Solving Russia's economic crisis: a question of scientific method

Speaking to more than 50 people at the Economics Academy of the Russian Federation Ministry of Economics on April 25, Lyndon LaRouche was introduced by Academician V.K. Senchagov, member of the Academy of Natural Sciences and rector of the Economics Academy. Subheads have been added.

Dr. V.K. Senchagov: Esteemed colleagues, today we will have a lecture from a well-known scientist and public figure, several-time candidate for President, and the author of several works which have been translated into Russian, in particular, a very interesting book, *So You Really Wish to Learn All About Economics?* which we have here. We can help anyone who is interested to obtain this book.

There are several other works that have been published in Russian and I will not outline in detail my own attitude to Mr. LaRouche's views. I would like only to say that for us, of course, his view of the current economic and political situation is of great interest, as well as his view of the sources and nature of the crisis and, most important, ways out of the crisis. Essentially not a single theory works today. We have gotten off into fetishism and today are floundering in the current of market fetishism, in which we make a dogma of the market, not only as practice but also as theory. Thus we have an acute need for serious economic analysis of our situation and of the situation of the world economy and the political situation in the world as a whole.

The Economic Academy has devoted particular attention to the question of social protection, and we held an international conference on social protection. Today we believe that the key question is the stability of development in general. For us at the Economic Academy, Mr. LaRouche's ideas are of interest in that context as well. Stability is not only a philosophical concept, it is also an acute political and social problem. We are proposing to hold an international conference on this problem, but we have not yet found the necessary support. Despite this, we will prepare and conduct it.

We are also interested in serious analysis of the question of inflation and the problem of the collapse, which has become a total collapse in the last few years, and which there is as yet no means to escape.

Naturally, I could list many more matters of interest to us, but I think that suffices. I would like just to conclude, in again introducing Mr. LaRouche, by saying that he has been elected a member of the Universal Ecological Academy. He is also a collaborator of the Academy of Natural Sciences.

Mr. LaRouche works in the Schiller Institute, together with his charming wife, who is here, Helga LaRouche. Let us proceed with the presentation by Mr. LaRouche. Please state your own theme, I do not restrict you.

Lyndon LaRouche: I shall divide my remarks into three sections. First I shall speak about the present and imminent world financial situation. Second, I shall indicate a few principal features of physical economy; and finally, I shall conclude by summing up certain aspects of my work, which will be extremely controversial, in the fields of physics and mathematics, as well as economics—although I can also say that I know that some aspects of my controversial side, which include my sympathies for the great Academician V.I. Vernadsky, in both mathematics and in physics, have already found their own happy resonance here in Russia. So I shall indicate the more controversial topics, with the view that some among you may be interested in pursuing these intensely, from the standpoint of physical economy.

It must be said now, that if you look away from the painful situation in Russia itself, to the world more broadly, we are in a general collapse of the world economy; and to a large degree, the problems in Russia are a reflection not of conditions internal to Russia, but the reflection of a collapse in the worldwide economy.

As you probably have observed (at least some of you), during the past two months, especially the past six weeks, there has been an outbreak of a new round of financial collapse throughout the world markets.

What we are facing is not a cyclical collapse, but a systemic one. What is going to happen, without question, is a general total breakdown collapse of the global financial and monetary system. One cannot say exactly when the breakdown will occur; but it will be a breakdown. We will see a lot of collapse leading eventually to a complete breakdown of the monetary and financial systems of the world. If there is any comparison to the situation in the Great Depression of the 1930s, I would say it is to the year 1931, in which we had first the collapse of the Wiener Kreditanstalt Bank, then the following collapse in Germany of the Donat Bank, which set

forth a chain reaction leading to the floating of the pound sterling in September 1931.

What is happening now is much worse than that, however. As you know, if you've studied the world economy, the world economy estimates in trillions of dollars equivalent output as against the amount of debt. The amount of debt is reflected (not total, but reflected) in about a $16 trillion a day or more turnover in purely speculative paper.

The situation can be compared to a terminal metastatic cancer, whose infection has been noticed here in Russia, in the relationship here between banking and privatization, in which every nook and cranny and pore of the economy of Russia is a victim of an international process, not a domestic one.

