as this aspect of the issue is both most complicated and most interesting.

or at least results someone needs. Hence the ambiguity of performance measurement: “by profitability” and “by usefulness”. In actual practice it means that business entities choose the side they will show the world depending on the situation.

Addressing the society and its institutions business entities do not advertise the extent of their drive for profit. This aspect of their activity is not mentioned in declarations of their positive social objectives. In such cases market-oriented companies not only conceal their real goals but also try to veil them to the best of their abilities. Of late they have been speaking of terms of the “company mission” which has nothing to do with business.

Let us illustrate this statement. LUKOIL, a leading Russian private oil company, describes its mission as follows:

*“We have come to turn natural resources to public good;
To promote in the regions where the Company operates sustainable economic growth, social stability, prosperity and progress, protect environment and provide for harmonious natural resource management;*

*To enable sustainable and long-lasting business growth and mould LUKOIL into a world leading energy producer. To become a reliable supplier of hydrocarbons to the world energy market”.*²⁴

It follows from the above declaration that LUKOIL has not been organized to derive profit or profit is an unconscious by-product of the company operations.

Another example:

RAO UES of Russia Open Joint Stock Company positions itself as
*“a company providing the country’s industry and people with heat and power”.*²⁵

²⁴ www.rao-ees.ru.

²⁵ www.rao-ees.ru.

The above definition of the company's goal does not explain why RAO UES of Russia constantly insists on heat and power rates increase.

According to Rosgosstrakh the company's mission is "to protect the well-being of Russian citizens offering them accessible customer-oriented products".²⁶

The subject matter, purpose and peculiarities of automobile third party liability insurance (OSAGO) in Russia are plain and it is obvious enough whose "well-being" it supports.

Such definitions of the "company mission" show a deep global contradiction inherent in any social system whose economy is dominated by economic goal setting.

The history of mankind shows that the itch of economic agents for profit maximization tends to result in severe negative social shocks and therefore requires the imposition of certain legal restrictions aimed at the attainment of the society's non-economic goals such as social security, environment protection, defence, etc. Such restrictions are implemented through government regulation and taxes.

The process of civilized struggle between business and the government for the modification of the extent and scope of such restrictions may be observed in any market economy.

On the one hand, the government is well aware that any additional restrictions lead to business stagnation cutting the business tree bearing taxes. On the other hand, business is eager to avoid the imputation of boundless avarice and corporate selfishness. Therefore it is devious in the demonstration on its goals to the society.

A business becomes sincere only in cooperation with another business. Suffice it to review the information contained in commercial proposals, applications for loans, etc. to understand that business community does not

indulge in sentiment. Additionally the real goals of business entities clearly manifest themselves when taxes and government regulations threaten their main goal — money making.

It follows from the above discussion that it is very difficult to discover true business goals based only on declarations thereof.

One must admit that the goal setting for the USSR socialist enterprises was not an easy matter although a special law was adopted describing the goal.

Soviet legislators used a rather fuzzy language. The goal specified in the Law on Enterprises (Associations) represented a set of requests or requirements to economic working arrangement. The goal definition found in the Law was rather elaborate and comprised both “the production at minimum costs”, a very obscure efficiency requirement and “the enhancement of employee well-being”. The Law did not require a strict observance of target volumes nor mentioned the priority of output increase over any other indicators of production development. On the other hand, it is worthy of note that the Law directly required the improvement of employee well-being.

The official Soviet goal setting was clearly aimed at emphasizing the socialist state's paternalistic functions. References to the improvement of the Soviet people's well-being may be found virtually in any economic regulations of that period.

This aspect of the goal setting issue is of special importance because the calls for “people-centred economy” are still audible today and will always be used in political struggle. Therefore we should articulate clear definitions. The concept of «economy» implies a goal bearing. Strictly speaking applying the term “economy” to a country's economic system we acknowledge that it is dominated by the economic mode of goal setting. Any attempt to change the bearing inevitably results in the formation of an economic system with non-

²⁶ www.rgs.ru.

economic (one might call it social) goal setting implying the negation of economy.

A real social bearing could only be found in distribution but not in production. The long-term experience of the USSR shows that the upbuilding of a social state, i.e. a state with prioritized social goals is a political problem. It also shows that under such conditions the society's social bearing deteriorates, the growth of welfare being “temporarily” sacrificed for other goals of higher priority for the country leaders such as increase in production. The administrative enforcement of approved volume targets nullifies the social goals proclaimed by the government.

The real goal faced by a factory manager in Soviet times was simple and clear — to attain approved volume targets. It was the paramount objective. The concept of “planning discipline” consolidated the country's economic system.

