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<th>Beyond Keynes' Economics</th>
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BEYOND KEYNES' ECONOMICS

TOSHIYA HANAWA

Introduction

J. M. Keynes' The General Theory of Employment, Interest and Money\(^1\) was published at 1936, and 50 years have passed. The General Theory, considered as "economic heresies"\(^2\) on its publication, converted many economists who have been educated under classical theory. And they called it as "Keynesian revolution"\(^3\) or "new economics,"\(^4\) and then Keynesian economics became an orthodox school.

Samuelson’s Neo-Classical Synthesis\(^5\) was the beginning of such a movement. Although effective demand by monetary and financial policies have to be increased till the realization of full employment, the role of both policies will end after the realization of full employment and the allocation of economic resources by the full flexibility of prices that classical theory supposed, is considered as effective. As this vision of mixed economy was said by Keynes too, this was popular one time. But, it became clear that this vision does not have theoretical significance but political one, and now nobody say about Neo-Classical Synthesis. In the process of this discussion, Keynesian Economics has not been considered as a general theory but as a partial theory of orthodox classical theory. Because, the full flexibility of prices was assumed in the orthodox classical theory, but the rigidity of prices was assumed in the Keynesian Economics.

Friedman’s Monetarism\(^6\) insisted that "money does not matter" in Keynesian Economics and contrasted with one’s own theory emphasizing on "money does matter." But, Friedman made a distinction between Keynes’ Economics and Keynesian Economics and recognized that the former emphasized money, but the latter did not. And Feldstein’s Supply-side Economics\(^7\) that comment on the emphasis of demand-side in Keynesian Economics and insist on emphasis of supply-side, intensified anti-Keynesian attitude under the economic policies of Reagan (U.S.A. President) and Thatar (U.K. Premier). It is natural to consider what the nature of Keynes’ Economics is, in the transition of the estimation for Keynes’ Economics. Is it either illusional book or revolutionary one? This study is not commentary on the foundation of Keynes’ thought, but to find a road beyond Keynes.

In Chap. 1, we deal with two approaches in forming The General Theory. The General Theory criticized a orthodox classical theory, that was a system consolidated a real economy and a quantity theory of money, so that appeared to be a contradictory assertion. In considering that orthodox classical theory is a real economic analysis, The General Theory suggested how to introduce a monetary-side into real economy analysis, the other way in considering that a quantity theory of money is a monetary theory of classical theory, The General Theory suggested how to introduce a real-side into rather monetary analysis. To tell the truth, both analytical views are important to show that modern capitalistic system is not recognized as a barter economy, but as a monetary economy.

In Chap. 2, Keynes recognized that the feature of capitalistic economy consisted in monetary economy, and found the uncertainty of prices as a difference between real economy and monetary economy. He emphasized the unstability of capitalistic economy in the uncertainty of prices under the influence of inflation.

In Chap. 3, he did not stress only on the change of prices, but also the change of quantities as the unstability of a capitalistic economy. It is not too much to say that the contribution of The General Theory is to introduce this uncertainty. It is important to consider full employment significantly, and to introduce an under-employment equilibrium.

In Chap. 4, we deal with the uncertainty of quality as a direction beyond The General Theory. This introduction does not only make ease the explanation of under employment equilibrium, but also make clear the behavior of banks.

At 1973 the new standard edition of Collected Writings of John Maynard Keynes was published, so that it is the best time to study about Keynes.

I. Two Approaches in Forming The General Theory

An orthodox classical economics critisized by Keynes accepted the classical dichotomy. So long as economists are concerned with what is called the theory of value, they have been accustomed to teach that prices are governed by the conditions of suply and demand; and, in particular, changes in marginal cost and the elasticity of short-period supply have played a prominent part. But when they pass in volume II, or more often in a separate treatise, to the theory of money and prices, we hear no more of these homely but intelligible concepts and move into a world where prices are governed by the quantity of money, by its income-velocity, by the velocity of circulation relatively to the volume of transactions, by hoarding, by forced saving, by inflation and deflation et hoc genus omne; and little or no attempt is made to relate these vaguer phrases to our former notions of the elasticities of supply and demand.8

The division of classical economics between the theory of value and distribution on the one hand and the theory of money on the other hand is a false division, so that Keynes made efforts to escape from this classical dichotomy and to integrate both theories and to make

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a general theory to study about a monetary economy. The important matter for a classical theory to analyse the real economy except money from a capitalistic economy is to study the price mechanism in product market, labor market and capital market. Money was considered as a veil covering a real economy. A theory to study the effect of money became a quantity theory of money.

In the system that the value of money is sustained in exchange of gold like a rigid gold standard, the disturbing effects are not so great, on the other hand the cost of circulation of money is considered to be great. Therefore, with the supply of fiat money to save the cost of circulation of money and/or with the dominance of deposit money created by banking system in the money supply, the disturbing effect of money on the real economy became to be great. Then, the importance of central banking was the principal matter of classical economics, and the neutral money supply was secured.

Keynes' point of view to criticize an orthodox classical theory had two contradictory approaches. The first approach was to introduce monetary-side analysis into real economy analysis that was the feature of classical theory. The second was to introduce real-side analysis into a supreme monetary theory that was a feature of the quantity theory of money. These two approaches corresponded to two faces of a classical theory, and appeared to be contradictory view points, but meant the same view that capitalistic economy had to be recognized as a monetary economy. These approaches appeared not only in The General Theory, but also in A Tract on Monetary Reform and A Treatise on Money, but in The General Theory was most clearly.