The problem is that you have a very large, purely speculative financial bubble, which grows at the expense of what is called leverage against the real physical economy. As the bubble grows larger, its appetite for income stream grows greater. This is reflected as the increase of debts of governments of firms and financial institutions. This is reflected then as asset-stripping and looting of the actual economy, so that the bigger the bubble becomes, the smaller becomes the real economy.

The bubble is the cancer; the real economy is the victim. In medicine, when the cancer becomes big enough, the victim dies, and so does the cancer. In other words, this is not a cyclical disequilibrium crisis; it is a crisis like a terminal cancer, a systemic crisis. The breakdown could occur within weeks or months, or next year. But it will occur.

Now the question is: When the economy—the financial and monetary system—breaks down, what do the nations do?

In the case of Russia, presently you have a crisis defined by adapting to a sick world economy. What happens when the sickness collapses? What do you adapt to?

A number of senior people around the world are aware of this crisis. The young, vigorous, but not well-educated people who run the financial system refuse to face reality. The governments generally, so far, refuse to face the obvious reality. The so-called establishments of countries—the leading circles, you might say the *nomenklatura* of the United States and Britain and Germany and so forth—refuse to face reality. Yet one day soon, this crisis will strike. The problem is that the governments and leading institutions around them are not prepared to react. They would consider anybody who mentions the fact of this crisis, a dissident—or perhaps an enemy of the state.

So therefore, the problem is not that we could not solve the problem; the problem is that we might come into the problem *unprepared* to take the appropriate measures.

I shall only say briefly (I think most of you know this): It merely requires an act of will by a state to create a financial system, a banking system, a currency system. It is merely an act of will by a state to put a financial system or banking system which is bankrupt into bankruptcy. The underlying problem is how to produce the food, the goods, the industry, the infrastructure, to have a viable economy to go with a new financial system. The other problem is that in the past century, especially the past half-century, the physical economies of the nations of the world have become largely interdependent. Therefore, it is necessary to have at least some nations in agreement on the principles of economy under conditions of reconstruction.

We can take, for example, my own country, the United States, or Russia, Germany, Japan, and other countries as an example of this problem. If there is an agreement on principles of sound economy, then there can be agreement among states to reestablish, in a very short period of time, a new world financial and monetary system to replace the old one, while we put the old one into bankruptcy.

The essence of an economy

I wish to shift to two immediate questions on physical economy, in order to put my remarks on physical economy as such into focus.

The peculiar and unique, if not exclusive, potential of the economy of Russia lies in the scientific-military-aerospace sector, a sector which I see with great fear being dismembered. Russia's ability to maintain a sovereign national position of cooperation in a time of crisis, depends upon its having relatively intact the cadre section of its military-scientific-aerospace capabilities.

Let me indicate and underscore the historic reasons for that.

First of all, man is not an animal. This is emphasized in the following set of facts. The human race has been on this planet for at least 2 million years, perhaps more. The sum total of the increase in man's power over nature in the past 500 to 600 years, has been greater than in all human existence prior to that time. The center of this development was in Italy during the fifteenth century, with the idea of a development of a new kind of nation-state introducing new conceptions of law and statecraft which never existed before.

The second phase of this, was the simultaneous development of what we call today modern science. Even though the roots of modern science reach way back in history, even to Central Asia and ancient solar calendars, or also to the work of the Academy at Athens in Plato's time; and although European development in science drew upon many precedents from many parts of humanity, a revolution occurred in Italy in the middle of the fifteenth century which gave us a coordinated conception of modern science. And you are well aware, I need not explain to you, the history of scientific development in Russia, which led to the scientific community which existed in the recent period.

The essence of economy is not in the relationship among objects. Economy lies in the mind of man, in the ability of mankind to increase the power of man per capita in the universe. We are approaching the end of what can be done on Earth alone; all science points in the direction of the exploration and colonization of nearby space. In my opinion,

all of the major developments in technology, in production, in science, will come as a by-product of our preparation for the exploration and colonization of space.

