THE PROCESS OF WRITING THE GENERAL THEORY AS 'A MONETARY THEORY OF PRODUCTION'

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I. *Introduction*

By the publication of the *Collected Writings of John Maynard Kaynes*, the process of the generation of the *General Theory* is now open to us. This is very interesting not only from the viewpoint of history of economic science, but also from the viewpoint of reassesment of Keynes' economics. To develop the history of the *General Theory*, however, we should have two things to do. One thing to do is to recognize the relation between the *Treatise on Money* and the *General Theory*. The other is to know the true essence of the *General Theory*. For the first, the point is whether we can regard the *General Theory* as 'the natural evolution'[1] from the *Treatise*, and for the second, the point is where we find the essence; that is whether we find it in 'the theory of effective demand,' or in 'a monetary theory of production.'

For the first point, Klein, Patinkin and Mehta differ greatly in their views. In his the *Keynesian Revolution*, Klein regards the *Treatise* as one of Keynes' writings in those days of 'a good classical economist,'[2] and describes the *Treatise* as 'a book in classical economics based on two important and well known theories.'[3] Patinkin also regards the *Treatise* as a different type of a book from the *General Theory*, because "in his preface to the *General Theory*, Keynes describes that book as a natural evolution from the *Treatise*. This may have been true in retrospect, but it certainly does not reflect Keynes' feelings at the time he wrote the *Treatise*. For at that time Keynes' regarded the *Treatise* not as a step in an ongoing evolution of his thinking, but as the definitive work on monetary economics for years to come."[4] Above views, especially that of Klein may be 'the standard interpretation' as Mehta calls it. But Mehta does not agree with this interpretation. "Anyone who has been a cursory acquaintance with the Keynesian literature cannot help being struck with the scanty attention given to the *Treatise* in a description of the Keynesian Revolution, . . . One does not refer to the *Treatise* except as one of the many books Keynes wrote in his unregenerate 'classical' days."[5] Then Mehta proposes his new interpretation instead of the standard one.

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[1] Keynes, J.M., *The General Theory of Employment, Interest and Moeny*, London: Macmillan, 1936. p. vi.
[2] Klein, L.R., *The Keynesian Revolution*, New York: Macmillan, 1947. p. 20.
[3] *Ibid.*, p. 15.
[4] Patinkin, D., 'The Process of Writing The General Theory: A Critical Survey' in *Keynes, Cambridge, and The General Theory*, ed. by Patinkin, D and Leith, J.C., Ontario: Macmillan, 1977, p. 3.
[5] Mehta, G., *The Structure of the Keynesian Revolution*, London: Martin Robertson, 1977, p. 147.

Above views are both extremes although both are representative in this sense. But we have intermediate view which is expressed by Moggridge in his *Keynes*. According to him Keynes "produced a book that looks in two directions—back to his Marshallian inheritance with its methods and particular concerns and forward to some of the concerns of his *General Theory*."[6] Backward elements are that i) assumptions of neutrality of money, and ii) full employment, and forward elements are that i) emphasizing the role of stocks of outstanding assets in the determination of the rate of interest, ii) bringing expectations into theories of the operation of the economy, and iii) the beginnings of an effort to understanding business investment dicisions.[7]

The reason why there are different interpretations about relationship between the *Treatise* and the *General Theory*, may be found in different recognitions of the essence of the *General Theory*. According to Klein the essence is the theory of effective demand, or rather multiplier theory in a narrower sense. So he evaluates the multiplier theory advocated by Kahn in 1921, because "it was just the step needed to show that savings and investment determine in equlibrium the level of output as a whole and not the rate of interest."[8] On the contrary, he devaluates the liquidity preference theory because "we need not regard the liquidity preference theory as an essential element of the modern Keynesian system. It merely rounds out the theory and makes it complete."[9] Patinkin expresses similar assesment like follows "insofar as the theory of liquidity preference is concerned, this is clearly a contribution of Keynes, but it is one that he had already developed considerably in the *Treatise*. This leaves the theory of effective demand as the distinctive analytical contribution of the *General Theory*."[10]