From the economic point of view a social (or asocial) economic system makes sense only in terms of searching for an optimal distribution of national income between accumulation and consumption. Since N. Bukharin fearing that the lack of goods may cost the Bolsheviks both their power and heads till the last day of the Soviet “economy” well-being of the people has always been sacrificed for increase in output. As confirmed by the capital capacity of the USSR national income much higher than that of market economies it was not a temporary departure from “principles”. The economic system always accumulated at the expense of the people's underconsumption.

The world experience shows that neither the priority of accumulation (as in the USA in the first quarter of the 20th century) nor intensive social development (the Swedish model of the second half of the 20th century) can solve the development problem in market environment. The solution has been and is still searched for through the unceasing conflict of interests, trial and error.

When such conflict is suppressed by dominating ideological doctrine, for instance in countries with non-economic goal setting, state paternalism results in a uniform distribution of progressive poverty for the sake of satisfying an irrepressible desire for the maximization of production volume.

At the microlevel (factory, company) the multiplicity of goals incidental to any economic agent when the modes of goal setting coexist manifests itself through competition of individual goals for scarce resources.

Under economic goal setting the best allocation of resources is achieved owing to the possibility to compare different options. Every individual goal has its “price”. It is possible although not easy to estimate the eventual cost of reduced investments in safety or environment protection, the criterion of the best allocation of resources being the estimated profit or the level of profitability.

Under non-economic goal setting such possibility does not and cannot exist. Resources may only be diverted from the processes directly affecting the attainment of approved volume targets based on intensified administrative dictation.

In real life it resulted in the rolling campaigns for quality, cleanliness, resource saving, against industrial injuries, etc. which were initiated and soon terminated whereas the struggle for fulfilling plans was interminable.

Plan

Whatever the mode of goal setting, any entity producing goods or services follows a predetermined plan.²⁷

The real problem faced by an economic agent operating under non-economic goal setting is to comply with target figures. This is true for both the

²⁷ The very existence of planning in market economy is regarded by supporters of «centrally planned economy» as an irrefutable proof of its viability.

entire economic system of the USSR and factory and company divisions operating in market environment. Delayed product delivery resulting from non-performance of a factory division usually generates losses incommensurable with the division's costs. Therefore in market economy we also observe situations when every division of a factory must comply with volume targets according to the approved schedule.

The vital difference between the two modes of goal setting is reflected in the planning process, fulfillment audits and responsibilities for performance.

Activities based on economic goal setting imply self-planning which means that a business entity's plan is developed by the owner or its designee. Of major importance is that the owner bears responsibility for the plan's quality, relevance and feasibility.

Economic agents operating under non-economic goal setting are guided by external planning, their plans developed by regulatory bodies holding no interests in economic agents.²⁸ The absence of rights naturally results in the absence of responsibility. The regulators developing plans for Soviet enterprises were not liable for the quality of such plans.

In real life a plan should make allowance for the numerous goals pursued by an enterprise. However it only reflects the most important targets determining the purpose of the economic agent.

In case of a business entity such target is its profit whereas for an entity operating in non-market environment it is the volume of output expressed in a target product mix or cost.

Of course, neither the wording nor the tables comprising the plan indicate which of the targets is the most important, their priorities determined by the system of relations associated with fulfillment audits and the responsibility for nonfulfillment.

²⁸ The issue of «state property» was discussed earlier.

There are two types of economic activity assessment: internal assessment, i.e. that performed by the entity itself and external assessment performed by a person (persons, agencies, etc.) not directly involved in obtaining the assessed results.

Both types of assessment are performed simultaneously and concurrently and the main point is which of them has a higher priority for an economic agent's manager.

Under economic goal setting **internal assessment** has **priority** over external assessment. This means that every owner assesses the state of business and such assessment prevails, its objectivity depending on the owner's ability to assess the state of business. This is an impartial assessment as the owner does not need to distort performance data. The importance of any types and forms of external assessments performed and published by rating agencies and analysts is beyond doubt. To a certain extent they affect a company's capitalization, credit rating, etc. but play second fiddle for an economic agent operating under economic goal setting who knows best its state of affairs.

Under non-economic goal setting **external assessment** has absolute **priority** which means that an economic agent's internal assessment is of no importance. If I am sure that I work well but my boss does not approve of my work it means that I work badly. If, however, my boss who gave me the task and reviewed its performance says that I work well it means that I work well whether or not I work at all.

The priority of internal assessment assigns primary importance to performance whereas the priority of external assessment — to indicators.