How does the first approach make use of? As a classical theory was the economics of price theory, the analysis of relative price system was important. Therefore, money was only a veil covering real economy. Money supply can have an effect on an absolute price (a general price level), without an effect on relative prices. Keynes supposed that the effect of money supply was not only on a general price level, but also on real economy such as production and employment. He emphasized the effect of money, through the channel of the rate of interest. The rate of interest was divided into a natural rate of interest (the marginal efficiency of capital in the General Theory) and a market rate of interest.

"Liquidity preference theory" was introduced as the theory of determination of the latter rate. In a classical theory, the rate of interest was considered as a reward for saving or waiting, and as an equilibrator of investment (demand for capital) and saving (supply of capital). But, Keynes stressed on money as well as a bonds as portfolio of savings and we could not earn interest if we hoarded money, but earned interest if we hoarded bonds, therefore the rate of interest was the reward for parting with liquidity for a specified period. This means that money supply and a liquidity preference schedule can determine the market rate of interest, and this rate becomes the factor which effects the real economy.

And Keynes fully recognized the metamorphosis of money. When he wrote A Treatise on Money, the most important money was deposit money, and the Bank of England con-

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9 Hicks, J. R., Critical Essays in Monetary Theory, 1967, Chap. 9.
controlled the whole money supply through deposit money. In contrast with Keynes, Friedman considered that the core of money supply was cash money in 100% reserve plan; this means he does not recognize the metamorphosis of money. In The General Theory, money and bonds were considered as hoards of savings, but another categories of financial securities such as stocks and quasi-money can be considered, too.

How does the second approach make use of? The quantity theory of money, as the monetary theory of a classical theory, showed that the rise (fall) of money supply induced the rise (fall) of the price level. But it did not show the transmission mechanism of money supply into real economy (money illusion will be considered in Chap. 2).

Keynes had efforts on the introduction of real-side analysis in the transmission of money, especially the mechanism of investment-saving; the rise (fall) of money supply induced the situation of investment > ( < ) saving through the fall (rise) of the rate of interest, and profit inflation (deflation) and income inflation (deflation) would appear. Thus, the change of money supply was considered as the factor which caused the change of income and price level. This channel was through which caused by the change of the rate of interest.

In A Treatise on Money it was assumed that there was a full employment, thus the gap between investment and saving were considered to cause the change in price level, such as profit inflation (deflation), but in The General Theory it was assumed to be under employment, thus the gap between investment and saving cause to the change of income. Of course, The General Theory dealt with the change of price as \( e_o \cdot e_p \) analysis.

\( e_o \): the elasticity of output in response to changes in effective demand.
\( e_p \): the elasticity of price in response to changes in effective demand.

In the case of \( e_o = 1 \) and \( e_p = 0 \), the rise of money supply can bring the rise of income as long as the rise of money can bring the rise of effective demand. On the other hand, in the case of \( e_o = 0 \) and \( e_p = 1 \), the rise of money supply can rise the price level without rising income; the latter case shows the quantity theory of money.

Moreover, The General Theory recognized full employment situation conciously. This aspects was important, and seemed to be the same as what was pointed out by Friedman, i.e., introducing conciously a natural rate of unemployment. But, Keynes considered that a full employment was an end of economic policies while Friedman considered that it was attainable through the autonomy of economy.

In The General Theory Keynes critisized the quantity theory of money, and introduced the real-side factors. But it was a short theory with a given capital equipment, thus the generalization of The General Theory was necessary. Long term, dynamic theories written by Robinson and Harrod were examples, but they seemed to be unsuccessful from the viewpoint of a monetary theory.

The approaches seem apparently contradictory, but show the viewpoint of Keynes' Theory that capitalistic economy ought to be a monetary economy; This is opposite to a classical theory analyzing a barter-economy. In monetary economy, there are a lot of uncertainties that real economy doesn't have. The introduction of uncertainty into eco-
nomic analysis was the fundamental target for Keynesian Economics. *A Tract on Monetary Reform* and *A Treatise on Money* introduced the uncertainty of prices as inflation or deflation. And *The General Theory* introduced the uncertainty of quantities of labour as an unemployment problem, but didn’t introduce the uncertainty of qualities of labour. We’ll introduce this quality-uncertainty as an aspect beyond Keynes’ Economics.

II. The Uncertainty of Prices and Keynes’ Economics

In *A Tract on Monetary Reform*, Keynes considered economic problems under the classical theory. He recognized the 3 fundamental classes of capitalistic society; the business class, the investing class, and the earning class, and he had effort on the analysis of inflationary effects on these 3 classes.\(^{17}\)

Keynes’ quantity theory modified a classical monetary theory was as follows.\(^{18}\)

\[
n = P(k + rk')
\]

- \(n\): currency notes or other forms of cash in circulation with the public
- \(p\): the price of each consumption unit
- \(k\): real cash balance of cash money
- \(r\): bank’s cash reserve ratio
- \(k'\): real cash balance of bank money

So long as \(k, k',\) and \(r\) remain unchanged, \(n\) and \(P\) rise and fall together. Since the quantity theory stated that \(n\) was an independent variable, the arbitrary doubling of \(n\) would have the effect of raising \(P\) to double what it would have been otherwise. Keynes spoke of an increase or decrease in \(n\) as inflation or deflation of cash and of an increase or decrease in \(k\) and \(k'\) as inflation or deflation of real balances.