Of course we do not deny the fact that the effective demand theory is one of the essential elements of the *General Theory*. But the more essential element is the denial of neutrality of money, or 'a *Monetary Theory of Production*.' Here it is enough to show that the lecture title by Keynes was 'a *Monetary Theory of Production*' when he started to write the *General Theory*, and the title of the paper contributed to Festschrift for Professor Spiethoff was also 'a *Monetary Theory of Production*.' Here Keynes denied 'real exchange economics' in which money did not play its essential role, and he intended to form 'monetary economics' where money did play its particular role. So, one who tries to see a succession between the *Treatise* and the *General Theory*, is expected to find an essential element in 'a *Monetary Theory of Production*' as the natural evolution from the *Treatise*. On the contrary, one who sees a big leap between two writings finds a core element in the effective demand theory. But like Mehta, there is one who sees a succession between two writings, but finds the essence in the effective demand theory. Up to the present we have a lot of studies from the viewpoint of the effective demand theory, but there are few from the viewpoint of 'a *Monetary Theory of Production*.' If we take the former view, we must admit the role played by Kahn, Joan Robinson and the Cambridge Circus in the process of writing the *General Theory*. However, if we take the latter, we can recognize the contribution by Hawtrey, Hayek, Robertson and above all Keynes himself. This paper tries to summarise the studies

[6] Moggridge, D., *Keynes*, London: Macmillan and Fontana Books, 1976, p. 76.
[7] *Ibid.*, p. 79.
[8] Klein, *op. cit.*, p. 36.
[9] *Ibid.*, p. 43.
[10] Patinkin, *op. cit.*, p. 10.

so far by the former view, and to construct a new history of writing the *General Theory* from the latter view.

II. *The process of writing the General Theory as the effective demand theory*

When we talk about the effective demand theory, we must clear its meanings. Patinkin defines it as follows, "in terms of the familiar diagonalcross diagram, it is not only that the intersection of the aggregate demand curve with the 45° line determines the equilibrum level of output, but even more so that changes in income themselves act as an equilibration device . . . Correspondingly, as we have just seen, Keynes emphasizes that a critical part of his analysis is the assumption that the marginal propensity to consume is less than unity . . . This is the crucial point of the General Theory: the theory of effective damand as a theory which equilibrates aggregate demand with supply by means of automatic changes in the level of output."[11]

After Patinkin defined the effective demand theory like above, he scrutinises the process of the emergence of the *General Theory.* Here we want to summarise his major contributions before discussing in detail.

1) In the process of forming the effective demand theory, the formulation of the miltiplier by Kahn and the article by Joan Robinson (I mean '*The Theory of Money and the Analysis of Output*') have been so far highly evaluated. But Patinkin criticises their contributions because they are far from the rigidly defined effective demand theory.

2) Against the role played by Circus, he rather evaluates roles by Kahn, Robertson and Hawtrey.

3) While he admits the role of group of the scientists, he reassesses Keyens' own contribution to the formulation of the effective demand theory.

As regards the first point, Patinkin proves that multiplier theory formulated by Kahn cannot be regarded as the effective demand theory. He points out two reasons. The one reason is like follows. According to Patinkin, "the multiplier of Kahn's article is the dynamic one, showing in terms of a declining geometric series the sequence of 'secondary employments' generated by a once-and-for all increase in public works expenditures, and then deriving the multipilier by summing up this infinite series."[12] This criticism means that while Keynes derives multiplier from the outcome of the permanent increase in investment ΔI in a comparative static sense, Kahn derives it from the dynamic sums as the once-and-for all increase in investment. The other reason is as follows, "thus the real contribution of Kahn was less in demonstrating that the multiplier was greater than unity, than in defining and analysing the notion of leakages, and then demonstrating rigorously that as a result of these leakages the expansionary process converges to a finite limit. This is another reason why I do not consider the main thrust of Kahn's article to have been in the direction of the theory of effective demand."[13]