The easiest reflection of this is in studying the division of labor of society over the known history of mankind. It was only by about the eighteenth century that we got to the position where society did not require at least 90% of its labor force employed in rural agricultural production. Our progress has been based entirely on using technology to improve the productivity of agriculture and simultaneously, to introduce urban industry and development of infrastructure generally. All of the progress in the past 600 years, has centered upon a number of projects which could be called *science-driver projects*. For my purposes, I refer to the Ecole Polytechnique under the leadership of Gaspard Monge between the years 1794 and 1814 as the model of a science-driver program.

I'll give you an example. In the 1940s and 1950s and 1960s, we used to discuss the fact that it was in military programs in time of war or preparation for war, that the greatest advances in productivity of labor have occurred. We have today a dangerous opinion to the contrary. Young people today say we must dismantle the military industries. This is because they have not learned a fundamental principle of technology and economy.

How is it that, during periods of great military expenditure for objects which are not consumable by industries or human beings, that we have the highest rates of growth, either during that period or following that? The obvious answer lies in the relationship of science to modern industrial and related production.

If we think of the production of military goods of high technology or space goods as like a university research laboratory, the answer should become clear. In the laboratory, if we make a discovery which overturns a previously established axiomatic assumption of scientific belief, we then construct a design of an experiment, to test and prove the principle which we have discovered. We continue to work on such experiments to refine them. When we have refined the experiment, we make a *machine-tool principle* of it. The investment in the knowledge contributed to the education process, plus the machine-tool principle, results in an increase in the productive powers of labor.

In wartime, we produce war goods. They cannot be eaten by human beings in large part. We do the same thing in space programs, which have a useful purpose but are not immediately consumable by people on the planet.

For example, in the United States during the 1960s, we had the highest rate of growth in a short period of time. For every penny which we expended on space exploration, we received at least 14¢ in return in benefit to the economy. That is easily traced.

The transmission of high rates of change in scientific knowledge into the machine-tool design for the space program, meant the availability of investment in the machine-tool principle for the entire economy. The entire international so-called information technology revolution is a by-product of the space program. The problem that you had in Russia, under the former regime, was the inability to move the technology efficiently from the science-military-space sector, into the economy as a whole, which otherwise also crippled the rate of progress in the scientific sector. That is, the poor productivity in the non-military sector crippled the development of the scientific and military sector.

I think that what I'm saying is clear.

Let me proceed to the final phase of my remarks.

The mathematics of real economic analysis

The problem arises when one tries to put into a conventional mathematical form what we can easily measure either in successful economies or in living processes.

My work in the 1940s began with a few years of work on the work of a Prof. Nicholas Rashevsky, who wrote a couple of major texts on the subject of mathematical biophysics in the 1930s at the University of Chicago.

Now, Rashevsky's work was in a sense a failure, in failing to realize its purpose, but I found it very useful nonetheless. As many of you would agree, I think, sometimes the study of well-done, failed experiments, is one of the most profitable areas of scientific inquiry. It became obvious to me that Rashevsky could not solve the problem, and it became obvious to me *why* he could not solve the problem. Let me just skip from that, to indicate that that is an area which I think should be considered.

Let me briefly describe how this came about, and indicate what the controversial issues are in problems of physical economy.

My work began as a reaction against a book called *Cybernetics* by a fellow called Norbert Wiener, which became very influential and famous. Wiener advanced a theory of negentropy which I found absurd. This is what led me to do my work on Rashevsky. Without discussing the details of Wiener's work, I'll just indicate what the problem is.

It is very easy, if we simply open our mind, to construct a mathematical image of a successful economy.

First of all, simply take a list of all of the physical things which are necessary to sustain a society at a certain level of technology. You can include three other items which are in the form of services, but which have the same value or are essential components of the economy. Obviously, health services are essential because of demographics; you cannot have a well-educated population if it does not have a decent life expectancy. For example, if it takes 25-30 years of life to produce a matured young scientist, you can't have him dying at the age of 35! Second, education. Third, the development of science and technology as such. These are absolutely indispensable elements of any society at a given level of society. Then the measurements become obvious, if you take these characteristics.