He concluded that inflation redistributed wealth in a manner that the investor was injurious, the business man was beneficial and in modern industrial conditions the income earliness were probably beneficial.

And Keynes stressed on the importance of expectation on inflation or deflation as well as real inflation or real deflation.

Now it follows from this, not merely that the *actual occurrence* of price changes profits some classes and injuries others (which has been the theme of the first section of this chapter), but that a *general fear* of falling prices may inhibit the productive process altogether. For if prices are expected to fall, not enough risk-takers can be found who are willing to carry a speculative ‘bull’ position, and this means that entrepreneurs will be reluctant to embark on lengthy productive process involving a money outlay long in advance of money recoupment—whence unemployment. The *fact* of falling prices injures entrepreneurs; consequently the *fear* of falling prices causes them to protect themselves by curtailing their operation.\(^{19}\)


\(^{18}\) Ibid., Chap. 3, pp. 61–115.

\(^{19}\) Ibid., p. 34.
Therefore, Keynes emphasized on the stability of price level, that is the purchasing power of money, as follows.

There is a further aggravation of the case, in that an expectation about the course of prices tends, if it is widely held, to be cumulative in its results up to a certain point. If prices are expected to rise and the business world acts on this expectation, that very fact causes them to rise for a time and, by verifying the expectation, reinforces it; and similarly, if it expects them to fall. Thus a comparatively weak initial impetus may be adequate to produce a considerable fluctuation.20

It is one of the objects of this book to urge that the best way to cure this mortal disease of individualism is to provide that there shall never exist any confident expectation either that prices generally are going to fall or that they are going to rise; and also that there shall be no serious risk that a movement, if it does occur, will be a big one. If, unexpectedly and accidentally, a moderate movement were to occur, wealth, though it might be redistributed, would not be diminished thereby.21

Keynes recognized the importance of expectation in A Tract on Monetary Reform, so that he might be considered as the beginning of the analysis of Monetarist. Moreover, Keynes' treatment of expectations in this book was not only about inflation and deflation, but also about the change of production, that means the feature of uncertainty in The General Theory. His statement on the roles of entrepreneurs in a monetary economy was as follows.

During the lengthy process of production the business world is incurring outgoings in terms of money—paying out in money for wages and other expenses of production—in the expectation of recouping this outlay by disposing of the product for money at a later date. That is to say, the business world as a whole must always be in a position where it stands to gain by a rise of price and to lose by a fall of price. Whether he likes it or not, the technique of production under a regime of money contract forces the business world always to carry a big speculative position;22

These situation cannot be changed fundamentally by professional institutions' undertaking speculative risks for producers.

Friedman's consideration to avoid the uncertainty of prices is to introduce the theory of money illusion; that is, as for Phillips curves, the short run Phillips curve can exist, because economic subjects are under money illusion. According to Friedman, in the long run, the long run Phillips curve will become vertical, because economic subjects can be exempted from money illusion.23

As for Phillips curves, the rate of rise of prices at time t (\(\dot{P}_t\)) is a function of the rate of unemployment at time t (\(U_t\)), so that high rate of unemployment corresponds to low rate of inflation, and low rate of unemployment corresponds to high rate of inflation, and then

20 Ibid., p. 34.
21 Ibid., p. 35.
22 Ibid., p. 33.
Phillips curve is downward-sloping schedule. Friedman's criticism is that the rate of inflation ($\dot{P}_t$) is not only a function of the rate of unemployment ($U_t$), but also a function of the expected rate of inflation ($\dot{P}_t^e$).

$$\dot{P}_t = f(U_t) + \dot{P}_t^e$$

When $\dot{P}_t = \dot{P}_t^e$, then $\dot{P}_t - \dot{P}_t^e = 0 = f(U_t)$.

The rate of unemployment without money illusion is considered to be the natural rate of unemployment, that is consistent with full employment. And when $\dot{P}_t = \dot{P}_t^e$ in short situation, the rate of unemployment is separated from the natural rate of unemployment, but it is a transitory phenomenon. Whenever, money illusion disappears i.e., $\dot{P}_t = \dot{P}_t^e$, the natural rate of unemployment is realized.

This shows that real wages are more important than nominal wages in labour market. The same thing is known as Fisher effect in financial market; it shows that nominal rate of interest = real rate of interest + expected rate of inflation, and shows ultimately that real rate of interest is a regulator of demand and supply of capital. And, Friedman considers that the rate of inflation is the effect of the rate of change of money supply.

Keynes criticized the quantity theory of money and developed his original theory. He used the explanation of the Gibson paradox in place of the theory of money illusion; this was an important viewpoint of the criticism for the quantity theory of money, but may have been neglected, for being the theory of the 'Gibson Paradox' in A Treatise on Money II: The Applied Theory of Money. The 'Gibson Paradox' was published on the Bankers' Magazine by Gibson, and was a phenomenon of positive correlation between the rate of interest and inflation. The reason this phenomenon is called as Paradox is that a close correlation between the rate of interest and inflation is recognized empirically on the one hand, but a theory shows that the fall (rise) of the rate of interest may increase (decrease) investment and transaction, so that the price level will rise (fall) on the other hand. The explanation of the 'Gibson Paradox' by Keynes is as follows.