By the way, '*The Theory of Money and the Analysis of Output*' of Joan Robinson was

[11] *Ibid.*, p. 10.
[12] *Ibid.*, p. 18.
[13] *Ibid.*, p. 19.

highly evaluated by Klein because she "was actually writing one of the first expositions, in which she is so lucid, of the really essential parts of the *General Theory of Employment, Interest, and Money*."[14] But for Patinkin, this Robinson's article cannot be regarded as the effective demand theory because "the article did not refer explicitly to a consumption function, and a fortiori did not expalin the crucial role that the less-than-unity marginal propensity to consume played in the equilibrating process."[15]

Next we want to refer to the Patinkin's second contribution. As to the role played by Circus, Moggridge explained in detail in the volume XIII of the *Collected Writings of John Maynard Keynes*. Here Moggridge points out two decisive outside influences namely, the world-wide slump after 1920, and discussions in Cambridge during 1930–1 in the process of moving changes in output. But Patinkin criticises the received version like Moggridge because it "assigns too large a role to the discussions of the Cambridge 'Circus,' and correspondingly too small a one to the criticisms of such individuals as Hawtrey, Robertson, and even Hayek" and he devaluates the role of the Circus from the viewpoint of effective demand theory. "In his aforementioned reconstruction, Moggridge reports that 'James Meade, and active participant in the discussions [of the Cambridge 'Circus'], returned to Oxford in the autumn of 1931 at the end of his years' visit to Trinity, Cambridge. He is cautiously confident that he took with him back to Oxford most of the essential ingredients of the subsequent system of the *General Theory*. But as I shall later demonstrate, Meade could not have taken back with him the most essential ingredient of all—the throry of effective demand—which was not really developed until 1933."[16]

On the contrary, Patinkin emphasizes the roles of Hawtrey and Hayek because "it should not be forgotten that Hawtrey and Hayek played an important role in bringing about one fundamental element of this development—namely, the broadening of Keynes' view of the nature of monetary theory." Roles played by Hawtrey and Hayek which Patinkin points out are that "Hawtrey was the first one to point out to Keynes that it was incumbent upon him also to supply a theory of output," and "Hayek's complaint about the absence of a theory of capital and interest."[17]

Finally, about the third contribution of Patinkin, he proved that Keynes formulated effective demand theory by himself indicating Lorie Tarshis lecture note for 20 November, 1933, and Robert Bryce's notes from 4 December, 1933.

As Patinkin shows, the essential part of the *General Theory* from the viewpoint of effective demand theory, had been formed by the end of 1933 by Keynes himself in answering the criticisms and suggestions to the *Treatise*. But against this standard interpretation, Mehta shows new interpretation in which he states that effective demand theory had been already constructed in the *Treatise*. His new interpretation is as follows, "the *Treatise* describes a process of contraction or expansion of money income and real income. The saving-investment tool is used to describe this process. If the amount of saving is equal to the investment that is being undertaken, income is in equilibrium. Suppose now that saving exceeds investment. The first effect of this is that the price of investment goods and consumption goods falls. Initially the system responds to a disturbance by a price adjustment.

[14] Klein, *op. cit.*, p. 39.
[15] Patinkin, *op. cit.*, p. 15.
[16] *Ibid.*, p. 6.
[17] *Ibid.*, p. 7.

When prices fall, entreprenurs make losses. As a result of their losses, they will reduce the offers they make to the factors of production, and output and employment fall. In the second stage the system responds by quantity adjustments."[18] But if there are not other elements in Mehta's new interpretation, we cannot admit that this is the new interpretation. Because Harrod already pointed out that "it must not be supposed that Keynes had not variations of output in mind."[19] However, the matter is, as Harrod pointed out, which comes first price-adjustment or quantity-adjustment. And in the *Treatise* it is the price-adjustment which comes first. And even if we admit the quantity-adjustment, this per se cannot be regarded as the effective demand theory. The effective demand theory must contain following three mechainsms: namely, 1) quantity adjustment process, 2) fall in effective demand of investment-goods is amplified by the consumption-income relation, 3) saving becomes equal to investment in the final equilibrium position by variations in output. If we can find above mechanisms in the *Treatise*, we can admit Mehta's new interpretation.