The difference between indicators and performance is similar to that between reality and virtually. Performance may be expressed in terms of money deposited with a bank, a certain amount of products or goods and is recorded in accounts.

In case external assessment dominates in an economic system the accent is put on indicators which may considerably differ from performance. The priority of external assessment encourages economic agents to demonstrate indicators expected by the auditors assessing the results of their operations.

In real economy overall performance includes a number of particular performances such as output, sales revenue, mass of profits, profitability, capitalization... The indicators describing the behaviour of such particular performances may move and usually move in different directions, which is typical of both economic and non-economic goal setting. Although in an economic system based on non-market values the lack of a general criterion results in a continuous expansion of indicators controlled by upper management levels. The problem was so acute in the USSR that attempts were made of regulatory restriction of the number of indicators to be reported by enterprises to ministries and agencies.

It should be noted that the diffusion, erosion of private ownership induced by corporate quasi-ownership results in phenomena similar to those observed in the functioning of economic systems beyond the economic domain.

The scandal about the manipulations of the management of Enron, a power giant ranking seventh in the USA, showed that the development of corporate ownership enabled manipulations through deliberate distortion of information. What happened to Enron (and other companies caught red-handed such as WorldCom, Tyco or HealthSouth) essentially tallies with «write-ups» made by most enterprises in the Soviet Union. It is very likely that the USA Department of Justice and the Securities and Exchange Commission (SEC) will encounter similar practices in future.

Regulators of stock market and government supervisory authorities behave today very similar to the defunct ministries and agencies of the USSR. Both are external to the operations of economic agents but require (required) from enterprises within their jurisdiction (investment objects) increasingly

detailed reports on an extended “body of indicators”. The inevitable difference between indicators and performance forms and feeds the growing supervisory system.

A telling illustration is the Sarbanes-Oxley Law enacted in 2002 in the USA regulating the operations of quoted companies (public companies) and aimed at stiffening the requirements to internal control systems and financial accounting. According to Malory Factor, the founder of the Bank of New York, this law is “the government's worst act of violence”.

A fundamental difference between the systems of performance assessment under the two modes of goal setting lies in the degree of their elasticity.

In market environment business revenue and profit have no strict delimitation of positive and negative performance. Different options of performance assessment are available: higher or lower revenue, varying levels of profitability. Temporary losses are also possible.

Non-economic goal setting is based on a rigid discrete assessment system that is ambiguous and contradictory. The assessment is based on the establishing a correspondence between actual performance and approved targets.

Budget Constraint and Deficit Issue

The concept of budget (financial) constraint was introduced by the famous Hungarian economist Janos Kornai²⁹ who suggested the following definition: “A budget constraint is tight if it is governed by iron discipline: a company may spend as much money as is available. It must cover expenses by sales revenue. It may borrow but banks are only willing to extend loans on

²⁹ Janos Kornai, *Deficit*. — Moscow, Nauka, 1990.

“conservative” or “orthodox” terms covering only the advance of further sales revenue.

A budget constraint is soft when the above principles are not consistently followed».

Besides, the tightness or softness of a budget constraint may be measured indirectly for which purpose J. Kornai considered two phenomena.

The first phenomenon is **survival**: “A budget constraint is tight if severe financial difficulties result in a company's bankruptcy. Strictly speaking the company goes under losses, whether the wreck has been caused by its own incapacity or a lucky train of external events. A budget constraint is soft when a company is rescued by the government. This may be done in different ways such as subsidies, an individual exemption from tax or other liabilities (complete or partial exemption or deferral), a discount on a centrally established resource price, an open increase in the centrally established selling price or the tolerance of latent price increase, a soft loan, deferred loan repayment, etc. The government is a universal insurance company sooner or later compensating any loss of the loss-making company. A paternalistic government automatically guarantees survival of the company”.

The second phenomenon by which the tightness or softness of a budget constraint may be indirectly measured is a company's **growth**: “A budget constraint is tight if the company's growth depends on its financial condition, i.e. on the one hand, on its ability to accumulate prior period profits and, on the other hand, under strict “conservative” conditions, on its willingness and ability to invest by borrowing. This in turn depends on its financial condition and expected return on investments. If investments are unprofitable the company may become bankrupt. A budget constraint is soft if the company's growth is not associated with its present or future financial condition. In this case there is no threat of a wreck: the company survives even when investments result in heavy losses”.

According to J. Kornai the impossibility of an inefficient enterprise's rack under the social economic system resulted in an economy inefficient compared with capitalist economy and gave rise to the “tribal curse” of the centrally planned system, i.e. deficit. Kornai regarded soft budget constraints as an incentive to unlimited accumulation of resources by enterprises that can never go broke eventually resulting in deficit.

