FOUNDATIONAL PROBLEMS OF POLITICAL ECONOMY
PART III: MACROECONOMICS FROM THE PERSPECTIVE OF SUSTAINABLE CREATIVITY

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Economic Assumptions

According the positivist-empiricist tradition[2], a theory is a set of generalizations about the behavior of the world, and the real test of a scientific theory is its ability to predict. In other words, for positivism-empiricism, prediction is the true criterion of whether a particular theory is correct or not. Working within the positivist-empiricist tradition, Milton Friedman, the founder of a neoclassical school of economic thought known as the "Chicago school of economics", formulated an instrumentalist explanation of economic assumptions[3]. For Friedman, the theory is an instrument of prediction, and, therefore, the value of a theory is determined by its ability to predict observable phenomena.

Jarrett Leplin[4] extended Friedman's instrumentalism by arguing for scientific realism, i.e. the view that the world described by science is the real world. For Leplin,

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[2] See: C.G. Hempel, *Aspects of Concept Formation in Empirical Science*, Chicago: University of Chicago Press, 1965; Imre Lakatos, "Falsification and the Methodology of Scientific Research Programmes", in I. Lakatos and A. Musgrave (eds), *Criticism and the Growth of Knowledge*, Cambridge: Cambridge University Press, 1970; K.R. Popper, *The Logic of Scientific Discovery*, New York: Harper & Collins, 1959.

[3] Milton Friedman, *Essays in Positive Economics*, Chicago: University of Chicago Press, 1953.

[4] Jarrett Leplin, *Scientific Realism*, Berkeley: University of California Press, 1984.

the best explanation of a theory's ability to provide reliable predictions about a range of phenomena is that its assumptions are objectively true. In contrast to Friedman's and Leplin's epistemological arguments, in Part One, I argued that the world-conception of science is not a 'world' more than it is a 'conception'. Furthermore, in the light of the arguments that I have put forward up to this point, the fact that all nonlinear feedback systems (such as firms, economic sectors, etc.) can be studied in terms of deterministic systems does not imply that economic behavior should be explained in similar ways to natural (i.e. inanimate) behavior.

For instance, every human organization is a deterministic nonlinear feedback system[5] because it is characterized by decision-making rules and by specific interpersonal relations among the people who belong to the same organization or to different organizations; in fact, this is what we mean by the term 'institutional framework'. In any deterministic nonlinear feedback system, actors must necessarily move around nonlinear feedback loops, which are formed by the corresponding institutional framework, and it is exactly for this reason that the system within which actors act is deterministic. On the other hand, every time an actor moves around such a loop, he is free to transform, ignore or even overthrow the given institutional framework, because actors follow decision-making rules and specific models of behavior, but these rules and these models allow freedom of choice, i.e. they are subject to change (this is why, for instance, human history includes business innovations, social revolutions, changes in legislation, changes in morals and customs, etc.). Therefore, on the one hand, economic actors cannot escape from the fact that the interactions among them have the character of a nonlinear feedback system, and they cannot escape from the consequences of this nonlinear feedback either, but, on the other hand, economic actors can, indeed, change the rules and the patterns that govern their behavior on different occasions, in accordance with their intentionality. The consequences that free choice has for the system can be divided into the following three categories:

(i) Stable outcomes: If all economic actors accept a given set of decision rules and make their choices according to these rules, then the whole system will end up in a state of stable equilibrium (i.e. it will exhibit a 'regular' behavior). In this case, the economic system operates on the basis of negative feedback, which underpins the exhibition of regular, predictable behavior.

[5] The feedback loops that are created by people when they interact with each other, i.e. when they form a network, are nonlinear because of the following reasons: (i) in human systems, the actors' choices are based on subjective perceptions which lead to disproportionately big or small reactions; (ii) there are almost always many possible outcomes that can follow an action; (iii) due to the action of structural forces, group behavior is something more than the mere sum of individual behaviors; (iv) outcomes are usually individual; (v) small changes can escalate and lead to outcomes of major significance. Hence, the assumption of nonlinearity is necessary in order to formulate models that can account for the previous five characteristics of human systems. On the other hand, the prevailing models of classical and neoclassical economics are based on linear models. Thus, Daniel Hausman attempted to defend scientific realism in the field of economic theory by arguing that the goal for the economist is to arrive at assumptions that are approximately true (Daniel Hausman, *The Inexact and Separate Science of Economics*, Cambridge: Cambridge University Press, 1992). However, Hausman remains anchored in the conviction of classical and neoclassical economic thought to a deterministic model that underestimates the economic actors' freedom of choice and fails to recognize the dynamic, structural continuity between consciousness and the world.

(ii) Unstable outcomes: When all economic actors continuously change the rules that govern their behavior, then none of them will be able to depend on others, and the whole system will be attracted to a state of unstable equilibrium due to positive feedback. In other words, as the level of conflict ('social entropy') increases in a human system, then this system leaves a state in which it is attracted to stability and moves toward a state in which it is attracted to a behavior of unstable equilibrium. In particular, when 'paradox'[6] becomes the central issue of economic analysis, economic actors are treated as systems out of equilibrium, and their dynamics are characterized by disorder and evolve through political processes[7] according to a dialectic manner[8] and exhibit a series of crises[9].
(iii) The state of sustainable creativity: When a nonlinear feedback system operates in a state characterized by sustainable creativity, then its behavior is simultaneously characterized by stability and instability: it is unstable, in the sense that it does not obey quantitative generalizations, and, hence, long-term predictions are impossible, and it is stable, in the sense that there is an identifiable qualitative structure in this behavior.