As to the quantity-adjustment process, Mehta quotes the definition of normal profit by Keynes, namely "that rate of remuneration which, if they were open to make new bargains with all the factors of production at the currently prevailing rates of earning, would leave them under no motive either to increase or to decrease their scale of production, and states that quantity-adjustment mechanism is built into the very structure of Keynes' model, . . . Klein fails to see the crucial role played by Keynes' theory of profit in a process of income expansion and contraction."[20] As long as the verbal explanation is concerned, we can admit that quantity-adjustment mechanism was already incorporated into the *Treatise*. However, as Moggridge emphasizes, "Keynes had made a serious error in the specification of the Fundamental Equations for the purposes of handling movements of output that often made them inconsistent with his verbal exposition of the processes studied."[21]

As regards the second mechanism, Mehta emphasizes variation of consumer's price and investment-goods price in the same direction.[22] But the relation of the two kinds of prices which Keynes had in mind in his *Treatise* was one that they move independently each other. And this idea was criticised by Kahn because Kahn thought that they must move in the same direction. Finally as to the equality of saving and investment, Mehta quoates 'the consummation of the whole process of pressure.'[23] But it is not clear whether 'the consummation process, works under the assumption of less than unity marginal propensity to consume. According to Patinkin, in the *Treatise*, Keynes assumed a unity marginal propensity to consume.[24]

As we have explained above, Mehta did not succeed in his new interpretation. Moreover in the volum of XIII of the *Collected Writings*, there are many evidences that the effective demand theory had not been incorporated into the *Treatise*. Even in the *General Theory*, Keynes confesses "my so-called fundamental equations' were an instantaneous picture taken on the assumption of a given output."[25] So, Mehta in his postscript says,

[18] Mehta, *op. cit.*, p. 153.
[19] Harrod, R.F., *The Life of John Maynard Keynes*, London: Macmillan, 1961, p. 433.
[20] Mehta, *op. cit.*, p. 154.
[21] Moggridge, *op. cit.*, p. 90.
[22] Mehta, *op. cit.*, p. 157.
[23] *Ibid.*, p. 157.
[24] Patinkin, *op. cit.*, p. 12.
[25] Keynes, *op. cit.*, p. vii.

"my views have naturally undergone some modification after the publication of the *Collected Writings* of Keynes," and admits that "I am now aware that the problem is much more complex than I had hitherto thought." But he never changes his idea that "antecedents of the multiplier theory are to be found in the Treatise."[26]

Here I want to summarise my impression of the history of the *General Theory* viewed from the effective demand theory.

1) If we define rigidly the effective demand theory like Patinkin, there is no case against his article. But, as Patinkin states himself, if we reassess the roles of Hayek, Hawtrey and Robertson, they must be evaluated from the viewpoint of 'the broadening of Keynes' view of the nature of monetary theory.' In section 3, I want to demonstrate how they contributed to the construction of 'a *Monetary Theory of Production.*'

2) As regards the Mehta's new interpretation, I agree with him in his reassesment of the *Treatise,* however, it is very dubious that we can find the effective demand theory already in the *Treatise.* If we reasses the *Treatise,* it must be done as a step towards 'A *Monetary Theory of Production.*' The *Treatise* itself is never 'A *Monetary Theory of Production.*'