In my judgement deficit, a necessary shadow of centrally planned economy, is rooted much deeper.

When a factory or its department operates under non-economic goal setting the personal fate of the manager thereof directly depends on the compliance with targets approved by higher authorities. Therefore, in the USSR the fulfillment of a plan was a form of the factory manager self-protection.

The situation was carried to extremes but its subdued aftersound can be found in market economy. Naturally in today's capitalist Russia a shop manager failing to fulfil the task is not indicted for «sabotage» as often happened in the Soviet Union but in the new situation he is in none too good a plight.

If the struggle (!) for plan is the struggle for survival any manager's behaviour is biologically justified — he is seeking for the highest reliability of the target attainment. This goal is naturally unattainable but the eagerness does not become less intensive.

Theoretically the high reliability is provided by reservation. The efforts to secure the fulfillment of plans are the most powerful incentive to reserve all types of required resources.³⁰ The uncontrollable, unrestricted accumulation of all types of resources employed in the fulfillment of approved plans results in permanent deficit. The deliberately overstated needs, if not totally satisfied (which was usually the case), serve as indulgence in case of failure.

³⁰ It should be noted that in the field commanders face the situation similar to that described above — they stake their lives on the execution of orders, counterparts of target figures. Judging by the memoirs of our commanders the most burning problem they had to solve during the Great Patriotic War was the procurement of reserves in possession of high command.

It should be explained why in market economy real accumulation incentives available to managers of economic agents do not result in phenomena similar to the deficit of any resources typical of centrally planned economy.

The first reason is the difference in scale: no modern manufacturing outfit, however large, can be compared with the sockdolager of economy created in the USSR. The regulation and control of resources — the striking examples of the planned economy's ignorance — acquire real significance in market economy. But the main distinction of market economy is the control over proprietors preventing the runaway chain reaction of resource accumulation for future use.

The procedure of determining demand for particular types of resources under centrally planned economy implied that applications of individual factories were reviewed by relevant agencies and added together to derive the ministry's (agency's) demand. The resulting demands were totaled by the Gosplan or the Gosstab forming the so called people's economy demand. The «people's economy» attribute meant that the only treatment of the demand was its unconditional and complete satisfaction. However, this invalid and steep demand returned to manufacturers in the form of volume targets could never be satisfied.³¹ The forming and legitimization of demand including the coverage of the risk of nonfulfillment was topped with the process of the state plan approval by the country's supreme legislative body.

It has already been noted that under non-economic goal setting no level of management can accommodate authorities establishing the sufficiency of material and human resources requested by enterprises for which targets are

³¹ The extent of demand overstatement is shown by the fact that late in the 1970s — early in the 1980s the USSR Ministry of Energy accumulated electrical products sufficient to implement a five-year commissioning program. Unfortunately, the consequences of such abundance are still tangible. The absence of major accidents or even collapse of the power system heavily overloaded during the 2005/06 winter was secured by the redundant power transmission systems built in Soviet times.

approved. The absence of «ownership control» always results in a situation when the growth of demand may be limited only by manufacturers' capacity.

It is generally assumed that the fundamental difference between socialism and capitalism lies in the absence of competition among socialist enterprises. As a matter of fact centrally planned economy has competition — the competition for virtually free resources including labour, the form of such competition being the overstated demand for resources. It should be emphasized that a softer competition of the kind exists also among factory departments operating in market environment. The competition for allocated resources is the established everyday practice in such branches of activity guided by non-economic goal setting as basic sciences, health care, culture, etc.

The competition for resources is opposed by benefit. The problem, however, cannot be solved by awarding bonuses for resource saving since, being an economic inducement, it yields to the pressure of administrative responsibility for complying with approved targets.

The old timers of planning authorities might argue that we have described a simplified planning system. Indeed, in addition to the above procedure the planning authorities of the USSR and union republics worked hard to prepare the balance of national economy keeping fully occupied powerful state-of-the-art computer centres financed by the government. But the paradox was that the two processes were parallel and never overlapped. The only thing they had in common was the idea that non-fulfillment of a random plan would result in disequilibrium of the country's economic system and the ensuing consequences.

