

THE PRESENT WORLD ECONOMIC IMPASSE AND HAYEKIAN INTERPRETATION OF COEXISTENCE OF INFLATION AND UNEMPLOYMENT

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1. The Background of the Present Policy Crisis

In dealing with recession, aggressive policy measures tend to induce inflation. On the other hand, austere measures tend to worsen stagnant economic conditions. Every country in the world today is facing the dilemma of the coexistence of inflation and unemployment. The difference between the bullish and bearish views of economists has been shrinking steadily. Bullish views have recently lost their power and confidence. Although this reflects the present global economic conditions, it is high time to probe deeply into how we have been driven into this quagmire.

It looks as though economists, including the Keynesians of course, have run out of appropriate policy measures. In the face of the policy crisis, we are reminded of the Hayekian business cycle theory that prevailed even before the Keynesian Revolution. Put in a nutshell, this theory argues that the excesses of investment (relative to savings) generated by credit creation tend to induce "unbalanced expansion" centered around the investment goods sector. This results in "inflationary growth." Correction of the resulting "sectoral imbalance" (between the investment and consumption sectors) requires deflationary adjustment processes that take place after the investment boom.

According to Hayek, policy efforts to overcome the deflationary process by stimulating effective demand tend to enlarge the economic or sectoral imbalance and eventually require more drastic policy measures to delay the ills. Therefore, if one wants to be faithful to Hayek's theory, non-policy is in this case the only policy. Ironically, Hayek's theory can be said to have anticipated the crisis resulting from following Keynesian policy measures. However, as we accept that the policy

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preference of present-day society is to avoid excessive (say, double digit) inflation, the very efforts taken to avoid deflation tend to create the conditions for the "coexistence of inflation and unemployment." Once the economy steps into this quagmire, however, the effectiveness of Keynesian aggregate demand management becomes highly limited, and policy crises naturally occur.¹

Some economists consider the "coexistence of inflation and unemployment" unexplainable, and, thus, refrain from commenting on it. Monetarists and Keynesians, however, claim that theoretical consistency can be maintained on the basis of the "superficial" evidence that the supply curve (or its variant, the Phillips curve) shifts upward in this case as an explanation.

However, once one pursues the questions why the upward shift of the supply curve took place so appreciably after 1970, we are naturally led back to Hayek's theory for an explanation. The causes behind the supply curve shift can be explored by studying the "process of changes" defined by Hayek. But recent arguments have tended to avoid this route and simply accept the "superficial" evidence as an explanation in itself.

If one accepts Hayek's premise that the economy starts from the neighborhood of full employment and progresses through "unbalanced expansion" and "inflationary growth," then the misdirection of labor and other resources, and the sectoral imbalance will necessarily arise. Once this process begins, adoption of policy measures to reduce inflation from, say, 15 per cent to 10 per cent will cause unemployment to rise all of a sudden. In this case, ironically, unemployment rises even under a continuing state of inflation.

The unemployment thus generated is not of the Keynesian type that can be absorbed by an increase in effective demand. This unemployment has been generated during the course of a considerable length of time, while the transfer of limited resources from the investment goods sector has been overly expanded relative to consumption. This is not Keynesian unemployment, nor the classical static, temporary frictional unemployment. Rather, this is a result of unbalanced expansion over a longer period due to the dynamism inherent in the

¹Having stated the present controversies this way poses for the author a very difficult task. I feel that I am very familiar with Hayek's methodology and thinking, since my Bachelor's (of Art) thesis "Modern Theories of Economic Development" centered around the theme of "Hayek and Keynes" more than four decades ago. However, it is safe to say that modern economists are strongly allergic to Hayek's theory due to the overwhelming influence of the Keynesian Revolution in the 30 years since World War II. Others have avoided it as an antiquated, prehistoric relic, thus not feeling anything against it. It is quite understandable then that a large number of scholars after the War ignore him completely. I have known this as a matter of fact. I therefore feel that under these circumstances, it takes great effort and much difficulty to persuade a large number of readers with the views in this short paper.

economy itself, for instance in the ten-year duration after the first oil shock.

We now turn in the following sections to more details about Hayek's theory.

The Essence of Hayek's Theory

When I talk about Hayek's theory, I would like to focus on his business cycle (capital) theory rather than his "ideology" or "philosophy." Therefore, I am concerned with the question of how appropriate his business cycle theory is for understanding the present status of the world economy.