III. *The Process of Writing the General Theory as 'A Monetary Theory of Production'*

Keynes explains about the role of money in the *General Theory* in his preface, "this book, on the other hand, has evolved into what is primarily a study of the forces which determine changes in the scale of output and employment as a whole, and, whilst it is found that money enters into the economic scheme in an essential and peculiar manner, technical monetary details falls into the background. A monetary economy, we shall find, is essentially one in which changing views about the future are capable of influencing the quantity of employment and not merely its direction."[27] As we can judge from this statement, the *General Theory* is in its essence the monetary theory. But often we neglect the monetary aspect of the *General Theory,* because 'technical monetary details fall into the background.' "But as soon as we pass to the problem of what determines output and employment as a whole, we require the complete theory of a Monetary Economy."[28] So if we admit Keynes' statements, the *General Theory* must be 'a *Monetary Theory of Production.*' But, when Keynes published the *Treatise,* he did not have 'a *Monetary Theory of Production*' in his mind, although Mehta argued that Keynes had it.

Hawtrey criticised Fundamental Equations when he commented draft of the *Treatise.* "Mr. Keynes' formula only takes account of the reduction of prices in relation to costs, and does not recognize the possibility of a reduction of output being caused directly by a contraction of demand without an intervening fall of price."[29] Keynes gave answer to this comment like follows, "the question how much reduction of output is caused, whether by a realized fall of price or an anticipated fall of price, is important; but not strictly a mo-

[62] Mehta, *op. cit.*, pp. 195–6.

[27] Keynes, *op. cit.*, p. vii.

[28] *Ibid.*, p. 293.

[29] *The Collected Writings of John Maynard Keynes*, XIII, ed., by Moggridge, London: Macmillan, 1973, p. 152.

netary problem. I have not attempted to deal with in my book, though I have done a good deal of work at it. I am primarily concerned with what governs prices; though of course every conceivable factor in the situation comes in somewhere into a complete picture."[30] At this time, he thought that 'the question how much reduction of output is caused is not strictly a monetary problem.' In the same correspondence to Hawtrey, Keynes repeated above point. "I repeat that I am not dealing with the complete set of causes which determine volume of output. For this would have led me an endlessly long journey into the theory of short-period supply and a long way from monetary theory;—though I agree that it will probably be difficult in the future to prevent monetary theory and the theory of short-period supply from running together. If I were to write the book again, I should probably attempt to prove further into the difficulties of the latter; but I have already proved far enough to know what a complicated affair it is."[31]

Important points which we can find in this answer to Hawtrey's comment, are 1) Keynes thought at that time that monetary theory is the theory for providing explanation of price phenomena, and not for providing explanation of output or employment. 2) However, Keynes accepted Hawtrey's comment, and he recognized that in near future, it is necessary to coordinate monetary theory and the theory of short-period supply. But in order to coordinate two kinds of theories and construct a *Monetary Theory of Production*, it is necessary to recognize first of all the nature and role of money in the real world. So I want to show that what kind of debates were there about the nature and role of money just after the publication of the *Treatise*. These debates are recorded in chapter 4 of the volume XIII of *The Collected Writings of John Maynard Keynes*. Discussions about the role of money were done between Kahn, Robertson, Hayek, and Keynes. Here I want to point out three main issues, 1) the influence of money on consumer's price level and investment goods price level and the relation between two kinds of prices; 2) the relation between money, saving and investment; 3) the concept of natural rate of interest.

(1) The relation between consumer's price (p) and investment-goods price (p')

Keynes' basic idea of the relation between two kinds of prices is summarised in a Rejoinder to Robertson in the *Economic Journal* in Sept. 1931. According to this, investment-goods price, or "the price of non-liquid assets is not directly affected by the price of consumption goods." He argues that the price of non-liquid assets is determined independently of the price of consumption goods. "My central thesis regarding the determination of the price of non-liquid assets is that, given (a) the quantity of inactive deposits offered by the banking system, and (b) the degree of propensity to hoard or state of bearishness, then the price level of non-liquid assets must be fixed at whatever figure is required to equate the quantity of hoards which the public will desire to hold at that price level with the quantity of hoards which the banking system is creating. That is to say, the price of non-liquid capital assets is a function of the quantity of inactive deposits in conjunction with the degree of propensity to hoard."[32]