We compare these against three metrical characteristics: per capita, per household, and per square kilometer of land in use. You then take the input at any second, which consists of household goods and producers' goods, and you compare it with the produced output of the same market baskets or better market baskets. And you compare the output with the input to determine what is equivalent to a free-energy ratio, with which the ordinary thermodynamicist has no problem so far.

But we have to add something. There is another restriction, as the lack of railroad development in Russia attests; as the lack of power attests; as the primitiveness of equipment in certain industries attests. Not only must the free-energy ratio increase, but the *energy density per capita must increase*.

My problem, back years ago, was looking at this and proving this in many ways; and I indicate what the constraints, the so-called inequalities are, for this kind of measurement. It does not conform to a generally accepted classroom mathematics. It does not conform in particular to a linear, zero-sum game. You can show that all so-called classical economics, not including Leibniz and not including the Ecole Polytechnique of France earlier, and not including the American System on which the United States was founded, are zero-sum game economics. Marx is the same. Marx says he eliminates technological progress from all considerations defining economy—value.

Most economic systems can be reduced to the form of Leon Walras's equations—a fascist economics—or they can be reduced to a form which is acceptable to someone like the late John Von Neumann. But the characteristic of a real economy is that it is not a zero-sum game; and what is not entropic in a living system or in an economic process, cannot be described in terms of gas theory. Because as we know, the Boltzmann expressions are based on the idea of a zero-sum game in terms of gases.

So I was perplexed by this problem, though I knew I was right, until, in 1952, I spent the better part of the year working through Georg Cantor's *Beiträge,* his 1897 work. And then I returned to some work of Riemann, among others, and I read again the famous "Hypotheses" paper, and particularly, as I got through the third section of that famous paper after reading Cantor, I read this with growing excitement; and when I read the last sentence I almost said, "Hallelujah!" because, as Riemann emphasized at that point, when you understand that problem of mathematics, you have to leave mathematics and go to the next room—of physics.

Since my work is defined on the basis of this notion, it is based on the concept of creative discovery which is expressed in the form of discontinuities in any preceding formal notion of scientific knowledge.

This is very easy to understand from a physics standpoint, because what do we do with a discovery? We can call any such discovery *an axiomatic revolution in knowledge*—that is, a change in one of the implied axioms of our system. This must occur naturally as a discontinuity in any mathematical representation of our system. This, of course, was the significance of a fellow called Kurt Gödel's devastating destruction of the reputation of Bertrand Russell in science, in his famous 1931 paper, and also the destruction of the reputation of competence of John Von Neumann.

Therefore, we cannot reduce physical economy to a formal mathematical system. But what we can do, is rather to recognize that economy depends upon technology; that technology in turn depends upon fundamental discoveries from which we obtain derived or secondary discoveries. Any such discovery must, by definition, represent a *discontinuity* in any previous formally consistent representation of knowledge. But what is deceptive is that once we have made a discovery, if the discovery is valid, we can always give, from the standpoint of the new discovery, a mathematical representation of what we did before.

Let me conclude with one observation which is crucial in the context I just noted. No animal species is capable of willfully increasing its potential population density. Only the human species can do this, and the human species has obviously done this its entire existence. What we in modern times have come to call *fundamental scientific discovery,* is a reflection of that quality of the human mind which is capable of doing what no animal mind could do. Economics is the reflection of that fact. Rather than be upset by the fact that we cannot mathematically predict, before we make the discovery, what the discovery will be, let us reflect on the beautiful, historical, human aspect of this problem.

How do we learn from our ancestors in science? In science, for example, a young child learns to re-create in the child's own mind, what passed through the mind of Pythagoras almost 3,000 years ago. We do not learn a formula from Pythagoras. In a good classroom, the teacher causes the child to re-experience the mental act of discovery.

Up until the time of—even through—the fifteenth century, virtually every European discovery in mathematics, was of the form of the ideas of two associates of Plato, Eudoxus and Theaetetus. The child in school, in studying geometry, learned to relive these acts of mental experience. It is by the mental act of re-experiencing the act of discovery, by reliving of that in the child's and the older student's own mind, that we know what a discovery is.

Finally, this has two implications. It is the proper humanist way to educate a child and a college student. It is the secret also of the scientific crash program effort, the science-driver programs.