As a result of the existence of values, the human being develops the consciousness of existence, since, through values and due to values, the human being is aware that (as opposed to every other biological being) it is not necessarily determined by the 'physical objectivity', but it can control and change the physical conditions of its existence, instead of being pathetically controlled by them.

Which is the cause of action, i.e. the link between the consciousness of action and the object of action? The answer to the previous question is values. As Louis Lavelle[10] has put it, a 'price' is a fact whereas a 'value' is a judgment (an act of the conscious mind). Moreover, according to R. Polin[11], by the term 'value', we should understand the "centre of interest" toward which the conscious mind is directed whenever it is engaged in a practical activity. Hence, values transcend action, and, simultaneously, they are embedded in action, in the sense that values constitute the structure of action, and action confirms the existence of values. Furthermore, a value is the justification of a corresponding price.

Due to values, action is not merely a quantitative issue, but it is also a qualitative one. In other words, values transform quantitative data into qualitative ones, and, therefore, values are the cause due to which human action can overthrow an established order of things and give rise to a new order of things. Human action is necessarily dependent on values, in the sense that values are the necessary underpinnings of human creativity.

As a result, classical rational-choice theory has a fundamental ontological defect: it treats human beings as if they were like units of a social/economic system. In the context of classical rational-choice theory, the 'system' becomes a mechanism that

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[6] See: Charles Hampden-Turner, *Charting the Corporate Mind*, New York: Free Press/ Macmillan, 1990.
[7] See: Andrew Pettigrew, *The Awaking Giant*, Oxford: Blackwell, 1985.
[8] See: R.T. Pascale, *Managing at the Edge: How Successful Companies Use Conflict to Stay Ahead*, London: Viking Press, 1990.
[9] See: Danny Miller, *The Icarus Paradox: How Excellent Organizations Can Bring About Their Own Downfall*, New York: Harper Business, 1990.
[10] Louis Lavelle, *Traité des Valeurs: Théorie Générale de la Valeur*, Paris: PUF, 1951; see also: J.J. Kockelmans (ed.), *Contemporary European Ethics*, New York: Anchor Books, 1972.
[11] See: Kockelmans (ed.), *Contemporary European Ethics*.

obeys its own terms and logic, it leads to the autonomy of economics from the real human needs and expediencies, and, finally, the 'system' is imagined to be an impersonal and ruthless mechanism that is responsible for a series of necessities that frustrate human beings. If we restrict ourselves to the rationality postulate without making any additional assumptions, then we find ourselves on the path to empirically insignificant economic theories. Furthermore, the emphasis that rational choice theory places on the assumption that each actor duplicates the activities of other actors is the ontological cause of the intellectual and moral poverty that characterizes classical and neoclassical political economy. Within the framework of rational choice theory, the 'system' operates as an autonomous and absolute authority, since it imposes its own will by defining the terms of economic development, and it subjugates all political and social procedures to its internal 'logic'. Before anything else, the 'system' establishes the rules of 'economic correctness', i.e. it determines the conditions under which the survival of the economic actors is possible, and the morality of the 'system' is nothing else apart from its internal logic.

On the other hand, the methodical study of the manner in which and the extent to which economic actors exhibit sustainable creativity, as I defined it in Part One, shows that economic reality (like reality in general) is characterized by plasticity, and it is submissive to the intentionality of human consciousness. Therefore, the interpretation of economic reality can be achieved through the experience of the relation between the reality of consciousness and the reality of the economic system. From the perspective of the principle of sustainable creativity, humanistic economics is concerned with the study of the relationship between the economic world as a tank of opportunities and the economic actor's consciousness as a tank of intentions. Hence, the keystone of economic analysis is the economic actors' ability to reconstruct and utilize economic reality according to the four-fold dialectic of sustainable creativity (see Part One).

'Classical Unemployment'

According to this assumption, unemployment results from too high real wages. In other words, workers are unemployed because real wages are too high. Therefore, according to this assumption, if workers work harder and go on strike less often, then productivity will be increased, and increased productivity will increase the international competitiveness of the given country's economy, and, therefore, finally, more jobs will be created and the Gross Domestic Product per capita will rise.

The previous analysis is partially true. A more careful inquiry into the notion of productivity indicates that productivity has very little to do with recipes for harder work or lower real wages. Harder work and cuts in real wages cannot by themselves cause a significant increase in productivity. Significant increases in productivity can be achieved through organizational improvement and technological progress. Thus, low productivity is primarily due to poor management and narrow-minded approaches to economics.