Robertson criticised this idea and argued that p' would rise when p fell. On the contrary, Kahn argued that p must rise when p' rose, that is to say, both prices moved in the same direction. According to Robertson, while saving over the cost of investment-goods

[30] *JMK* XIII, p. 145.
[31] *Ibid.*, p. 146.
[32] *Ibid.*, p. 222.

will lead to the fall of the price p, this excess saving leads to the rise of the price p' because excess saving will be used for investment. So he insists that if there is no opposite change of the two kinds of prices, excess saving must be hoarded. "Mr. Robertson seems to think that the whole of these funds, in the absence of increased hoarding, will have to be directed to the purchase of the newly produced non-liquid assets already on the market, . . . , so that the aggregate selling price of the newly produced non-liquid assets will increase by exact amount of the excess savings."[33] Against this idea, Keynes refuted that "this is to mistake entirely the nature of the capital market."[34] The point which Keynes refuted Robertson is that the price level of investment goods does not depend on savings flow, but on demand for money stock, as Joan Robinson explained in the article '*A Parable on Saving and Investment*' contributed to *Economica*. So Keynes never listened to Robertson's view that 'the price levels of consumption goods and investment goods will move in opposite direction—like buckets in a well.'

But Keynes' attitude towards Kahn's comment was different from that to Robertson. Kahn expressed his view about the relation between two prices, in his correspondence twice in April 1931 and once in August 1931. The essence of his comment can be found best in his letter dated 15th August 1939. "I still maintain that in ascribing p and p' to different sets of causes you are sheltering yourself behind the arbitrary asymmetry of your definition of saving . . . . If one clears the decks of your special definitions, it is surely clear that p and p' are directly related except in the extreme case when no part of profits is devoted to consumption."[35] This comment implies, as Moggridge explained, "that if investment rose, p would rise."[36] To this comment Keynes gave answer in his rejoinder to Robertson quoted above. "A change in the price of non-liquid assets may react on the price of consumption goods because it will cause a change in profits, which, in turn, may affect in the opposite direction the amount saved by the recipients of profits."[37] Here Keynes admitted that p' would influence upon p not directly but indirectly.

(2) The relation between money, saving and investment

Hayek argued in his review article *to the Treatise* titled '*Reflection on the Pure Theory of Money*' that "voluntary saving always finds its way into investment," "a disequilibrium between saving and investment is necessarily the result of action on the part of the banking system," and "investment due to an increase in the quantity of money involves the public in a corresponding amount of what may be called 'forced' savings," so the "the necessary condition of avoiding credit cycles is for the banking system to maintain the effective quantity of money absolutely and for ever unaltered."[38] To this view, Keynes refuted in an article titled '*The Pure Theory of Money, A Reply to Dr. Hayek*' in Economica in November 1931. "In my view, saving and investment can get out of gear without any change on the part of the banking system from 'neutrality' as defined by Dr. Hayek, merely as a result of the public changing their rate of saving or the entrepreneurs changing their rate of investment, their being no automatic mechanism in the economic system to keep the two rates equal, provided

[33] *Ibid.*, p. 228.
[34] *Ibid.*, p. 222.
[35] *Ibid.*, p. 219.
[36] Moggridge, *op. cit.*, p. 90.
[37] *JMK* XIII, p. 223.
[38] *Ibid.*, p. 250.

that the effective quantity of money is unchanged."[39] Here we can see the idea that saving is independent from investment, that is to say, saving and investment cannot be equalized through changes in the rate of interest. In this sense, Keynes showed divergence from classical saving-investment relation.