When people work together on solving scientific problems such as breakthroughs in the conquest of space, such teams will accomplish, within a matter of a few years, what would otherwise take humanity two generations to do. If we wish to get the best ideas for society, we pick the area of scientific work which will give us the most relevant, applica-

ble scientific development for technology. Finance that team to do that work; and you will get, as a result, the knowledge you need to improve the society.

What economic model for Russia?

What follows is an excerpt from the question period:

Senchagov: I am very interested in what you said about the need to re-create a banking and financial system from scratch. I agree that you should not have a tilt in the direction of the finance and credit system at the expense of the development of technology and industrial capital as a whole, but what would the main idea be, in creating a banking and financial system which would more closely cooperate with industry and other spheres of the national economy?

In this connection, I would be interested in your attitude toward the book by [George] Soros called *Financial Alchemy*, which is quite a large volume. At any rate, this "financial alchemy" apparently permits him personally to acquire large sums.

LaRouche: I think that is a purely temporary and passing arrangement. The alchemist is about to be burned in his own crucible.

Senchagov: But the book has mathematics, it has everything, all the trappings of science.

LaRouche: But it's not. There is no science of money. It's like statistical procedures. We have, in the United States and in Europe, people using non-parametric statistics to try to prove all kinds of things; and Soros's business is largely non-parametric statistics.

This is like a casino. It's the statistics of a casino. And it only works because some idiots turned the world economy into a casino.

As far back in history as I know, there has been a conflict in man. The conflict, as far as I know, starting from Babylon, has always been one issue, with the usurers taking one side, and my friends taking the other side. It is a conflict between those who want to hold slaves, and keep most people stupid so they will be obedient slaves, and those of us who believe that all individuals are sacred.

This can be summed up in two philosophies, where I take the side of Solon, in which, one side says, "Man must serve money," and I insist, like Solon, that money must serve man.

To be as brief as possible, I just referred in my remarks to the young United States not dying as a result of the Treaty of Paris of 1783, where the French king did die. What was established by the Americans under George Washington and his Treasury Secretary Alexander Hamilton, was the only successful general model of economy that has ever existed on this planet. And therefore I consider Americans who have accepted the British System instead of the American System treasonous idiots! If you've got a good system and you take somebody else's system that doesn't work, that is not a very good thing for your country.

The system is very simple. It was not new to the United States, and it was used in the seventeenth century in Massachusetts for a while: the use of paper money as credit issued by a government to foster investment and trade. This principle is embedded in Article I of the U.S. federal Constitution, which outlaws Adam Smith, because we knew what was wrong with Adam Smith by that time.

The system is called *a system of national banking*. The state creates a bank. The state, in collaboration with the Executive and the Legislature, creates money. The money is deposited with the bank. The bank loans the money to state industries for infrastructure; it loans it to contractors who have contracts with the state industries to help build the infrastructure or maintain it. It loans it through private banks to private investors—if the purpose of the loan *serves the national interest*. And the business of the banker and the business of the government agent involved, is to determine responsibly, that this person, who is doing something in the national interest, should have not six legs, but should be a good, solid human being, who's capable of doing what he says he's going to do.

Now, you loan the money on a progress basis. You don't say, "Here's so many rubles," and let someone take it and walk away.

The business, subject to audit, submits its payroll every week. The bank issues the payroll.

Senchagov: How does he give back this credit?

LaRouche: It's like a loan. Also, there is a check on performance.

Senchagov: And what if he doesn't pay back the loan?

LaRouche: Then he's bankrupt. And also, we look critically at the people who made the loan to him.

Yuri Volkov: . . . What do you think about the phenomenon of the poor patient suffering from shock therapy—Russia—being taken for a cure into a ward where transfusions are being given with infected blood from the western banking system? If we take such a poor patient, who's in shock, and put him through such treatment, then we're threatening him with catching the next disease. But what would you personally do if you were the doctor on the ward where they brought somebody who's sick like Russia is sick? From the standpoint of common sense, from the standpoint of physical economy, and from the standpoint of the intuition of a person who has lived as many years as you have in this world.