(1) The market rate of interest as measured by the yield on long-dated securities, may be very 'sticky' in relation to the natural rate of interest which defined as the rate at which savings and investment are exactly balanced. When the natural rate of interest is falling (or rising), if the banking system does not quickly detect or responds to this phenomenon, the market rate tends to lag behind and to fall (rise) less than it should be if it relates to the natural rate.

(2) Since the annual increment of capital is small relative to its aggregates, the movements in the natural rate of interest are long-period movements over decade.

(3) When the natural rate of interest is falling (or rising), there is a tendency for investment to fall behind (run ahead of) saving because the market rate does not fall (rise) as fast as of the natural rate of interest.

(4) When the natural rate is falling, there is a long-period drag on the price level, and vice versa.

(5) The Quantity Theory of Money stressed on the possibility of over (or under) issue of money, while Keynes trust in the management of money by the central bank.

(6) Keynes' assertion is that inflation is not only the result of a correlation between money

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supply and price level, but also the difference between the natural rate of interest and the market rate of interest.

(7) The effect of the difference between the natural rate of interest and the market rate of interest seems to be cumulative. When there is an excess of saving over investment, income will decline as a result the net increase of wealth is zero. Thus, profit deflation not only holds the market rate of interest above the natural rate, about by retards the growth of wealth, it the natural rate itself at a higher level than it would stand at otherwise.

(8) Opposing the thought that the way to bring down the rate of interest in the long run is to stimulate saving by a thrift while simultaneously putting obstacles in the way of investment. Keynes asserted that savings which are not invested are spilt and add nothing to the national wealth. "It is investment, i.e. the increased production of material wealth in the shape of capital goods, which alone increases national wealth and can alone in the long run bring down the natural rate of interest."25

As above Keynes criticized the quantity theory of money that stressed on the effect of a strict money supply, and introduced the real-side factors into this.

III. The Uncertainty of Quantities and Keynes' Economics

The uncertainty of prices appears in front of unexpected inflation, but when inflation is expected, the uncertainty can be eliminated. The uncertainty factors of the capitalistic society are not only prices, but also the quantities. And the core of The General Theory is to make clear about the uncertainty of quantities.26

In The General Theory, the uncertainty of quantities is discussed with the relationship of investment and savings, namely the fluctuation of investment and the change of liquidity preference of money will bring the unstability of capitalistic society.

Firstly we will comment on the fluctuation of investment. Keynes made clear that entrepreneur would speculate in process of production in the case of the uncertainty of the sales (namely prices x quantities). It is important to deal with the uncertainty of quantities rather than the uncertainty of prices. In other words, it is desirable for the effective demand to keep up the optimum level of full employment. But, it is not always true. The reason is the occurrence of the fluctuations in investment. On the contrary, consumption may be considered to be rather stable.

Investment is a function of the marginal efficiency of capital and the rate of interest: The former is considered to be fundamentally the same as the investment function of the classical theory, but the marginal efficiency of capital is in monetary character, compared with the classical theory. Therefore, the marginal efficiency of capital can be comparable with market rate of interest in monetary market.

"The marginal efficiency of capital depends, not only on the existing abundance or scarcity of capital-goods, but also on current expectations as to the future yield of capital

25 Ibid., p. 186.
And Keynes suggested “the essential character of the trade cycle and, especially, the regularity of time-sequence and of duration which justifies us in calling it a cycle, is mainly due to the way in which the marginal efficiency of capital fluctuates.”

Next, I will point out the importance of changing process from A Treatise on Money to The General Theory in dealing with the rate of interest in the investment function. This point has been neglected till now. Keynes pointed out the stickiness of the rate of interest as an explanation of Gibson Paradox. Because of its stickiness, bank’s loan behaviour did not completely depend on the free market principles, but on bank institution.

In The General Theory, Keynes liked the theoretical explanation rather than the institutional explanation. Keynes idea of showing the yield of Consols as the representative rate of interest is to make clear the stickiness of the rate of interest without institutional explanation. Nevertheless, there is a reason for the stickiness of the rate of interest, that is the speculative fixation of the demand for money.

“Its essential characteristic is that there is a sufficient body of speculators prepared to release securities and absorb money whenever there is a tendency for the rate to fall, and to release money and absorb securities whenever there is a tendency for the rate to rise.”

But Keynes did not neglect the role of financial institution in the intermediation of capital. We can know easily from Keynes’ opinion of the reason for the difficulty to bring the effective rate of interest below a certain figure.

There is, finally, the difficulty discussed in section iv of chapter 11, p. 144, in the way of bringing the effective rate of interest below a certain figure, which may prove important in an era of low interest-rates; namely the intermediate costs of bringing the borrower and the ultimate lender together, and the allowance for risk, especially for moral risk, which the lender requires over and above the pure rate of interest. As the pure rate of interest declines it does not follow that the allowances for expense and risk decline pari passu. Thus the rate of interest which the typical borrower has to pay may decline more slowly than the pure rate of interest, and may be incapable of being brought, by the methods of the existing banking and financial organisation, below a certain minimum figure. This is particularly important if the estimation of moral risk is appreciable. For where the risk is due to doubt in the mind of the lender concerning the honesty of the borrower, there is nothing in the mind of a borrower who does not intend to be dishonest to offset the resultant higher charge. It is also important in the case of short-term loans (e.g. bank loans) where the expenses are heavy;—a bank may have to charge its customers 1½ to 2 per cent., even if the pure rate of interest to the lender is nil.