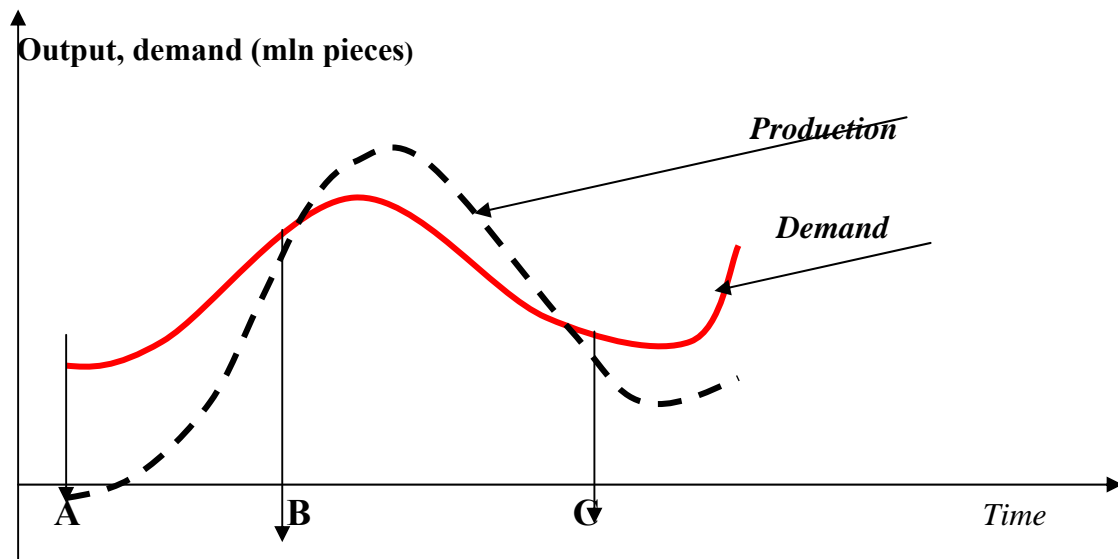


Fig. 1

The regulatory and planning authorities believed that total deficit may be overcome by increasing output. It is easy to see that the struggle against deficit in planned economy turns into the struggle against dead stock. Let us discuss Figure 1.

At point **A** a certain resource is in short supply (its output being lower than demand).

Suppose we manage to speed up output and at point **B** it equals demand.

What happens at that moment? As soon as deficit is eliminated the stock accumulated for the fulfillment of plans and therefore not really necessary becomes its opposite — “dead stock”.³² Yesterday the resource was scarce and demanded by everybody, today everybody has it and therefore it is not wanted. Within **BC** segment demand drops followed by scaling-down production. At point **C** the accumulated stock has been exhausted (embezzled, destroyed, outworn, etc.) resulting in new deficit. The process repeats itself.

The planning system aimed at satisfying unrealistic, overstated demand resulted in a situation when enterprises were unable to fulfill approved plans. No wonder that in such situation utilization rates exceeded 100%, a standard

³² Dead stock means unmarketable resources.

rate being 95% to 99%. No one put any value on the arguments that no facility can operate under such load.³³ The centrally planned system was based on «planning discipline» obliging managers at all levels to work in such conditions and they did. The plans approved for most enterprises under global non-economic goal setting were unworkable. Nevertheless they were fulfilled and even overfulfilled.

Within the framework of centrally planned economy factory managers contrived to comply with any targets by increasing extensive load (utilization time and utilized capacity) through neglect of maintenance schedules and industrial sanitation standards, overworking, unsafe practices, etc. If that was not enough the method of diluting skilled jobs was applied resulting in numerous process abnormalities due to cutting the time of natural processes (impregnation, drying, etc.) or non-compliance with specifications (a typical example being one paint coat instead of required three) and other similar spoilage.

The struggle for fulfillment of unworkable plans was topped by write-ups showing in factory reports the figures satisfying superior authorities (ministries and agencies), which in turn had compulsory plans.

Talking of the relevance of the issues under discussion to modern business practices one should bear in mind the incidence of non-economic goal setting. Mind that the operations of factory departments furnishing components for marketed finished products provide for the reproduction of practices typical of centrally planned economy. This statement is confirmed both by the above case of Enron, WorldCom, Tyco, HealthSouth, etc. caught red-handed at compiling inadequate statements and the continuous practice of recalling products containing defective components. Everything indicates that the write-

³³ It should be noted that in a situation when the increase in targets can only be limited by the calculation of capacity a desperate struggle rages between the «bottom» and the «top» in which the former understate their capacity and the latter prevent such understatement in every possible way.

up and job dilution experience of socialist enterprises is followed in market environment.

Besides, one should not think that economic systems guided by economic goal setting are free from direct administrative pressure. For instance, in 1962 President John F. Kennedy bore pressure on steel companies including U.S. Steel. By pressing administrative levers (threatening to enforce antitrust laws) J. Kennedy compelled the companies to abandon their attempts at price increase.