In the first place, I would like to emphasize that his theory is simplistic because he deals only with two sectors, investment and consumption. When he wrote *Prices and Production* (1931), triangular diagrams were used, as shown in Figure 1. This illustration caused many arguments because it ignored "fixed capital." For this reason, he modified and expanded his argument in *Profits, Interest and Investment* (1939) and *The Pure Theory of Capital* (1941). However, I believe his thinking remained fundamentally unchanged. My understanding of Hayek's model is as follows:

He starts from an assumption of full employment. He does not strongly recognize the role of technological progress in overcoming this constraint. This may be understandable since Hayek had a pre-World War II image of the economy, when technological progress was not as rapid as after the war. In this sense, Hayek's full employment assumption seems to be almost identical to assuming the present-day resource and energy situation, since it is exceedingly difficult to overcome this constraint even in the intermediate term of ten years at present.

In the postwar process of expansion up until about 1965, an increase in consumption induced investment, which in turn induced consumption, etc. Moreover, as positive net investment continued to increase productive capacity, growth without inflation occurred. This is the case of a "plus sum" game. On the other hand, in an economy where resources are limited and the rate of technological progress has slowed down, a trade-off takes place whereby investment (or consumption) must be reduced in order to increase consumption (or investment), and vice versa. Since the size of the pie is almost fixed, the case of "zero sum" game arises. It is a "plus sum" process with the economy expanding in "real terms" through mutual interaction of the multiplier principle and the acceleration principle that the Keynesians assumed

in their analysis. However, under Hayek's assumptions, this process eventually comes to a grinding halt.

If the basic condition of the economy is "zero sum," issuance of government bonds then competes with private investment and "crowding out" takes place. Thus, the issuance of government bonds induces high interest rates under Hayek's assumptions. Contrarily, the process in which private investment increases, along with issuance of government bonds, without causing inflation can be considered a "plus sum" Keynesian process.

In the Keynesian case, as the demand for consumption goods increases, the outputs of intermediate goods and raw materials (from the "earlier" production stages) increase in accordance with their input coefficients. Output of the investment goods necessary for increased production of consumption goods also increases. This is the acceleration principle of derived demand (Hayek, 1941). However, when all resources are fully employed, the resources necessary for increased production of consumption goods must be pulled out of the "earlier" stages of production, i.e., from the investment goods sector.

In this context, John Stewart Mill (1915) emphasized two propositions: 1) "Demand for commodities is not demand for labour," and 2) "Industry is limited by capital." I will attempt to explain these propositions using one of Hayek's triangular diagrams. Figure 1 shows the consumption goods output on the x-axis and the degree of production "roundaboutness" on the y-axis. Hayek defined "production roundaboutness" as a phenomenon arising from an increase in the proportion of investment goods over consumption goods, accompanied by a prolongation of the investment period, and resulting in an increase in capital intensity. For simplicity's sake, the elevation of production "roundaboutness" is expressed by the elongation of the y-axis side of the triangle in Figure 1.

In the Keynesian case, we may assume that while "roundaboutness" remains constant, output in the earlier stages of production expands parallel with an increase in the output of consumer goods. Hayek, on the other hand, assumes that all resources, including labor, are limited. Thus, it is necessary to transfer resources away from the production of investment goods to expand the output of consumption goods. Mill's proposition, "the demand for commodities is not demand for labour," is reflected in this aspect of Hayek's thesis.

Keynes' Under-Consumption Theory and Hayek's Over-Investment Theory

From the perspective of economic history and doctrine, there are two major attempts to explain the downturn of a business cycle; one

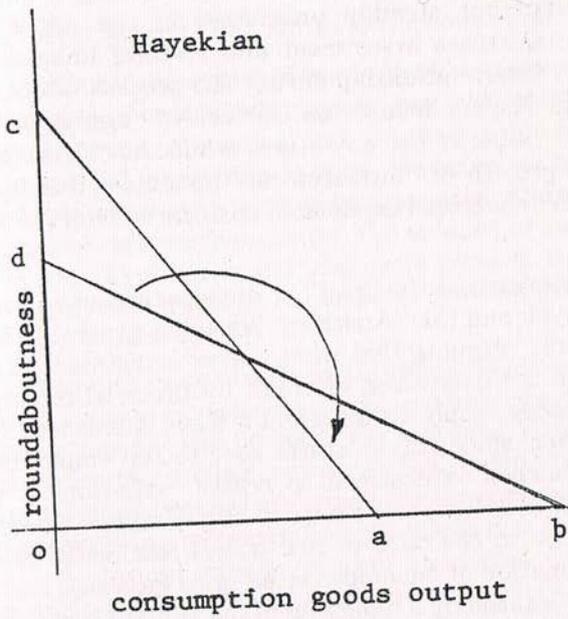
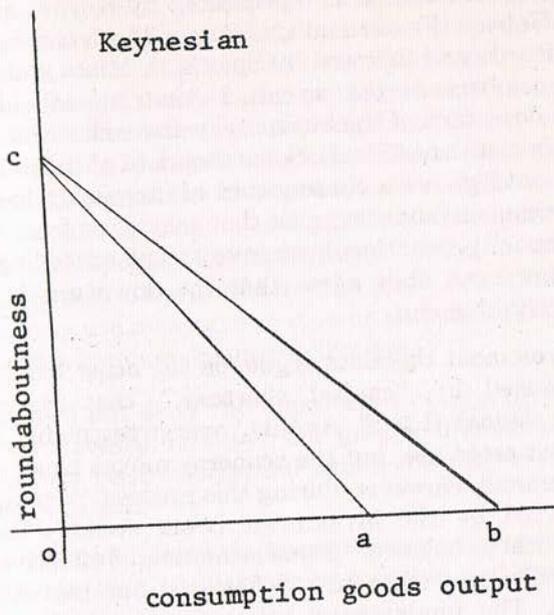