Laissez-faire Capitalism and the Problem of Unemployment

Early classical economists were of course aware of business cycles, but they viewed these as temporary and self-correcting. Their analysis was based on the

reasoning that underpins 'Say's law of markets'. In 1803, the French economist and businessman Jean-Baptiste Say formulated the so-called Say's law of markets, according to which overproduction is impossible by its very nature. In James Mill's *Commerce Defended* (1808), Say's law of market is expressly set forth as follows: "The production of commodities creates, and is the one and universal cause that creates a market for the commodities produced"[12]. According to John Maynard Keynes, the essence of Say's law of markets is that "supply creates its own demand in the sense that the aggregate demand price is equal to the aggregate supply price for all levels of output and employment"[13].

Many distinguished economists, such as D. Ricardo, J.S. Mill, A. Marshall and A.C. Pigou, subscribed to the classical macroeconomic view that overproduction is impossible. In particular, Pigou has put forward the following argument:

> With perfectly free competition there will always be a strong tendency toward full employment. Such unemployment as exists at any time is due wholly to the fictional resistances [that] prevent the appropriate wage and price adjustments being made instantaneously.[14]

P.A. Samuelson and W.D. Nordhaus have explained the rationale behind this classical view as follows:

> wages and prices are sufficiently flexible that markets will 'clear', or return to equilibrium, very quickly. If prices and wages adjust rapidly, then the short-run in which prices are sticky will be so short that it can be neglected for all practical purposes. The classical macroeconomics conclude that the economy always operates at full employment or at its potential output . . . Macroeconomic aggregate demand policies cannot influence the level of unemployment and output. Rather, monetary and fiscal policies can affect only the economy's price level, along with the composition of the real GNP . . . At the heart of the classical view is the belief that prices and wages are flexible and that price flexibility provides a self-correcting mechanism that quickly restores full employment and always maintains potential output.[15]

On the other hand, historical experience has proved that the previous classical view is wrong. For instance, during the Great Depression, when a quarter of the American labor force was unemployed, classical macroeconomics were unable to explain the situation: a vast number of workers was unemployed for a long period of time even though wages and prices were flexible, and, in fact, unemployed workers were begging for work and selling pencils on street corners. Indeed, a laissez-faire policy may need more time to correct the problem of unemployment and can be successful in the long run, by leading to the emergence of new industries and jobs, but, if it

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[12] James Mill, *Commerce Defended*, Gloucester: Dodo Press, 2008 (originally published in 1808), chapter VI: Consumption.

[13] J.M. Keynes, *The General Theory of Employment, Interest and Money*, London: Macmillan, 2007 (originally published in 1936), chapter 2, section VII

[14] A.C. Pigou, *The Theory of Unemployment*, New York: A.M. Kelley, 1968 (originally published in 1933).

[15] P.A. Samuelson and W.D. Nordhaus, *Economics*, 14th edition, New York: McGraw-Hill, 1992, p. 465, 466.

allows unemployment to rise at high levels, then, in social, psychological and political terms, it becomes extremely risky[16].

Keynesian Economics and the Problem of Unemployment

In contrast to the assumptions of classical economics, Keynes's *General Theory* argued that prices and wages are inflexible or sticky, and, therefore, at least in the short-run, the economy may not automatically cure itself of recessionary gap, i.e. it may not be self-regulating. In particular, Keynes argued that employees will naturally resist employers' efforts to cut wages and, in general, labor unions may resist wage cuts; hence, wages may be inflexible in a downward direction. In addition, Keynes argued that, as a result of the existence of anti-competitive or monopolistic forces, the internal structure of an economy is not necessarily competitive enough to allow prices to adjust according to the assumptions of the classical economists. Thus, "Keynes emphasized that because wages and prices are inflexible", "there is no self-correcting mechanism", and, therefore, "a nation could remain in its low-output, high-misery condition for a long time"[17].

At this point, it must be mentioned that so-called 'New Keynesian economists' have argued that the inflexibility of wages is primarily due to solid microeconomic reasons, in the sense that labor productivity depends on the wage rate that the firm pays its employees, and, therefore, a cut in wages can cause labor productivity to decline, which, in turn, raises the firm's costs.

Furthermore, in contrast to Say's law, Keynes argued that added saving will not necessarily stimulate an equal amount of added investment spending[18]. In particular, Keynes argued that individuals save and invest for a host of reasons, and, therefore, no single factor, such as interest rate, determines the relation between these activities. Hence, for Keynes, if, at a given price level, total spending falls, so will aggregate demand; i.e. saving could increase and aggregate demand could fall. Additionally, Keynes argued that saving is more responsive to changes in income than to changes in the interest rate and that investment is more responsive to technological changes, business expectations and innovations than to changes in the interest rate.

As a result of his previous observations, Keynes proposed a new model of economic policy, which can be summarized as follows:

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[16] See: A.W. Clark, "The Effects of Unemployment on Political Attitude", *Journal of Sociology*, Vol. 21, 1985, p. 100–08; N.T. Feather, *The psychological Impact of Unemployment*, New York: Springer-Verlag, 1990; David Fryer and Philip Ullah (eds), *Unemployed People: Social and Psychological Perspectives*, Milton Keynes: Open University Press, 1987; Catherine Hakim, "The Social Consequences of High Unemployment", *Journal of Social Policy*, Vol. 11, 1982, p. 433–67; Marie Jahoda, *Employment and Unemployment: A Social-Psychological Analysis*, Cambridge: Cambridge University Press, 1982.

[17] Samuelson and Nordhaus, *Economics*, p. 466.