Now, as another factor to bring the uncertainty of quantities with a marginal efficiency of capital, there is the change of the demand for money which is a kind of hoards of saving. Keynes divided the demand for money into three parts (1) the transaction demand, (2) the

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27 Ibid., p. 315.
28 Ibid., p. 313.
29 Ibid., Chap. 15.
precautionary demand, and (3) the speculative demand. (1) and (2) are the function of income severally, while (3) is the function of interest-rate, and he stressed on (3) as the demand for money connected with the uncertainty of quantities. Money is a safety asset, but not an earning asset, so that we can not earn any interest from holding money. Nevertheless, if we want to hold money in place of bonds, there need to be some reasons, as The Liquidirt Preference Theory showed. The interest as the reward for releasing liquidity shows the intensity of liquidity preference.

In the quantity theory of money, monetary system such as a Gold Standard, can give an effect on money supply. And the stability of the demand for and supply of money was disturbed, because the demand for money was thought as the stable level at full employment income. On the contrary, in A Tract of Monetary Reform and A Treatise on Money, Keynes stressed on the stability of the demand for and supply of money through both the demand for money and the supply of money.

By the way, in explaining the ‘crisis,’ we have been accustomed to the rising tendency of the rate of interest through the increase of demand for money both for trade and speculative purposes. But Keynes suggested that a more typical, and often the predominant explanation of the crisis is, not primarily a rise in the rate of interest, but a sudden collapse in the marginal efficiency of capital, which in turns to a sharp increase in liquidity-preference and hence a rise in the rate of interest.

Moreover, “the rate of interest is a highly conventional, rather than a highly psychological, phenomenon. For its actual value is largely governed by the prevailing view as to what its value is expected to be.”

Therefore, Keynes considered of the difficulties of maintaining effective demand at the level that was highly enough to provide a full employment, which rose from the association of a conventional and fairly stable long-term rate of interest with a highly unstable marginal efficiency of capital.

Thus, highly unstability of investment and the demand for money as the uncertainty of quantities are reflected on two approaches of Keynes’ criticism for a classical theory. Friedman’s assersion against the uncertainty of quantities is called Friedman’s revolution, and this is a counter-revolution to Keynesian revolution. Firstly, Friedman stated the revival of the quantity theory of money and pointed out “Money does matter,” and stressed the superiority of money-multiplier theory of Keynes’ investment-multiplier theory. The latter shows that \( \Delta Y = k \Delta I \), namely when there is an increment of aggregate investment, income will increase by an amount which \( k \) (investment multiplier) times the inrement of investment. On the contrary, the money multiplier theory shows that \( \Delta Y = v \Delta M \), namely when there is an increment of money supply (\( \Delta M \)), income will increase by an amount which is \( v \) (money multiplier) times the increment of money supply. And \( v \) is considered as a stable velocity function, but not a rigid velocity in the old quantity theory. From this, the meaning of “money does matter” shows that “Only money does matter.” Therefore, Friedman’s opinion means that money supply has an almighty power, so that it is not different

\[ \text{(1)} \]

\[ \text{(2)} \]

\[ \text{(3)} \]

\[ \text{REFERENCES} \]

from the old quantity theory. But, new quantity theory has the idea of \( e_0 \cdot e_2 \) analysis, so that in this point, new quantity theory has the same character of Keynes' theory.

Now, Keynes' usage "a generalised statement of the quantity theory of money,"\textsuperscript{36} is opposed to the quantity theory of money, and explains how the money supply has an sophisticated relationship with price level. Therefore, this character is very different from the revival of the quantity theory by Friedman, too.

Secondly, the liquidity preference theory as comment for a classical theory whose feature is real economy analysis, has the object to introduce the monetary side analysis. And Keynes' assertion of the uncertainty of the demand for money was commented by the stability of Friedman's demand for money function. Friedman considers bonds, equities and commodities as a substitute of money.

\[
\begin{align*}
  & r_b: \text{ coupon payment of bonds} \\
  & (1/r_b) (dr_b/dt): \text{ capital gains and losses} \\
  & r_b - (1/r_b)(dr_b/dt): \text{ bond yield} \\
  & r_e: \text{ nominal return of stocks} \\
  & (1/p)(dp/dt): \text{ rate of inflation} \\
  & (1/r_e)(dr_e/dt): \text{ analogous to the capital gain and losses} \\
  & r_e + (1/p)(dp/dt) - (1/r_e)(dr_e/dt): \text{ stock yield} \\
  & h: \text{ ratio of non human to human wealth} \\
  & \mu: \text{ tastes and preferences} \\
  & W: \text{ wealth } (= Y/r), \quad r: \text{ weighted average of } r_b \text{ and } r_e \\
  & M^D: \text{ the demand for money} \\
  & M^D = f(p; r_b - \frac{1}{r_b} \frac{dr_b}{dt}; r_e + \frac{1}{p} \frac{dp}{dt} - \frac{1}{r_e} \frac{dr_e}{dt}; \frac{1}{p} \frac{dp}{dt} ; h; \frac{Y}{r}; \mu) \\
  & M^D = f(p; r_0, r_e; \frac{1}{p} \frac{dp}{dt}; h; \mu; Y)
\end{align*}
\]