Figure 1

...the under-consumption theory and the other, the investment theory. The former is represented by Keynes and derived from Malthus, Hobson, Foster and Catchings. The latter by Hayek and derived from Ricardo and followed by Spiethoff, Mises and Striglitz. The last two are members of the so-called Austrian school). Keynes argues that the downturn of the business cycle results from an excess of savings over investment ($S > I$). Some theorists of this school argue that the excess savings are a consequence of increasing inequality of income distribution, and some suggest that they arise from the excess of productive capacity resulting from investment exceeding effective demand. In either case, they agree that the downturn is caused by a shortage of effective demand.

The over-investment theorists argue, on the other hand, that the downturn is caused by "capital shortage," that is, excess investment over savings ($I > S$). As this "over-investment" condition continues, interest rates rise, but the economy moves along maintaining the excess demand. However, during this process, "unbalanced expansion" supported by the investment boom steadily creates an underlying "sectoral imbalance." Some reduction of effective demand may take place due to "secondary deflation," but this has only a marginal impact. The fundamental cause for the downturn is the prolongation of production "roundaboutness" leading to an increase in capital intensity that steadily progresses in the midst of excess demand; that is, excess investment and sectoral imbalance have a complementary interrelationship during this process. Thus, one group associated with Keynes focuses on the lack of "aggregate" effective demand as the cause of the downturn, while the "Austrian" school highlights the growth of "intersectoral" imbalance due to excessive investment and unbalanced expansion, creating a distorted production structure.

Spiethoff emphasized the "real" or physical aspect of over-investment, while Hayek and the "Austrian" school in general, stressed the "monetary factor," arguing that what makes investment in excess of savings possible is the creation of credit by financial intermediaries. An increase in money supply makes both $I > S$ and unbalanced expansion possible. However, since Hayek starts near to full employment, this unbalanced expansion is destined to create "inflationary growth." In the process of inflation, an *ex ante* $I-S$ gap will be filled, *ex post*, due to a reduction in the ratio of real wages relative to production, through a combination of uncompensated price increases and through "forced savings" caused by a reduction in the value of bank deposits in real terms. Keynes states in his *General Theory* that such forced savings are difficult to obtain. However, Hayek argues that in the process of inflationary growth, resources including labor are increasingly absorbed in those production sectors favored by inflation. A halt or

reduction in the rate of inflation will therefore cause "substantial unemployment." He also postulates that inflation-causing measures taken to check the growing unemployment will contribute, instead, to an increase in future (potential) unemployment. Hayek believed, following this line of reasoning, that the primary cause of unemployment is, therefore, excessive prolongation of production "roundaboutness," leading to unbalanced expansion of the investment sector. He made no allowance for friction in labor mobility, increases in unemployment compensation, or lack of effective demand, as many other economists do. "Hayekian unemployment," since it arises from past economic dynamism, continues to take place even during the process of inflation, because measures to stop or slow down inflation are likely to cause sudden increases in unemployment.

Hayek does not deny the importance of aggregate demand management. He stresses, however, the greater importance of unemployment caused by past unbalanced expansion rather than that due to secondary deflation."

The concept of "Hayekian unemployment" therefore sheds a good deal of light on the "coexistence of inflation and unemployment" so prevalent today.