That, however, did not result in degeneration of the system which retained all attributes of economic goal setting. The economic mode of goal setting is inherent in economic systems with strict budget constraints and eventually contingent on them.

Economy Game

Business managers facing the duality of goal setting (economic outwardly and non-economic inwardly) in their companies realize the ensuing burden. Any attempt to introduce market regulation in company divisions results in recurrent “economy game” similar in methods and forms.

The Soviet economy regulators made similar attempts imposing the so called “self-support elements” intended to stimulate efficiency improvement by enterprises.

Economic systems with non-economic goal setting require no comparison of costs and results, the latter being a fetish worth any costs incurred by an economic agent standing behind any system with soft budget constraints. The goal of obtaining predetermined results implying a cruel punishment for failure results in the readiness to sacrifice individual results compensated by absolutions dispensed by regulatory authorities: excessive payroll, losses, the growth of surplus inventories, unemployed equipment, etc.

Any attempt at introducing tight budget constraints in the economic system's divisions guided by non-economic goal setting is tantamount to demanding from a fighting army strict budget implementation instead of victory.

Under non-economic goal setting when volume targets have priority over any other assessment criteria pseudoeconomic environment is formed based on the so called “internal prices” underlying a sort of profit equivalent determining the rate of bonus payable to employees.

The defect of such system obstinately replicated by each new generation of managers is not only that internal prices may only be established by adding costs to standard profit calculated based on such costs. This pricing method naturally stimulates the overstatement of costs included in price calculation.

More important is that such systems bring discord into the operations of factory departments by which they are used. In that case a relatively independent business unit (e.g. a shop) uses two regulating systems: administrative control and certain elements of economic incentives.

In practice the forms of conglomerate may vary but there is a set of general patterns found in case of concurrent implementation of administrative control and economic incentives.

First, the power of control exceeds that of economic incentives — removal of a manager automatically wipes off his economic incentives.

This principle underlies the priority scheme employed in business operations and dominated by goals under administrative control which, having been attained, give place to the consideration of plan targets. This also involves a priority scheme applied to allocate resources among competing lines of business operations. For instance, if failure to comply with volume targets carries administrative responsibility whereas environment pollution carries economic responsibility the bulk of resources is allocated to the realization of plans.

Second, concurrent administrative responsibility for the performance of plans competing for resources, their priority set based on the extent of superior management responsibility (the principle of “derived ranking”).

Third, no facility under administrative control can have an internal incentive scheme. Administrative control of a system applies to all components thereof. Otherwise the system manager is unable to provide for the fulfillment of the task for which it bears administrative responsibility. The reverse situation is also possible and even common. Administrative control methods may be implemented by individual parts of an economically stimulated conglomerate.

Fourth, in case when production is only possible based on a stable engineering process administrative control is the only possible option. The economic pattern of a business entity suggests free choice of both suppliers and consumers. Sure enough in such case no stability of technical links can be secured.

Of special importance is the issue of converting the criteria mechanism used to select the directions of process improvement under different modes of goal setting.

Economics regards the calculations based on changes in profitability as the only criterion for choosing among various technological innovations, two alternatives being suggested, i.e.:

$$R_k = \frac{P}{K}; \quad (1)$$

or

$$R_s = \frac{P}{C}; \quad (2) ,$$

where:

R_k means return on equity;

R_s means product profitability;

P means profit;

K means capital;

C means product cost.

The economically sound is the alternative under which:

$$R_{k(1)} > R_{k(0)} \text{ or } R_{s(1)} > R_{s(0)} \text{ where:}$$

(0) is the base case;

(1) is the alternative case.

These criteria (or their modifications involving incremental amounts) do not work under non-economic goal setting.

Let us discuss the construction of criteria (1) and (2). The general principle underlying any criteria may be briefly described as follows: the numerator is benefit (in our case — profit) and the denominator is the critical (scarce) resource (capital expenditure, production cost). The innovation assessment criteria under non-economic goal setting are constructed in the same way. The concept of profitability in the context of non-profit-oriented activities comes down to the assessment of the relation between the increment in a target (e.g. output) and the factor constraining those who perform approved tasks. For instance, in the 1980s under the acute shortage of machining capacity at the USSR machine-building plants the effect of new product launching was assessed based on the relationship of the new product's cost and labour input.

It should be noted that managers guided by non-economic goal setting have only an intuitive apprehension of other than economic motivation driving the assessment of suggested technological innovations. This is the source of

many conflicts outwardly looking like the struggle between retrogrades and innovators suggesting solutions whose efficiency is generally believed to be beyond doubt.