Friedman's demand for money shows the effect of asset preference in comparison with commodities as well as bonds and equities and asserts the stability of the demand for money function. Although those who practice portfolio selection are investors, Friedman considers that investors' selection of commodities are as if entrepreneur's behaviour. In the investor's portfolio selection, the real commodities are also taken into account. But investor's behaviour is different from entrepreneur's behaviour, the former in holding commodities, but the latter is connected with production and then the speculation about the uncertainty of sales will rise. Of course, many real firms will earn financial yields, but it has to be recognized as the function of investors, and is different from the entrepreneur's functions.

From the above considerations, Keynes' discretionary monetary policy and Friedman's \( \chi \% \) rule are necessarily considered as monetary policies. The latter is shown as

\[
M = kY \quad \text{and} \quad \dot{M} = \ddot{k} + \ddot{Y},
\]

namely \( M: \text{ money supply} \)
\[
k: \text{ marshallian } k \\
y: \text{ national income} \\
\cdot : \text{ the rate of increase}
\]

For example, if we assume \( k = 1\% \) and \( Y = 3\% \), then \( M \) should be kept up with fixed

rate (4%). In this case, if \( Y \) rises at 4\%, the rate of money demand should be at 5\% (\( k \) is constant), but it is desirable for central bank to keep up with the same 4\% rule in place of 5\% in accommodating to new circumstances, so that the growth rate should be reduced to 3\% (normal rate).

On the contrary, if the growth rate reduces to 2\%, central bank keeps up with normal rate (4\%), the growth rate shall be back to normal rate (3\%) autonomously. The \( x\% \) rule seems to be the built-in stabilizer about money supply. The effectiveness of this stabilizer depends on both the stability of the demands for money function and the very closely relationships between money supply and investment.

In the depression process of the fluctuation, if the growth rate declines and monetary tightness appears, it is not sure that this circumstances should bring to recovery soon. The investment mind of entrepreneur is necessary, indeed, namely the only increase of money supply cannot rise the investment without the investment mind of entrepreneurs.

Now, I will comment about Keynesian discretionary monetary policy. As to these discretionary policies, usually we consider that central bank does not needs any standard rule, but it is not true. The standard rule must hold, i.e., the Central bank should practice monetary policy so as to keep up investment at the level of full employment savings. Its timing and its magnitude may be changeable, in accordance with circumstances, but we must not forget the presence of a standard rule.

IV. Some Comments on Keynes' Analysis

In making a study of Keynes' analysis as comparing with Friedman's one, the difference of both has become clear. In the former, the uncertainty is considered accompanying in monetary economy, and the policy which exempts from the uncertainty has been secured. On the contrary, in the latter, the uncertainty is considered as money illusion, and the uncertainty will disappear in the long run. Moreover, it will be removed by 100\% reserve system. The difference of both will appear clearly in their opinions about the presence of banks.

The banks from the viewpoint of Keynes are the institution to supply bank deposits that are the most popular money in modern times. Banks can supply money smoothly to national economy by credit creation power under the partial reserve system, but disturb national economy on the other hand. It is the reasonable policy to get the management of money under those assumptions, and these ideas will be adequate even if monetary structure will change under deregulation. On the contrary, Friedman considers that banks will have a power to bring the uncertainty into money supply through credit creation under the partial reserve system. Since the banks' role ought to be neutral in the real economy, the banking system is needed to change from the parcial reserve system to 100\% reserve system, which will take the power of management of money to the central bank. Which opinion is radical, Keynes or Friedman? Of course, it is Friedman's. But, I wonder whether Friedman's opinion will coincide with the developing direction of capitalistic society.

Let's consider the uncertainty in relation with bank's behavior. Banks seem to have the asymmetry of information on comparing with firms. Firms, the borrowers of capital, will be able to finance their investment by issuing primary bonds such as private bonds and
stocks. That means firms have the priority of information on their quality. Banks, the borrowers of capital, will necessarily have the inferiority of information. In order to understand the metamorphosis of money supply, it is important to consider the monetary economy by emphasizing on the roles of banks and non-bank financial institutions as well as central bank or government. The same is true for the consideration of the uncertainties, it is important to consider all these factors, i.e. qualities as well as prices and quantities.

To introduce banks into economic analysis is to get a complete monetary economy beyond Keynes, which implies that the uncertainty of quality is introduced into the monetary economy at the same time. This feature fits to the labour market as well as the financial market. This aspect is introduced into the economic analysis by Stiglitz and others, recently.

Now, how does the introduction of uncertainty of quality develop *The General Theory*?

Firstly, it makes clear the functions of banks in monetary economy. Secondly, it makes clear that the expansion of equilibrium definition.