Excessive Credit Creation Contributes to Economic Imbalance

Hayek attributes the excess of investment over savings to an overabundant creation of credit. Schumpeter, however, starting also from near full employment, concluded that credit creation in conjunction with entrepreneurial innovation is good. He accepted business cycles as an inevitable consequence of entrepreneurial dynamism, and as such, unstoppable and unchangeable. The essence of capitalism in his view lies in this dynamism and the cycle created by it; economic growth is merely the shadow. Schumpeter paid very little attention to the need for business cycle policies.

Hayek was much more precise on this point. While regarding credit creation that induces investment to exceed savings as bad, Hayek thought savings as such to be good. For instance, Hayek would have expected the economic growth performance of Japan to be much better than that of America because of Japan's higher personal savings ratio. On the contrary, Schumpeter praised the whole process of prosperity, brought about through credit creation supported by technological innovation and considered business downturns merely temporary consequences of the dynamism of capitalism.

It is impossible to discuss Hayek without touching on the "Ricardo effect." Keynesian analysis tends to be "aggregate analysis;" for instance, discussion of prices is mostly in terms of "general prices."

Contrarily, in Hayek's analysis, "relative prices" between various stages of production play an important role. For instance, near the end of a boom, excess demand generally runs parallel to the shortage of savings. Relative prices of investment goods are lower than consumer goods. Market interest rates rise due to "capital shortage." As a consequence, the rate of return on capital in the investment sector is adversely affected, and the "roundaboutness" effect loses its impact. Investment in fixed assets also slows down.

As is well known, Ricardo in the chapter "On Machinery" in his *Principles of Political Economy* pointed out that a rise in real wages induces substitution of machinery for labor, and vice versa. In Hayek's context, the process of business expansion induces mechanization of production due to a rise in real wages. The collapse of a boom leads to lowering of capital intensity, as wage rates fall. At the peak of a boom, the economy generally tends towards inflation due to excess demand for consumer goods, and real wage rates (the ratio of real wages to total production costs) gradually tend to fall.

As far as I know, Hayek developed five or six diagrammatic analyses of the Ricardo effect. This is not, however an appropriate place to discuss them fully. I would like to point out, though, that scholars have had a general tendency to criticize Hayek without a full appreciation of his understanding of the Ricardo effect. Even Schumpeter did not mention this very essential aspect of Hayek's theory in his *History of Economic Analysis* (1954), and gave the title of "Hayek effect" to some other ideas of Hayek in his *Business Cycles* (1939).

In sum, Hayek's analysis, as is clear in his analysis of the Ricardo effect, was microeconomic in contrast to Keynes' macroeconomic analysis. It was highly dynamic in contrast to a common misunderstanding that microeconomic analysis is generally static. His had a content that can be called "structural dynamics."

2. The Modern Global Economy and Hayekian Unemployment

It is conceivable that the "Hayek effect" we have described can occur when an investment boom turns into an excessively unbalanced expansion. But, it is a great mistake to think that this effect regularly takes place in the process of an ordinary business cycle, firstly, because Hayek's theory does not explain short-run inventory cycles. Secondly, the theory should be recognized as having nothing to do with the intermediate investment cycle arising from excess capacity (Schumpeter's case).

As earlier mentioned, Hayek's full employment state, implicitly assumed, is very close to the limits of resource and energy constraints.

he did not take into account the possibility that very rapid technological progress may overcome this. Therefore, I conclude that the genuine Hayekian case takes place only in a "zero-sum" environment. This condition occurs only at or near the top of a Kondratieff long wave (40 year cycle). At that point, "coexistence of inflation and unemployment" takes place, high rates of interest continue, and fears of crowding-out of private investment by heavy government borrowing become apparent.

In this context, the following criticism of Hayek's business cycle theory by Lawrence Klein in his *Keynesian Revolution* (1947) seems to be misleading; "The over-investment writers were clearly dealing with the short-run cyclical phenomenon and did not attempt to deal with the theory of prolonged depression." Of course, he may be right if the long-run theory is narrowly referred to as secular stagnation. The really remarkable characteristic of Hayek's theory is that it deals clearly with the phase at or near the ceiling of the Kondratieff wave, which is obviously a much longer wave even than the Juglar (9-10 years) investment cycle. In this sense, Hayek's theory is appropriate for long-run, rather than short-run, phenomena.

Hayek himself wrote in his 1972 paper, "Campaign against Keynesian Inflation," included in *New Studies in Philosophy, Politics, Economics and the History of Ideas* (1978): "In Austria and Germany the experience of the great inflation had, of course, directed our attention to the connection between changes in the quantity of money and changes in the degree of employment, and had especially shown to us that the employment created by inflation diminished at once as inflation slowed down; the termination of inflation always produced what came to be called a "stabilization crisis" with substantial unemployment. It was the insight into this connection which made me and some of my contemporaries from outside reject and oppose the kind of full employment policy propagated by Lord Keynes and his followers."