LaRouche: My statements here are the same I've been making in print in the United States and around the world. I dealt

with this problem in dealing with the Soviet government. I was asked by the Reagan administration to set up a discussion channel with the Soviet government in 1981; I did it in 1982-83. Unfortunately, there were certain people here and certain people in my country as well as Britain who didn't want to do what I proposed.

It was no mystery to me. In 1983—as I explained to a gentleman you know, you can ask him, Yevgeny Shershnev, who was then a diplomat of the Soviet system, I said that if the Soviet government—the Andropov government at that time—were to reject what became known as the SDI [Strategic Defense Initiative], the cooperation I proposed, which Reagan confirmed at least in the initial period, then within about five years the entire Warsaw Pact economic system would collapse from the economic strains of the military policy they had.

In 1988 I stated publicly again, what I felt it was necessary to say: that the collapse was imminent, and what measures should be taken.

Unfortunately, the government of Mrs. Thatcher of Britain prevailed, and they persuaded Georgie-Porgy Bush, as I call him, to adopt her policy.

My policy was that I had been right in 1983, and that the Soviet government had been wrong. But my purpose had not changed.

My purpose had been to unleash new technologies through dealing with the defense problem, to unleash the potential of Russia and other countries together to transform this planet—which is still my policy today, and the policy I recommend to my government.

What happened is, Mrs. Thatcher and other idiots, together, decided that since Russia was down and weak, and a potential adversary, they would do nothing to allow it to survive. It is not just Margaret Thatcher; it is the whole faction of British intelligence which stands behind her, which is the same faction as George Bush in the United States. They both tried to destroy the present President we have, which I hope he will not forget.

What is being done is *a deliberate looting of the former Warsaw Pact territory,* to the purpose of ensuring that it never becomes a world power again.

Foreign finance and privatization should be looked at as the mechanism of sucking the blood of the nation. The problem is, every part of the world is suffering the same problem: Africa, Asia, all of Asia; China has a different kind of problem. South America. The particular problem inside the United States is the same. *We are being sucked to death by a cancer of speculation.* Our answer should be to understand that first; and second, to prepare, in the moment of weakness of the cancer, to cut it out.

If we do not do this on a cooperative basis, there will be blood and chaos on this planet. Therefore, we must act to establish understanding and cooperation among people of good will around the world, to do this.

LaRouche Addresses INION

Russia, do not repeat the West's mistakes

Lyndon LaRouche made this presentation to a seminar at the Institute for Scientific Information on Social Sciences (INION) on April 28. Subheads have been added.

I'm very happy to be here. I have been here for several days, and I have a certain psychological impression of the reaction of a certain stratum of the population of Russia, at least, to a series of catastrophes which to many of you, I think, seems unending: the transition from the sense of being part of a world power, to a nation in great difficulty. I think the psychological attitude toward these developments is extremely important in being able to understand them.

One must not look at these things from underneath, from a sense of inferiority in the face of calamitous events. One must, in a sense, come on top of the events and the processes and thus understand them.

Some years ago—1989—the world industrialized sector exploded at its most vulnerable point, at the point of the Warsaw Pact, Comecon system. It was obvious to me that this would occur, as I had the opportunity to discuss this with some Soviet representatives on an official level back during 1982-83, which was of an official character between the United States and the Soviet governments. My emphasis was that the Soviet system would collapse within five years if the continuing policy were maintained, as part of a collapse of the worldwide economic process.

The basis for that estimation of mine was based largely on Soviet literature—economics literature in particular. It was obvious that the stripping of accumulated capital assets, including nature itself, was reaching a point of collapse. And on the basis of certain elementary calculations based on capital cycles, it was obvious that approximately 1988, plus or minus a year or so, would be the point of collapse.

In critiques of the Soviet system, one should not exaggerate the role of the specifics of the Soviet system in causing the collapse. As you shall all see within a period of months or a year or so to come, the global financial and monetary system of the world will collapse—absolutely. The critique of the Soviet system should be restricted to the discussion and analysis of the reasons why it, among the industrialized countries, was a weak point. And I would say, with all due respect, that the admiration for the so-called western system as depicted in free trade theory, is not only exaggerated, but