[18] According to Say's law, if consumption spending falls because saving increases, then total spending will not fall because the added saving will cause an increase in investment spending through changes in the interest rate. In particular, according to classical macroeconomic analysis, the added saving will cause a reduction in the interest rate, and, at a lower interest rate, businesses will borrow and invest more. Hence, from this viewpoint, through changes in the interest rate, the amount of saving will always be equal to the amount invested.

> through monetary or fiscal policies, the government can stimulate the economy and help maintain high levels of output and employment . . . These policies might increase aggregate demand in periods of slow economic activity or curb spending in periods of boom with threatening inflation. The Keynesian economist might argue that government spending crowds out[19] nothing at all because higher government spending increases output and allows private spending to continue. In essence, when the government takes a larger slice out of the pie, the pie actually becomes larger. Government spending, tax cuts, or more rapid money growth—all create more output and thus stimulate investment.[20]

However, Keynes's theory contains the following three major fallacies:

(i) In his general theory, Keynes has specified the direction in which his monetary and fiscal policies are likely to work, but he has not made predictions about their precise outcome and the time-lags involved. In fact, the precise outcomes of Keynesian monetary and fiscal policies and the time-lags involved are uncertain because private investment is greatly dependent on uncertain psychological and cultural factors (i.e. on the moods and cultural characteristics of the investors) and because the balance of trade (exports minus imports) is largely dependent on external factors.

(ii) Not all unemployment is 'cyclical'[21], i.e. not all unemployment is caused by demand deficiency. Unemployment may be 'structural'—namely, unemployment may be caused not by lack of demand, but by changes in demand patterns or obsolescence of technology. If most of the unemployment is structural, then the correction of the problem of unemployment requires retraining of workers and large investment in new capital equipment. Moreover, if most of the unemployment is structural, then most of the increase in spending is absorbed into price increases (thus causing 'demand-pull inflation') rather than generating greater real output[22].

(iii) Keynesianism is focused on the problem of unemployment—which was the great economic plague of his era—but, after the 1950s, governments have become increasingly concerned not only with the stabilization of a high employment level but also with the stabilization of prices and the balance of payments. Moreover, the increasing internationalization of trade undermines the effectiveness of Keynesianism: expansion of demand in order to lower unemployment may lead to a

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[19] "Classical economists would worry about government spending crowding out private production. By 'crowding out', they mean that, when the government increases its spending, production on private goods will be displaced"; see: Samuelson and Nordhaus, *Economics*, p. 467.

[20] Samuelson and Nordhaus, *Economics*, p. 466, 477.

[21] Cyclical or Keynesian unemployment is a situation in which there are unemployed workers not because there is inadequate capital equipment for them to combine with, but because there is not enough aggregate demand in the economy to absorb the output which could be produced.

[22] In September 1976, in the U.K., a Labor Prime Minister, Jim Callaghan, told his party conference: "We used to think you could spend your way out of a recession and increase employment by cutting taxes and boosting government spending. I tell you in all candour that the option no longer exists and that in so far as it did ever exist, it only worked by injecting inflation into the economy. And each time that happened, the average level of unemployment has risen. Higher inflation followed by higher unemployment. That is the history of the last twenty years".

faster expansion of imports than exports, and, therefore, it may lead to a deterioration of the balance of payments, to which governments may respond by reducing taxation (and public spending) or by raising interest rates.

Monetarism and the Problem of Unemployment

According to monetarism, which was founded by Milton Friedman, unemployment is mainly due to the following factors: (i) low competitiveness of the economy, (ii) overvalued products, and (iii) the undermining of entrepreneurship by inflation, high taxation and excessive government spending. Hence, monetarists try to correct the problem of unemployment by eliminating non-productive economic organizations, reducing inflation and taxation (in conjunction with reducing government spending), and creating a business environment that encourages entrepreneurship, thus leading to the creation of new business activities, which will increase employment.

How do monetarists believe that the previous sequence of events will be achieved? The answer that they give is that the volume of money must be reduced and, thus, its value must rise. Let us give an example. Assume that the Fed allows the interest rate to rise and generally follows a tough and credible monetary policy, so that the value of U.S. dollar rises. This event will increase the purchasing power of the U.S. dollar abroad, and, therefore, imports will become cheaper to Americans and they will buy more from foreigners. This event, in turn, will cause a reduction in inflation. Simultaneously, the increase in interest rates will reduce both borrowing and consumption. Furthermore, as the value of the dollar rises[23], American export prices increase. Hence, inefficient producers in the U.S. will be faced with a double threat: reduced foreign demand for their products and increased competition in the domestic market, since imports become cheaper. Unless inefficient U.S. companies manage to improve their efficiency, they will have to shut down their production. Monetarists argue that, in order to reduce inflation, the government must reduce its spending and increase the interest rate. A decrease in government spending increases competition in the domestic economy, and an increase in interest rates makes it even more difficult for companies that have liquidity problems to survive under increasing competition.