It is important to recognize that Hayek's theory grew out of his investigation of the Great German Inflation (1923). This occurred in Germany after the Kondratieff wave reached its peak during World War I, and, according to my own observation, the economy was also at or near the resource constraints at this time. It moves forward till it crashes against the "resource constraints barrier," and then turns into a long-run deflation (as before World War II) or into stagflation (as after World War II). My personal view is that the long wave follows an upswing supported by the combined long-run force of "war," "technological innovation," and "money supply."² Therefore, I submit

² In the Kondratieff case, "gold production" was taken up instead of "money supply," and "agriculture" instead of "resource constraints barrier." Ours is a mere outcome of

after World War I, Hayek's theory applies aptly to the present world economy, since it is near the ceiling of the Kondratieff wave.

Typical Cases of Hayekian Unbalanced Growth

At the outset of this paper, I stated that Hayek's business cycle theory emphasized "sectoral imbalance" (i.e., between the investment and consumption sectors) growing out of a combination of "unbalanced expansion" and "inflationary growth." Let us examine a few nations' economies in the light of this theory. In the US, inflationary psychology started to set in the mid-1960s, led by the Vietnam intervention, and a long-term inflationary expectation began to build in the society after 1970. There are two problems. The first problem is that one may not be able to prove that unbalanced expansion of investment produced these inflationary expectations. Another problem is that one cannot answer the question whether these inflationary expectations were building up before the economy encountered major resource constraints.

As was stated before, Hayek's theory is based on a simplified "idealized" model, with only two sectors, investment goods and consumption goods. It is a theoretical system drawn from a highly abstract picture capable of expression in a triangular diagram (Figure 1). Although Hayek's theory may be abstract and oversimplified, his careful selection of the bare essentials, he vividly painted a picture of the economy which illustrates underlying truths.

Additional observations lead me to the following problem. In the US it appears that inflationary expectations were setting in before the first oil shock. Government rather than the private sector played a leading role in generating sectoral imbalance and inflation. One can observe that there had been global upward trends in primary commodity prices arising already after the Vietnam intervention, and also that the US economy was approaching the limits of resource constraints at that point in its history. Therefore, Hayek's theory applies, as it is, to the US economy during that period.

I would like to point out the case of Korea as another example that vividly illustrates the Hayekian process discussed above. The ratio of its domestic gross fixed investment (DGFI) to GNP was 13.7 per cent

historical interpretation, or stylization, which is essentially of retrospective backward character. Therefore, the long wave may still go on even without "war," under the long-run mainsprings: "technological innovation" and "money supply" in a supposed future world economic development in which war is terminated completely. Incidentally, for more detailed analysis of the Kondratieff wave, see my book, *Industrial Growth, Trade and Dynamic Patterns in the Japanese Economy*, University of Tokyo Press, 1982 (Chapter 11, "Postwar Cycles Re-examined: Kondratieff, Juglar and Kitchin Cycles").

1962, but rose steeply to 31 per cent in 1980. During this period, real GNP increased 4.6-fold, but the real DGI on the other hand increased 14.9-fold. "Unbalanced expansion" is quite obvious. During the same period, a 24-fold increase in money supply and a 14-fold increase in the consumer price index were seen, a startling story of "inflationary growth." Inflation progressed rapidly and steadily, and the rate of personal savings remained extremely low. There was, however, a large inflow of overseas capital. Credit creation from both home and abroad supported inflationary growth and unbalanced expansion.

After the second oil shock, the real GNP growth rate declined by 1 per cent, and the balance of payments deficit on current account was \$1 billion. If Korea had tried to completely eliminate inflationary growth, there would have been inevitably a stabilization crisis. At this stage there seems to have been no other way than to shift only gradually to non-inflationary growth, even though the slowing down of inflation itself would cause Hayekian unemployment. In fact, unemployment reached 542,000 in 1979, climbing to 749,000 (38 per cent increase) in 1980. The rate of increase in the consumer goods price index advanced during this period from 18.1 per cent to 28.6 per cent. If the rate of inflation had been stopped, there would have been even more unemployment.

Reinforcement of Hayek's Theory

Hayek's theory is surely an abstract painting, and one may be able to find a number of deviations between his theory and the global economic realities. But I believe that Hayekian elements do exist more or less reflecting the realities faced recently in almost every country in the world. It is important to reinforce his theory rather than pick on its defects and attack it.