Keynes recognized that the money was the deposit money created by banks in *Treatise on Money*, and he made clear the role of banks in monetary economy. And in *The General Theory*, he stressed on monetary policy and grasped central bank and private banks as monetary system together, and central bank could control private banks fully, so that he didn't study the behaviour of banks. It is important to study the non-bank financial institutions as well as banks in order to investigate the complete monetary economy. At the same time, this means the introduction of qualities as well as those of prices and quantities.

Next, let's consider the development of equilibrium definition. Keynes introduced unemployment equilibrium. This definition was opposed to the classical theory which stated that unemployment situation was the disequilibrium stage. If Keynes' unemployment (which is also called equilibrium) exists due to the rigidity of prices without the rational explanation, it is necessary that Keynes' theory will be called as the partial theory of a classical theory that assumed the flexibility of prices. The explanation of the rigidity of prices yields the reason why unemployment equilibrium exists and have relationship with the uncertainty of quality.

Thus I think that the nature of Keynes' economics is in the uncertainty of economics, and Keynes' economics can be developed through the analysis of the uncertainty.

Let's summarized the nature of *The General Theory*. The cause of the instability of a capitalistic society depends on the float of investment, and it mainly will be given rise to both the marginal efficiency of capital and the rate of interest. The determination of investment with an inadequate level may bring the unemployment income and products, and may determine the corresponding wages. Under this wages there may be the excess supply of labour, and it may give rise to the pressure to cut in wages but it cannot cut in real wages. Because, firms will determine prices on profit maximization principle, the cut in money wages will give rise to the reduction of prices, with real wages unaltered. Keynes' propositions on the wages are to be found in *The General Theory*.

In assuming that the wage bargain determines the real wage the classical school have slipt in an illicit assumption. For there may be no method available to labour as a whole whereby it can bring the wage-goods equivalent of the general level of money-wages into conformity with the marginal disutility of the current volume
of employment. There may exist no expedient by which labour as a whole can reduce its real wage to a given figure by making revised money bargains with the entrepreneurs. This will be our contention.37

As Keynes suggested that a more typical, and often the predominant, explanation of the crisis is, not primarily a rise in the rate of interest, but a sudden collapse in the marginal efficiency of capital, he stressed on the marginal efficiency of capital, but this factor was thought fundamentally the same as those of a classic theory. Therefore, his feature was looked for the rigidity of the rate of interest. With this factor, speculation fixation by bearness have relationships. It is right that the feature of Keynes' economics consists in the liquidity preference theory.

Now, assume that investment is short of full employment level. How does it happen? Now, we can imagine labour market. The determined employment (N) shows less full employment level. Therefore, wages were determined at \( w \), that was higher than full employment wages (\( w_f \)). At \( w \) wages, there may be excess supply of labour, then wages may be under the pressure of wages cut.

Why are there no wages cut? Firstly, Keynes suggested that labours were inclined to resist reduction of money wages, but this was small reason. Secondly, Keynes had the opinion that labours had no power to reduce real wages by the cut in money wages as mentioned above. Keynes asserted as follows.

As these, Keynes was successful in the explanation of the rigidity of interests by introducing the investor's bear behaviour, but he was not successful in the explanation of the rigidity of wages. Therefore, when wealth effects are considered, Keynes' explanation, as mentioned above are rejected. This is because the expenditure will increase due to the wealth effect when prices decrease. The full employment can occur. However, the time of achievement the full employment level depends on the strength and the speed of wealth effects. Thus, we need the theory of the rigidity of wages, including the uncertainty of qualities of labours to explain unemployment equilibrium.

V. The Introduction of the Uncertainty of Quality and Keynes' Economics

The study of the uncertainty of qualities was introduced by Stiglitz, J.E., and Weiss, A.38 They analysed about loan market and labour market and so on.

Let's consider a loan market firstly. The financial goods dealt with a loan market have a highly heterogeneous nature, and there is an asymmetry of information about the quality of financial goods. As firms know themselves best about the primary securities that they issue to finance, they have the priority of information. On the contrary, banks

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as lenders of capital have less information than the lending companies, so banks have the inferiority of information. Therefore, banks need to collect the information about lending companies, and use variety of screening devices concerning lenders' creditability. Even if banks have complete screening devices, banks can't escape fully from the risk of borrowers' default. If financial intermediaries and borrowers have only one time relationship on an anonymous relationship borrowers can take a favorable selection for themselves between default and payment. If a persistent customers relationship is made up between financial intermediaries and borrowers the relationship will work as the restriction for borrowers' defaults, and will have favorable effects on financial intermediaries from the viewpoints of the cost of collecting informations and screening. Moreover, in markets with imperfect information, the interest rates have the role as screening device for distinguishing between good and bad risks, as well as regulation of demand and supply. Arguments of interest rates as a screening device are as follows: Banks may feel highly risky for those who are willing to pay high interest rates. Then, as the interest rate rises, the banks' average "riskiness" of borrowers increases, probably lowering the bank's expected profits. In other words, banks may face to borrowers in assuming with "high risks high returnes."