Under non-economic goal setting the “economy game” at any level whatever — from a factory shop to a country's economic system — has the same result: various forms of economic process simulation are generated. The great majority of players (as the USSR experience shows) regard this game as reality. An “economic image” of an economic system with non-economic goal setting is built. Attempts are made at its improvement giving rise to in-depth economic research.

Simulation generates illusions.

Fate of “Planned” Economy

Today we witness a growing interest to the issue of state planning. The matter in hand is that “soft” economic regulation applied by governments of many countries is insufficient. The Russian government betrays a clear intention to restore command economy including its necessary attributes such as Gosplan and Gosstab.

The restoration of totalitarianism in Russia's economy seemingly unthinkable in this country after seventy years of physical, moral and intellectual self-destruction becomes possible because having rejected communism in letter Russia failed to reject it in spirit.

In his day V. Lenin believed that the hardships suffered by Soviet Russia resulted from the underdevelopment of capitalism in Russia. Today the situation is reverse: communism in Russia retreated failing to reach its logical catastrophic end which must have been of a purely economic nature. Fortunately it did not happen. The country was preserved and shielded from the

abyss of starvation and chaos. That is the reason why the idea of restoring totalitarian economy is still alive and self-replicating.

Even the authors emphasizing the inefficiency of centrally planned systems sometimes explain it by today's engineering constraints. According to Maurice Allais, a winner of Nobel Prize in economics, "...the time it would take to draw up calculation programs, to enter data and transform and utilize the calculation results for an economy consisting of millions of consuming and producing units and millions of different benefits is beyond human contrivance and technical feasibility".³⁴

So far the understanding of fundamental, evils of centralized directive planning irremovable by any powerful computers is still unperceived and has not become a general issue of economic discussions making the backslide possible.

No one can prevent the comeback of the idea of subordinating economy to a single regulator but we must make a cold evaluation thereof.

Naturally the resurrectionists of planned economy cannot ignore the USSR experience. They are advocating "soft" planning which can deceive nobody. Having been initiated the process will not rest there. When a plan is not directive it is a forecast as the case is now. And if a plan is directive and failure to comply with it results in punishment (in whatever form) the result is predictable — the cannibalistic economic system and its attributes, deficit and dead stock — will revive.

At the same time there is no denying that the contemporary world economic system demonstrates a continuous complication of links manifested in the growth of systemic risks adding new conditions to the intricate relations between governments and business.

³⁴ Maurice Allais. Efficiency Conditions in Economics. Moscow, «Nauka dlya obshchestva» Scientific Publishing Centre, 1988. Pp. 124-25.

To a certain extent the “government – business” link always resembles relations between a herdsman and a herd. The herdsman is certain that he knows how to fatten cows and increase milk yield but this does not mean that every cow dreams of fattening and yielding as much milk as possible before being taken to the slaughterhouse.

The ensuing contradictions are settled by stick rather than by carrot.

It should be noted, however, that in a democratic society the herd is periodically capable of materially influencing the choice of a herdsman.

Business permanently checks the strength of the government’s economic position. The government in turn cruelly represses the unceasing attempts to satisfy private interests at its expense.

Business is zealous for absolute freedom. But the extent of permissible freedom implies corresponding responsibility. A free entrepreneur bears relative responsibility applying only to his current performance. Neither an individual entrepreneur nor a large corporation bears all risks relating to the remote indirect consequences of their business operations. The negative effects caused by unrestricted competition may affect all members of society including those who have nothing to do with it. For this very reason the society has a moral right to institute restrictions through regulatory authorities both inducing and directly limiting the choice of behaviour patterns available to economic agents.

However, government regulation of economy is a shield.

It is opposed by sword.

Unlike fish seeking the bottom deeper, men look for what is better. And business (other things being equal) feels better under the least external regulation. This is why major corporations try their best to outstep the bounds of national legislation strictly constraining their freedom.

Liberalism survives through globalization. The anxiety to get beyond public control which fails to keep pace with expanding opportunities and new

financial tools of deriving revenue as one of the most powerful globalization incentives.

Responsibility of multinational corporations should match their potential influence on the processes going on in the world. The natural development of international economic ties and mass overrunning the bounds of national legislation by economic agents is followed by the development of a legal framework of the international economic order. This is the problem locally solved by the European Union through numerous directives.

Presently another trend may be traced which, having been implemented, might promote the formation of a global economic system guided by non-economic goal setting. The trend is based on a natural desire of any economic agent under any conditions including market environment to achieve a soft financial constraint combined with all market trappings. This is the bearing taken by monopolies trying to release the pricing process from the dominant market influence. The available experience shows that this movement can only be discontinued through regulatory prohibition taking in developed countries the shape of antitrust law.