I suggest, first of all, that Hayek's theory be expanded by introducing the government sector. Also, we should remove the over-emphasis that Hayek made upon the substitution between labor and capital (the Ricardo effect) and the reciprocal movements between investment goods and consumer goods. In his *Profits, Interest and Investment* (1939), Hayek argued as Keynes did, that the coefficient of acceleration shows a positive sign during the upswing of a business cycle; but he also observed that this turns negative at the top of a boom. This presages our observation that the "principle of acceleration" changes to "deceleration" not in short-term business cycles but at the peak of a long-term Kondratieff wave.

Spethoff (1925), a forerunner of the over-investment theory focused his analysis on the phenomenon of the shortage of intermediate goods

mittelbare Verbrauchsgüter such as steel, coal, lumber, bricks, etc., that contribute to the creation of producer goods *Ertragsgüter*, such as production equipment, railways, houses, etc., at the end of the upturning point. Hayek realized the significance of these phenomena and added two pages to his 1939 book mentioned above to discuss the role of price increases of raw materials as "complementary goods" and thus highlighted the complementary relationship between production output and raw materials (Hayek, 1939, pp. 29-31).

In order to make Hayek's theory a more effective tool in dealing with the conditions occurring near resource constraints, it is necessary to dig deeper not only into the role of the substitution effect between labor and capital, but also into the role of relative price increases at the point of resource and energy constraints. This is because the rise in basic resource prices accelerates and intensifies the disadvantages accruing to the investment goods sector.

In fact, unemployment in 1975 after the first oil shock increased sharply by 53.8 per cent (versus the 1974 figure) in the US, 54.8 per cent in the UK, 84.5 per cent in West Germany, and 68.7 per cent in France. After the second oil shock, the corresponding figures were 24.4 per cent (1980) in the US, 53.8 per cent (1981) in the UK, 43.1 per cent (1981) in West Germany and 22.2 per cent (1981) in France, which are much lower than those after the first oil shock but still high enough to cause concern. In this sense, it is impossible to ignore the profound importance of the role of relative price of intermediate goods, *mittelbare Verbrauchsgüter*, as defined by Spiethoff.

Although there are many such aspects in Hayek's theory that require correction and reinforcement, it is undeniably true that the theory holds its own internal consistency. Therefore, rather than condemning his theory as being inapplicable to short-run business cycles, we should recognize it for its great contribution in understanding a critical aspect of the long-term Kondratieff wave.

Appropriateness of Hicks' Evaluation

It may be useful also to refer to Hicks' (1967, p. 210) evaluation. He stated that: "The Hayek Theory is not a theory of the credit cycle; it is an analysis—a very interesting analysis—of the adjustment of an economy to changes in the rate of genuine savings. In that direction, it does make a real contribution. But it is a contribution which, when it was made, was out of due time. It does not belong to the theory of fluctuations, which was the center of economists' attention in the 1930s."

is a forerunner of the growth theory of more recent years. In that application we can still make something of it."³

The methodology mentioned in this statement is not exactly that which I have discussed in this paper. However, Hicks (1967, p. 215) further stated that "if rapid inflation is to be kept down to a finite rate of inflation there must be unemployment! This is the Hayek 'slump.' In such conditions the Keynesian prescription is irrelevant, as irrelevant as Hayek's was in 1931."

"Hayek's prescription—the direction of policy toward the restoration of the marginal productivity of labor to a normal level as soon as possible—will then after all be right" (Hicks, 1967, p. 215). This seems to substantially agree with my evaluation of Hayek's theory.

I would like to quote another paragraph from Hicks' (1973) book *Capital and Time*, which carries a subtitle: *Neo-Austrian Theory*. In this book he stated that, "the Austrians were not a peculiar sect out of the mainstream; they were in the mainstream; it was others that were out of it." It goes without saying that Hayek was a leader of the Austrian school. Hicks was talking about the revival of the capital theory of the Austrian school in his 1973 book. I myself believe that Hayek's business cycle theory is organically integrated with his capital theory.

3. Interpretation of the Shift of the Phillips Curve

Recently we have seen an attempt to explain the upward shift of the Phillips curve, introduced by Gordon (1978), Kato (1982), Dornbusch and Fischer (1978), etc., as a theoretical framework, to explain the coexistence of inflation and unemployment. The historical drift of the locus of intersections between the macro-demand curve and the Phillips curve (as a supply curve) is shown in Figure 2. Its five phases can be described as follows: (1) "falling rate of unemployment and rising rate of inflation;" (2) "stationary unemployment and rising rate of inflation;" (3) "rising rate of unemployment and inflation;" (4) "rising rate of unemployment and falling rate of inflation." Whether or not the phase will move along the dotted path marked as (5) is yet to be seen, and there are many uncertain factors affecting this speculation.