In principle, the previous monetarist approach is logically sound. On the other hand, in practice, it is only partially true, because some of its assumptions are wrong. The biggest defect of monetarism is its inability to distinguish between the total economic system and the circulation of money as a subsystem of the total economic system. This conceptual weakness of monetarism leads to two major problems:

(i) First, the effectiveness of monetarist policies is lower than their advocates have hoped, because the monetary system is not a closed national system. The first internationally acclaimed book on international political economy, Spero's *Politics of International Economic Relations*[24], focused on OECD interdependence, East–West

[23] A currency offering a high interest rate often attracts buying of that currency, and therefore the exchange rate on that currency rises. For instance, a significant rise in the dollar "began in 1980 after a tight monetary policy and loose fiscal policy in the U.S., drove interest rates up sharply. High interest rates, a conservative administration in the United States, and a cut in the U.S. tax rates attracted mobile funds from other currencies to U.S. dollars"; see: Samuelson and Nordhaus, *Economics*, p. 717.

[24] Joan Spero, *The Politics of International Economic Relations*, London: Allen and Unwin, and New York: St Martin's Press, 1990.

interdependence and southern dependence on the north. Samuelson and Nordhaus have made the following observations:

> In a world where economies are increasingly linked by trade and capital flows, interdependence is unavoidable. No walls can prevent domestic actions from spilling over territorial boundaries. National strengths can be leveraged in global marketplace, while national weaknesses fall prey to intense foreign competitors . . . All this means that exchange with other nations is an integral part of domestic economic welfare.[25]

Furthermore, the rapid globalization of the international economy (especially in the areas of production and finance) and the changing nature of the interstate system in the post-Cold War era contribute to the emergence of a 'global' (as opposed to 'international') political economy. According to R. Cox, global political economy refers to "an economic space transcending all country borders, which co-exists still with an international economy based on transactions across country borders and which is regulated by inter-state agreements and practices"[26]. Thus, global political economy identifies three different levels of economic space—namely, supra-regional, national and sub-regional—and at least three different levels of social organization—namely, social forces, states (national societies) and global society[27].
(ii) An increase in the cost of capital may have very negative consequences for new companies in the initial phase of their operation, and, therefore, it may undermine productivity and inhibit the creation of new jobs. In the short-run, an increase in the cost of capital reduces inflation. But, if it is allowed to destroy new companies and to undermine future productivity, then it may generate phenomena of inefficiency and inflationary pressures. This means that the application of strict monetarist policies may cause serious recession, either because these policies are extremely rigid or because the application of such policies lacks discretion. In other words, a major mistake of many monetarist economic stabilization programs is that they are characterized by a narrow focus on spending cuts, as if all spending is equal. This is wrong. Some spending goes to legitimate purposes and some goes to activities that are inefficient and undermine employment. Economic stabilization programs should be characterized by discretion, cutting the spending that goes directly to inefficient and job-killing activities. Monetarism is catastrophic and self-defeating if it is viewed as a dogma and not as a tool used according to the dialectic of sustainable creativity.

Protectionism and the Problem of Unemployment

An alternative approach to the problem of unemployment is based on protectionism. First of all, temporary tariff protection for an 'infant industry' with growth potential may be an efficient policy. In his famous *Report on Manufacturers* (1791), Alexander Hamilton had argued that the growth of manufacturing should be encouraged by protecting youthful industries from foreign competition. The rationale

[25] Samuelson and Nordhaus, *Economics*, p. 721–22.
[26] Robert Cox, "Structural Issues of Global Governance: Implications for Europe", in S. Gill (ed.), *Gramsci, Historical Materialism and International Relations*, Cambridge: Cambridge University Press, 1993, p. 259–89.
[27] Ibid.

of this protectionist policy, which has been cautiously supported by several free-market economists, like John Stuart Mill and Alfred Marshall, is that there are lines of production in which a country could have comparative advantage if only they were given the adequate opportunity to get started. History indicates that there are cases of infant industries that, after a period of tariff protection, grew up to stand on their own feet and that newly industrialized countries, such as Singapore and South Korea, have often protected their manufacturing industries from imports during the initial phase of industrialization. On the other hand, history indicates that there are also contrary cases in which infant industries were protected for long periods of time but they did not grow up to stand on their own feet[28]. Hence, the policy of protecting infant industries from imports must be applied according to the dialectic of sustainable creativity.

Furthermore, protectionism often takes the form of retaliatory tariffs. The essence of this argument is "mutual trade": even though a country may agree that free trade is the best of all possible trade systems, it is justified to retaliate when a foreign country raises tariffs. This rationale was endorsed by the U.S. government in 1982 (in the Economic Report of the President):

> Intervention in international trade . . . even though costly to the U.S. economy in the short-run, may, however, be justified if it serves the strategic purpose of increasing the cost of interventionist policies by foreign governments. Thus, there is a potential role for carefully targeted measures . . . aimed at convincing other countries to reduce their trade distortions.

This argument should be used only within the framework of the dialectic of sustainable creativity. If it is not used according to the dialectic of sustainable creativity, then retaliatory tariffs can trigger trade wars. On the other hand, if the policy of retaliatory tariffs is applied according to the dialectic of sustainable creativity, then it can prevent the emergence of a mercantilist world of unilateral decisions and bilateral agreements.