In this case monopolies are anxious to attain the unattainable — soft financial constraints in the absence of directive plans — since global non-economic goal setting is incompatible with market reality. In fact monopolies create conditions for the transformation of market economy into centrally planned economy.

To understand possible options of future economic development one should take into account the following important conditions.

First, the contemporary market system is a result of the long evolution of mankind and therefore cannot be regarded as final, eventual and not subject to changes. It can hardly be assumed that the contemporary market system is the ultimate destination of human economy.

Second, notwithstanding obvious shortcomings the process of centralization and concentration reaching presently its high tide cannot be stopped. In effect the process promotes a continuous expansion of non-economic goal setting, the only mode of goal setting acceptable to any divisions owned by continuously proliferating and enlarging megacorporations.

Therefore if we try to build a prognostic model based on the trends describing the evolution of contemporary market we may suggest that it will result in the highest level of the world economic system globalization. The movement in this direction will totally destroy the basic property concepts underlain by the primacy of private property. The economic development of mankind cannot avoid a higher level of socialization. One must admit that the world is heading for a global economic system with non-economic goal setting. Of course, the current trends will not enable a global remake of the USSR but the chances are that the present day economic liberty will most probably pass away.

The transition to a higher level of globalization requires answering a host of economic challenges.

In any event people face such and similar challenges time and time again. I wonder what the end of the story will be.

Reserves for Future

Let us touch upon the question whether it is possible (sometime in future) to soften the rigid financial constraints.

It is quite within reason to suggest that the economic system development under globalization would require a more rigid financial constraint imposed on any economic agents it comprises.

The review of economy evolution through the history of mankind shows a trend of changing from soft to more rigid financial constraints. The degree of

rigidity of economic constraints imposed on particular economic agents is the main factor of enhancing “survivability” of the global economic system within which they operate.

At a first approximation the degree of financial constraint rigidity in a given economic environment is determined by the extent of an economic agent's influence on the process of profit generation described by expression (3).

$$\mathbf{P} = \mathbf{G} - \mathbf{C} \quad (3) \text{ where}$$

P means unit sales profit;

G means unit price;

C means total unit cost.

The softness of financial constraints stems from two factors: first, generation of profit ($\mathbf{P} > \mathbf{0}$) is not a decisive criterion of assessing an economic agent's survivability and, second, any change in cost (**C**) matches price (**G**) movements. The second factor means that profit enhancement ($\Delta\mathbf{P} > 0$) may result from both cost reduction ($\Delta\mathbf{C} < 0$) and the rise in administered prices based on the level of production costs ($\mathbf{G} = \mathbf{F}(\mathbf{C})$), i.e. under a softer financial constraint profit enhancement ($\mathbf{P}\uparrow$) may be and generally is caused by price advance ($\mathbf{G}\uparrow$).

Under rigid financial constraints typical of the present day market economy the condition ($\mathbf{G} \neq \mathbf{F}(\mathbf{C})$) is valid meaning that price is objective and market-based. However, even in market environment a manufacturer (seller) has a certain opportunity to affect the price of its goods not only through “price collusion” but also through permanent testing the market's willingness to accept higher prices. The efforts (and costs) of a manufacturing seller are aimed both at improving cost reduction methods and inducing the market to accept higher

prices (advertising, packing, etc.). Under such circumstances financial constraints are only relatively tight.

The future stiffening of financial constraints may be implemented through a total elimination of the manufacturing seller's influence on prices provided a maximum expansion of transfer prices coverage.

Obviously transfer prices may and do exist only within a single property. When no change of ownership occurs a product moves along the production chain at transfer prices taking into account only production costs giving rise to a tighter financial constraint: the contribution of conversion involving the product to the improvement of profit generated by the actual exchange results only from cost reduction. Using the terms of expression (3) this condition is formalized as follows:

$$(P\uparrow) = (C\downarrow). \quad (4)$$

This degree of financial constraint rigidity is the only possible today.

The transition from (3) to (4) denotes the economic system's development reserve.

Everything around us and our life itself are the examples and the cockpit of uncompromising struggle of opposites which cannot exist without each other. Examples of such “pairs” are in plenty: good and evil, collectivism and individualism, strength and weakness, wealth and poverty...

The conflicts arising among the opposites of all kinds and forms have been repeatedly described and discussed. It is the same old story.

The originality of the present work is that it suggests a natural opposite of economy accompanying it from the word go, i.e. non-economy.

The two opposites are both in constant unity and struggle.