It should be noted that it took almost ten years for the process starting in phase (1) (shortly after the first oil shock) to reach phase (4), the present-day situation. This shows that this clockwise moving

³The quotations from Hicks, also appear in *Essays on Hayek* (ed. by Machlup and Friedman), Michigan, 1976, Chapter 2 "Hayek's Contribution to Economics" by Fritz Machlup, pp. 27-28.

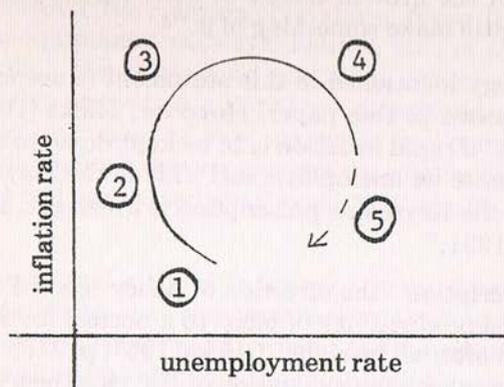


Figure 2

process is a time-consuming one, more or less corresponding to a Juglar cycle, occurring at the very top of the long wave.

Within the context of the modern version of the Phillips curve theory, it is generally said that the "rise in the expected inflation rate plays an important role. However, historically, the rise in expected inflation occurs only in the phase in which the economy approaches resource constraints. In this context, on the path shown in Figure 2 the coexistence of inflation and unemployment can only be explained by taking resource constraints into consideration.

Furthermore, the movement towards phase (4) leads us to reason that there were, as its precedents, "inflationary growth" and "unbalanced expansion."

The recent general analytical tendency is to deal only with the "expected inflation rate" without paying close attention to which phase the world economy is really in. This recent theorizing is too superficial and overlooks the dynamics of long-term economic movements.

Today the rational expectation school and monetarists are popular, but it is improbable that they will completely replace the Keynesians. It is my view that during the upswing of a long wave, Keynes' theory is applicable, while in a later phase monetarism is appropriate. Therefore, economic theories themselves take turns in a theory cycle along the path of the long wave. I would also like to emphasize the importance of clearly recognizing that it is near the peak of the long (Kondratieff) wave that the "coexistence of inflation and unemployment" takes on a special importance.

It is important for economists first to understand Hayekian unemployment before they start this type of analysis. Then it is appropriate to proceed to the upward shift of the Phillips curve.

There is no logical necessity nor historical evidence that the phase path, after following clockwise movements ((1) through (4)) returns to an equilibrium point with the exact same natural unemployment rate as phase (1) as its terminal point of phase (5). Depending on the inflationary behavior of the economy, the end of phase (5) may shift to a higher natural unemployment rate. If this manifests itself, then the conventional approach, that the inflation rate is only a function of the difference between demand for and supply of labor, is extremely misleading, as illustrated in Figure 3 below. The level of real GNP in the phase to the left of t_0 is only constrained by full employment, but the barrier of resource-energy constraints (dotted line) as yet causes no problem. But at t_1 for instance, further GNP growth is constrained by the resource-energy barrier and cannot grow beyond it, and the level of full employment output is above the barrier by α . There will be "structural" unemployment commensurate to α . If this "structural unemployment" increases, there will be a rise in the "natural" unemployment rate. Therefore, there is no logical reason for the return of the path to the same rate of natural unemployment after one cycle ($t_0 - t_1$).

This resource-energy constraint should not be interpreted simply as physical. For instance, the curve will move downward if the Organization of Petroleum Exporting Countries (OPEC) implements supply restriction through cartelization, or may move more or less upward if the price of oil falls due to effective oil conservation measures.

In this context, I find it strange that use of the Phillips curve by contemporary economists depends solely on the labor demand and supply relationship. I must insist on the importance of due recognition of three factors: labor, capital stock and resources-energy. These may pose different degrees of constraint to be analyzed in relation to the world economy.

4. Contribution of Hayek's Vision

I summarize my views under the following topics.