According to Stiglitz and Weiss model, banks making loans are concern about the interest rate they have received on the loan, and the riskiness of the loan. On the contrary, as there are asymmetry of information about qualities between banks and borrowers, the interest rate changed by banks may affect the riskiness of the pool of loans by (1) the adverse selection effect and (2) the incentive effect. The former is the effect of sorting potential borrowers; borrowers with low return and low risks can't borrow for higher interest rates, while borrowers with high return and high risks can borrow; so the share of borrowers with high risks among whole banks is higher and the average riskiness of the pool of loans will be higher. The latter is the effect on the actions of borrowers; higher interest rates induce firms to undertake projects with lower probabilities of success which will return a higher profit when they become successful, therefore, higher interest rates will increase the relative attractiveness of riskier projects, and the average riskiness of the pool of loans will be higher.

For both these effects, the expected return by the bank may increase less rapidly than the interest rate; at point $K$ which is the maximum expected return to the bank, the bank's expected return tends to decline, see Fig. I. And the interest rate at which the expected return to the bank is maximized, is called as the "bank-optimal" rate, $r^*$. 

Now, we will consider the loan market (Fig. II). Borrower's demand for funds ($L^D$)
depends on the interest rate \( (r) \) which banks can offer to attract loanable funds. We can explain the demand for loans as a decreasing curve in the upper right quadrant. The supply of loanable funds \( (L') \) is explained as a function of the expected return to the bank per dollar loaned \( (\rho) \) which depicted in the lower left quadrant. Moreover, we can draw a 45° line in the lower right quadrant, and the curve shown the relation between \( r \) and \( \rho \) in the upper left quadrant. Thus, we can plot a nonmonotonic curve \( L' \) in the upper right quadrant as a function of \( r \) with the bank-optimal** rate \( r^* \), through the upper left quadrant, the lower left quadrant, and the lower right quadrant at each interest rate.

Now, we can consider two cases. In the first case \( (L_1^D) \), there are the excess demand for loanable funds \( (Z_1) \) at \( r^* \). If banks increase its interest rate beyond \( r^* \), they would lower \( \rho \). Therefore, banks would not increase the interest rate, regardless of the excess demand for loanable funds, so that an equilibrium will exist at \( A \) with credit rationing by \( Z_1 \). We call it a credit rationing equilibrium, which consists with bank's profit maximization. On the contrary, in the second case \( (L_2^D) \), there exists a excess supply equilibrium, which makes bank's interest rates to decline, so that \( E_2 \) equilibrium will exist. Since \( E_2 \) consists in \( L' \) curve, bank's profit maximization will be realized. As the policy problem, we have to manage the loanable fund supply curve from \( A \) to \( C \) or the loanable fund demand curve from \( C \) to \( A \). It is the great advance to be able to recognize a credit rationing equilibrium by stressing on the behaviour of banks and the uncertainty of qualities. Now, we will consider the qualities of labour and unemployment equilibrium.

In traditional economics, labours have been considered as homogeneous. Even if labours were recognized to be different, the complicated labour should be changed to the simple labour. This analysis does not mean the introduction of qualities of labours.

We have to introduce the uncertainties of qualities of labour, so that we can recognize the underemployment equilibrium. In a labour market, labours have the priority of information as labours know fully the qualities of ones' labours. On the contrary, employers or firms have to take the position of inferiority of information as they cannot know the information of labours' qualities, so that there are asymmetry in the labour market. Labours pay money on their education to get higher qualities of labour for higher wage. Therefore,

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**Fig. II**
high quality labours demand for high wage, and their demand seems to be stronger than the low quality labours. On these assumption, we can recognize an adverse selection effect and an incentive effect like financial goods. Through both effects, the decrease of wages will have the possibilities of decrease of labours' qualities, and we can recognize it as the risks to the reduction of the productivity of labours.

Now, the relation between the expected return by the firm (\( \pi \)) and the wage rate (\( w \)) is depicted in the upper left quadrant in Fig. III; the decrease of wage rate may increase the expected return through the decrease of cost of firms. Below a point \( w^* \), \( \pi \) may actually decrease by the decrease of labours qualities. And then, the firms demand for labours may decrease by the decrease of wage rates below point \( w^* \). \( w^* \) means the firms-optimal rate.

We will illustrate a unemployment equilibrium in Fig. III. Because the supply of labours depends on \( w \), while the demand for labours depends on \( \pi \), we cannot use a conventional demand/supply curve diagram. The supply of labours (\( L^s \)) is a nonmonotonic function of the relation between \( N \) and \( w \) in the upper right quadrant. \( L^s_1 \) curve case means unemployment equilibrium, and \( L^s_2 \) curve case means demand/supply equilibrium. In the former case, firms don't select \( E_1 \). Because the decrease of wages in excess supply situations have the possibility of decreasing the expected return of firms through the decrease of the labours' qualities. Therefore, firms may prefer the demand for labours at \( w^* \), which makes sure of the maximization of \( \pi \), so that an unemployment equilibrium will exist. As the policy problem, the management of attainment of full employment equilibrium is to shift the demand for labour curve from \( A \) to \( C \), or to shift the supply of labour curve from \( C \) to \( A \). On the contrary, in \( L^s_2 \) curve case, there is an excess demand at \( w^* \), so that wage rate will increase and a demand/supply equilibrium at \( E^s_2 \). Like these there exists an asymmetry between excess supply and excess demand situations. In former case, there exists unemployment equilibrium, while in latter case, there exists a demand/supply equilibrium. These shows the validity of Keynes' opinion that a classical theory is not correct in the presence of involuntary unemployment, but is correct after the realization of full employment.

\[ \text{Fig. III} \]

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