Insufficient Economic Assumptions and the Problem of Inflation

Arthur M. Okun has argued that "the task of combining prosperity with price stability now stands as the major unsolved problem of aggregate economic performance"[29]. Both monetarism and 'orthodox' Keynesianism are based on Irving Fisher's 'equation[30] of exchange':

$MV = PQ$

where M is the quantity of money, V is the velocity of the circulation of money (i.e. the amount of nominal Gross National Product each year divided by the money stock), P is the price level, and Q is aggregate output (thus, Gross National Product = PQ). According to Fisher, if both V and Q are constant, then a change in the money supply, M, results in an equal percentage change in the price level P.

The previous equation implies that

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[28] See for instance: Samuelson and Nordhaus, *Economics*.
[29] A.M. Okun, *The Political Economy of Prosperity*, New York: Norton, 1970, p. 130.
[30] In fact, it is an identity.

$M = PQ/V$.
Since V is constant, 1/V can be replaced by a constant k. Additionally, when the money market is in equilibrium, the demand for money, D is equal to M. Hence,
$D = kPQ$,
which means that, according to Fisher's model, the demand for money is a function of income and does not depend on interest rates.

However, in practice, the velocity of the circulation of money, V, is not constant, even in the short-run, and especially during periods of recession. In fact, Keynes extended Fisher's equation of exchange by pointing out there are three motives of holding money: (i) Transactions motive: money is a medium of exchange, and, as income rises, people have more transactions and hold more money. (ii) Precautionary motive: people hold money for emergencies, and money demand is again expected to rise with income. (iii) Speculative motive: money is also a way for people to store wealth, and, under the speculative motive, the demand for money is negatively related to the interest rate. Moreover, Keynes modeled the demand for money as the demand for the real (as opposed to the nominal) quantity of money (real balances), M/P. According to Keynes, the demand for real money balances is a function of both income and interest rates:
$D = M/P = f(Q, i)$,
where Q is output or income and i is the interest rate (thus, according to Keynes, the velocity of the circulation of money fluctuates with the interest rate).

Milton Friedman[31], the founder of monetarism, restated Fisher's equation of exchange by arguing that, in the long run, output is determined only by real (non-monetary) factors, and the velocity of the circulation of money is stable. Hence, from the standpoint of monetarism, Fisher's equation of exchange implies that control of the money supply provides a tool against inflation.

Fisher's equation of exchange, which plays a major role in both Keynesianism and monetarism, has an important defect—namely, it assumes that the monetary system is a closed national system. This assumption is wrong. Monetary policy influences short-run national output if prices are sticky or if portfolio choices are not instantaneous, but it also affects output in other countries. For instance, in the Mundell-Fleming model, a monetary expansion in a foreign country reduces that country's real interest rate, depreciates its currency relative to others, raises import prices and raises inflation and output. But other countries are affected by this policy, too, because their currencies appreciate relative to the foreign country (if, of course, they do not match the foreign country's monetary policy), thereby reducing import prices and inflation and possibly decreasing output[32].

In general, international capital mobility limits the effectiveness of monetary policy. For instance, any increase in aggregate demand caused by a reduction in domestic interest rates is partially dissipated in increased expenditures on imported goods financed by international capital flows. Furthermore, as it has been shown by Frenkel and Mussa[33], exchange rate adjustments that occur rapidly in response to perceived changes in monetary policy tend to lead to rapid adjustments of domestic

[31] Milton Friedman (ed.), *Studies in the Quantity Theory of Money*, Chicago: University of Chicago Press, 1956.
[32] Robert Mundell, "Notes on the History of the Mundell-Fleming Model: Keynote Speech", *Staff Papers, International Monetary Fund*, Vol. 47 (Special Issue), 2001, p. 215–27.
[33] J.A. Frenkel and M.L. Mussa, "Monetary and Fiscal Policies in an Open Economy", *American Economic Review*, Vol. 71, 1981, p. 253–58.

prices and wages, thereby limiting the effect of monetary policy on output and employment.

Therefore, there is only one effective long-term cure for inflation: following the dialectic of sustainable creativity, the economist must find the limiting factor or the limiting factors and devise ways to counter the negative consequences of inflation by increasing productivity or by finding substitute goods/services.

Growth Theory

The sustainable creativity of human consciousness is the most important factor of production, because it extends the ability of the conventional factors of production—i.e. labor, capital and land—to produce wealth. Moreover, when economic actors act according to the dialectic of sustainable creativity, they increase the quantity of final goods, and these goods, in turn, underpin the economic actors' sustainable creativity.

The growth model that has been formulated by the classical economists is based on the principle of the scarcity of resources, and it has the tendency to imprison economic thought in a 'given' economic reality: "goods are scarce because there are not enough resources to produce all the goods that people want to consume. All of economics flows from this central fact"[34]. However, the principle of sustainable creativity, as I defined it in Part One, shows that economic reality is not a 'given', but, ultimately, it is created by the intentionality of human consciousness. Thus, we need a new growth theory—one that will comply with the principle of sustainable creativity.