Hayekian Unemployment

I would like to "christen" unemployment under inflation as "Hayekian unemployment." To the best of my knowledge, I should

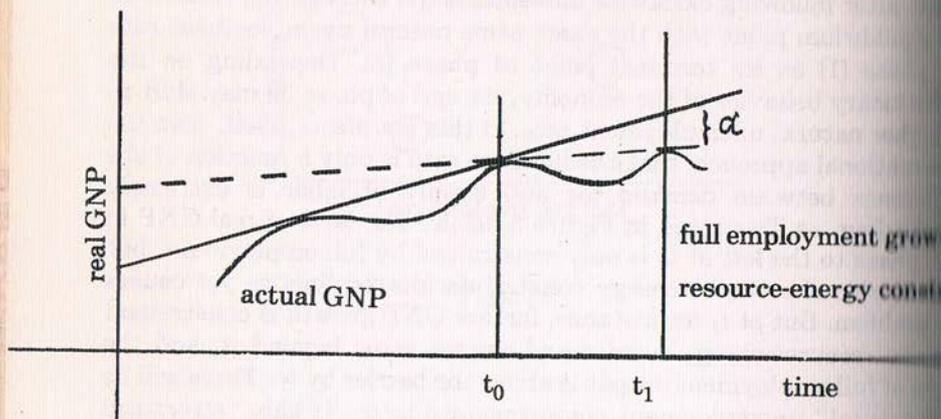


Figure 3

say that Hicks and Machlup understood the logic behind this phenomenon very clearly. But many economists in the present world are blind to this. This deserves notice and protest! Hayekian unemployment emerges through the extremely dynamic long-term process discussed elsewhere in this paper, and cannot be fully derived only through static analysis of market imperfections focussing upon a particular point in time.

Theories Are Relevant at Different Times

Hayek did not deny the existence of unemployment induced by the "secondary deflation," if any, occurring in the process of a business downturn. In the situation where secondary deflation prevails, "Keynesian unemployment" may become more dominant. This is when Keynesian theory can play the major role. The very reason why policy prescriptions for treatment of the ills of the present world economy contradict each other so frequently is that policy economists are unable to make proper judgment on the relative weights to be attached to Keynesian and Hayekian unemployment. That is perhaps because they have not recognized when in the very long-term economic cycles their theories become applicable. Therefore, there need not be exclusive adherence to one or the other. Likewise, I believe that there is no mutual exclusivity between Keynesianism and monetarism.

Hicks confirmed this in his classical essay "Mr. Keynes and Classics," (1937) wherein he concluded that "monetary theory is more effective in the neighborhood of full employment, and fiscal policy is more effective at the bottom of depression."

The Role of Resource Constraints

Based on the Phillips curve, some economists have argued about expected inflation rates, rational expectation formation, natural unemployment rates, etc., considering only labor demand - supply balances, or the labor ceiling, to understand the present state of the world economy. Harrod clearly defined "natural growth rate" as a full labor-employment growth rate and "warranted growth rate" as a full capacity growth rate, and fully recognized the differences between the constraints of "labor" and of "capacity."

At this stage, however, I advocate that we should clearly also recognize the role of resources, without which the explanation of the changes in the level of natural unemployment is impossible. (By the way, Harrod also stressed the importance of the discrepancy between "natural" growth rate (G_n) and "warranted" growth rate (G_w), but did not relate this discrepancy to the difference between the *levels* of "labor limits" and "capacity limits." Rather, he chose to assign them to different *rates* of growth).

Hayek's Theory and the Long Wave

The business cycle Hayek dealt with was neither an inventory cycle nor a fixed investment cycle. Rather, it was the theory of an upper turning point that occurs at or near the ceiling of the long (Kondratieff) wave. Hayek himself did not overtly recognize this remarkable aspect. Rather, he seemed to focus his attention on the analysis of how a boom leads to inflation and will collapse due to resource constraints without reference to the long wave. As Hayek himself did not realize this, he did not try to apply his theory specifically to the long wave phenomenon at all. One may therefore find some contradictions in his analysis in that he tried to use analytical tools which are only valid for the upper turning point of the long wave, for the explanations of medium-term investment cycles.

Once the "resurrection" of Hayek is talked about, it is conceivable that an increasing number of economists will try to belittle Hayek by pointing out his analytical simplicity. However, the most important thing is not to attack his technical faults, but rather to evaluate the significance of his visions and conclusions which have been overlooked by most modern economists. In other words, Hayek was long ahead of his time. Even in the prewar period when Hayekian controversies

flourished, scholars had a tendency to argue about nonessential matters. I fear this tendency may be repeated unless this issue is highlighted. The remaining problem, therefore, is how to improve his theory without losing his spirit and vision. This may help us understand the present world economic situation better.

These are remaining problems. There may well be others. But the visions he elucidated in his business cycle-capital theories contain invaluable insights which deserve serious reconsideration.

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