The growth theory that I present in this section shows the manner in which sustainable creativity reduces scarcity to satisfy human needs and desires. First, I shall review the main features of the classical growth model. The conception of labor that dominates classical economics is intimately related to the notion of physical labor. Physical labor extracts economic goods from resources and requires energy, i.e. food. An economy that is based only on physical labor operates according to the following empirical principle: the quantity of food produced in a working day is equal to the quantity of food the labor force consumes to be able to work along the day. According to this principle, the notion of 'exploitation' is equivalent to the notion of 'profit': for instance, assume that a worker needs 10 units of food to carry out 1 day of work (so that he can reconstitute his working strength) and that he produces 10 units of food in a working day; then, to get a profit, one must pay this worker with a salary less than 10 units of food.

Moreover, for classical economists, a tool is merely a quantity of labor integrated in an object[35]. Marx calls it "dead labor". "Capital is dead labor", Marx writes, "that, vampire-like, only lives by sucking living labor, and lives the more, the more labor it sucks"[36]. Tools always require labor to be constructed. For example, assume that a

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[34] Samuelson and Nordhaus, *Economics*, p. 8.

[35] In the 15th chapter of the first volume of K. Marx's book *The Capital*, Marx studies machinery and large-scale industry, and, after stating that "a tool [is] a simple machine and a machine a complex tool", he argues that only labor power, which is bought by capitalists, can create new value and that the machine accumulates value from the labor, which went into producing it, and it merely transfers its value into the product it is producing.

[36] Karl Marx, *The Capital*, New York: International Publishers, 1987, Vol. 1, p. 224 (originally published in 1867).

worker needs 10 working days to construct a tool. According to the labor theory of value[37], any tool can provide an output of goods equal to the dead labor that is integrated into it. Thus, in the previous example, the given tool can only produce an output of goods equivalent to 10 working days. Moreover, if, as we assumed earlier, a working day produces 10 units of food, then the given tool will produce 100 units of food.

According to the classical growth model, which I have just reviewed, growth is explained as follows: Growth results in first by adding more labor to increase output. But, since resources are limited, labor suffers diminishing returns. As population grows, output decreases, despite the fact that the input of labor increases[38]. Capital (tools and machines) is mainly conceived as dead labor, and it cannot be exploited like active labor. According to Marx's law of decreasing profits, capitalists compete for introducing new machinery in order to gain as much profit as possible, and, therefore, because of excessive accumulation of capital, profit is gradually reduced[39]. As a conclusion, according to the classical growth model, growth is determined by the production possibility frontier[40] (efficiency implies that the economy is on its production-possibility frontier). Within this framework of analysis, growth necessarily stops when the marginal revenue product[41] equals marginal factor cost[42].

However, the above-mentioned classical model of economic growth, by remaining intellectually anchored in the scarcity of resources, cannot really explain economic growth. Various studies that follow the techniques of growth accounting have broken down the growth of GNP in the private business sector into its contributing factors and they have shown that the contribution of education and technological change to output growth is bigger than the contribution of capital. For instance, Robert Solow[43] has found that, in the United States, during the period 1909–49, about one-eighth of the increment in labor productivity could be attributed to increased capital per man

[37] "An economy in which prices are determined by the amount of labor that goes into the production of each commodity is governed by the labor theory of value. In an economy such as Smith described, average labor cost would determine price no matter how many goods there were"; see: Samuelson and Nordhaus, *Economics*, p. 548.

[38] "The classical models of Smith and Malthus describe economic development in terms of fixed land and growing population. In the absence of technological change, increasing population ultimately exhausts the supply of free land. The resulting increase in population density triggers the law of diminishing returns. With less and less land to work, each new worker adds less and less extra product; as a result, competitive wages fall while land rents go up"; see: Ibid, p. 563.

[39] "In the beginning, there is a gradual increase of the amount of capital per worker, or 'capital deepening'. In the absence of technological change and innovation, an increase in capital per worker would not be matched by a proportional increase in output per worker because of diminishing returns. Hence, capital deepening would lower the rate of return on capital (equal to the real interest rate under risk-free competition)"; see: Ibid, p. 563.

[40] "The production-possibility frontier (or PPF) shows the maximum amounts of production that can be obtained by an economy, given the technological knowledge and quantity of inputs available. The PPF represents the menu of choices available to society"; see: Ibid, p. 22.

[41] Marginal revenue product is the additional revenue generated by the employment or use of an extra variable input.

[42] Marginal factor cost is the additional cost incurred by employing or using an additional factor unit.

[43] R.M. Solow, "Technical Change and the Aggregate Production Function", *Review of Economics and Statistics*, Vol. 39, 1957, p. 312–20.

hour, and the remaining seven-eighths to a factor that is called "Solow residual" and consists of technological progress and other cultural factors that improve efficiency. Edward F. Denison[44] has studied the contribution of different elements to growth in real GNP in the United States during the period 1929–82, and he has shown that advances in knowledge, education and other cultural-institutional factors play the most important role in economic growth, as displayed in the following table.

Relative contributions to U.S. growth, 1929-1982:		
	Percent contribution to total growth of 2.9% per year on average	*Percent contribution to per-person growth of 1.5% per year on average*
Source		
Labor input except education	32	-12
Education per worker	14	27
Capital	19	20
Advances in knowledge	20	38
Improved resource allocation	8	16
Economies of scale	9	18
Land	0	-3
Changes in legal and human environment	-1	-3

In general, we realize that sustainable creativity increases the quantity of goods produced by labor and capital because it integrates ideas in labor and capital. For instance, in the 19th century, application of the Frank B. Gilbreth system of motion analysis in bricklaying reduced the motions per brick from 18 to 5 and increased the number of bricks laid per hour from 125 to 350; thus, this system has helped U.S. labor compete with other countries which have lower pay scales. This is an example that shows that the integration of ideas in labor is the sole reason for the increase in production. Moreover, the integration of ideas in capital (tools and machines) multiplies production. For instance, Frederick W. Taylor, in his study of the "science of shovelling", found that the optimal weight that a worker should lift in a shovel was 21 pounds, and, therefore, the shovel should be sized so that it would hold 21 pounds of the substance being shovelled; the firm provided the workers with optimal shovels, and the results were a three to four fold increase in productivity and pay increases for the workers.

Classical political economy is focused on the principle that resources are limited and leads to the conclusion that we should expect a 'limit to growth'. In 1972, the Club of Rome published a book entitled *The Limits to Growth*[45] (written by Donella H. Meadows, Dennis L. Meadows, J. Randers and W.W. Behrens III), according to which, within a time span of less than 100 years with no major change in the physical, economic, or social relations that have traditionally governed world development, society will run out of the non-renewable resources on which the industrial economy depends. However, the sustainable creativity of human consciousness can rearrange the resources and create an additional resource base.

Even if resources are limited, the sustainable creativity of human consciousness enables us to get more from the existing resources by transforming-rearranging them.

[44] E.F. Denison, *Trends in American Economic Growth*, 1929-1982, Washington, DC: Brookings, 1985; E.F. Denison, *Multifactor Productivity Measures*, 1988 and 1989, U.S. Department of Labor, March 1991.

[45] D.H. Meadows et al., *The Limits to Growth*, New York: University Books, 1972.

Energy transitions from wood to coal, and from coal to oil/gas, and from oil/gas to nuclear fusion provide important examples of the contribution of the sustainable creativity of human consciousness to economic growth. Paul M. Romer, an American economist and entrepreneur, associated with the New York University Stern School of Business and with Stanford University, has wisely argued as follows:

> Economic growth occurs whenever people take resources and rearrange them in ways that are more valuable. A useful metaphor for production in an economy comes from the kitchen. To create valuable final products, we mix inexpensive ingredients together according to a recipe. The cooking one can do is limited by the supply of ingredients, and most cooking in the economy produces undesirable side effects. If economic growth could be achieved only by doing more and more of the same kind of cooking, we would eventually run out of raw materials and suffer from unacceptable levels of pollution and nuisance. History teaches us, however, that economic growth springs from better recipes, not just from more cooking. New recipes generally produce fewer unpleasant side effects and generate more economic value per unit of raw material . . . Every generation has perceived the limits to growth that finite resources and undesirable side effects would pose if no new recipes or ideas were discovered. And every generation has underestimated the potential for finding new recipes and ideas. We consistently fail to grasp how many ideas remain to be discovered. Possibilities do not add up. They multiply.[46]

In fact, the most important source of change and progress is the sustainable creativity of human consciousness. The sustainable creativity of human consciousness can create an additional resource base, since science and technology enable us to create a practically unlimited artificial resource base. Additionally, Alvin Toffler has made the following observations:

> As service and information sectors grow in the advanced economies, as manufacturing itself is computerized, the nature of wealth necessarily changes. While investors in backward sectors of industry still regard the traditional 'hard assets'—plant, equipment, and inventories—as critical, investors in the fastest growing, most advanced sectors rely on radically different factors to back their investments. No one buys a share of Apple Computer or IBM stock because of the firm's material assets. What counts are not the company's buildings or machines but the contacts and power of its marketing and sales force, the organizational capacity of its management, and the ideas crackling inside the heads of its employees . . . The shift to this new form of capital explodes the assumptions that underpin both Marxist ideology and classical economics.[47]

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[46] P.M. Romer, "Compound Rates of Growth"; in:
http://www.econlib.org/library/Enc/EconomicGrowth.html
Additionally, see: P.M. Romer, "Endogenous Technological Change", *Journal of Political Economy*, Vol. 98, 1990, p. 71–102.

[47] Alvin Toffler, *Powershift: Knowledge, Wealth and Violence at the Edge of the 21st Century*, New York: Bantam Books, 1991, p. 73.

If growth theory is founded on the dialectic of sustainable creativity, then it combines the notion of sustainable development[48] with the notion of unlimited growth. 'Sustainability' invites us to be aware of our environmental conditions and act as morally responsible beings in order to preserve life. However, sustainability should not lead us to the assumption that there are any given, or necessary 'limits to growth'. If humanity's intervention in the reality of the economic system is guided by the principle of sustainable creativity, then there is not a single optimum point for environmental management and economic growth, but there are several, arguably infinitely many, such optimal points, since the creativity of the human mind is unlimited, and economic actors act in order to restructure and utilize the reality of the economic system in the most favorable manner.

Above: images from Dr. Nicolas Laos's lecture on noopolitics, its rudiments and ramifications, at the roof garden of the Hellenic American Union, in Athens, Greece, October 31, 2018

[48] United Nations, *Report of the World Commission on Environment and Development*, General Assembly Resolution 42/187, December 11, 1987.