In the *Treatise*, Keynes argued that saving and investment could differ excatly equal amount to profit because profit was excluded from the definition of income. But against this peculiar definitions of income and saving, Kahn, Hawtrey, Robertson and Hayek unanimously refuted. For a while Keynes never listened to their refutations because saving and investment must be always equal if he included profit in the definition of income. But in his '*Notes on the Definition on Saving*' delivered to Robertson dated on 22nd March 1932 Keynes admitted the definition of income in Hawtrey's, Hayek's and D.H. Robertson's sense and said "I have now bowed the knee."[40] However, if he changes his definition of income, saving is always equal to investment as the old-fashioned common sense suggests. The old-fashioned common sense supposes that in this equality 'saving is the dog' and 'the investment is the tail.' But for Keynes, the relation between saving and investment is quite adverse. "The implications of this use of language are decidedly different from what 'common-sense' supposes. For S' (saving) always and necessarily accomodates itself to I (investment)... S' is not the voluntary result of virtuous decisions. In fact S' is no longer the dog, which common sense believes it to be, but the tail."[41] Keynes explained the mistake of common-sense as follows, "The mistake of the common-sense view lay not in the belief that an increase of savings S' necessarily means an increase in the value of investment. The mistake lay in supposing that a decreased expenditure on consumption leads to an increase of S'." "Therefore it is of great significance to show that a decreased expenditure on consumption does not necessarily lead to an increment of real capital even if aggregate real output is unchanged; whilst in practice a decreased expenditure on consumption may lead to a decreased real output (as a result of its effect on Q) and vice versa."[42] Here we recognize great access to the saving-investment relation expressed in the General Theory. But at this stage, he still insisted the role of profit as the main factor for economic fluctuations.

(3) The concept of natural rate of interest

While Hayek accused Keynes of the absence of the theory of capital and interest in his review article contributed to *Economica*, Keynes generously accepted this accusation in his rejoinder to Hayek. "This is quite true: and I agree with Dr. Hayek that a development of this theory would be highly relevant to my treatment of monetary matters and likely to throw light into dark corners." So Keynes reflected in the sense that "the neglect of Böhm Bawerk by English pre-war economists was as mistaken as their neglect of Wicksell." Then he promised that "later on, I will endeavour to make good this deficiency."[43] But Keynes did not accept the concept of the natural rate of interest which Hayek defined in his '*Prices and Production*.' According to Keynes, it is because while Keynes' natural rate concerned with the short period, Hayek's rate concerned with the long period. Hayek's natural rate is defined under the situation that "if the prevailing relationship of capital to

[39] *Ibid.*, p. 251.
[40] *Ibid.*, p. 275.
[41] *Ibid.*, p. 276.
[42] *Ibid.*, pp. 278–9.
[43] *Ibid.*, p. 253.

consumption were to be permanent, and if entrepreneurs were acting on this latter assumption, without other errors of forecasting." On the contrary, Keynes difined it "by reference to the rate which would any moment equalize saving and investment, after taking account of the existing psychology of the market, including errors of forecasting, and irrespective of whether or not the then prevailing rate of investment is expected to be permanent."[44] This definition may be a big leap from the definition given in the *Treatise*, and shows great access to the marginal efficiency of capital in the *General Theory*.

Another point which Keynes agrees with Hayek's view along with the development of capital and interest theory, is about the task of the monetary theory. Hayek expressed his view in his '*Prices and Production*' as follows, "it means also that the task of monetary theory is much wider one than is commonly assumed; that its task is nothing less than to cover a second time the whole field which is treated by pure theory under the assumption of barter, and to investigate what changes in the conclusions of pure theory are made necessary by the introduction of indirect changes. The first step towards a solution of this problem is to release monetary theory from the bonds which a too narrow conception of its task has created."[45] Keynes expressed full agreement with this view of monetary economy and monetary economics. The point lies in, as quotation implies, that task of monetary theory is 'to investigate what changes in the conclusions of pure theory' under the assumption of barter. This is the great departure from the assumption of neutrality of money in the *Treatise* and great progress towards '*a Monetary Theory of Production.*' Thus Keynes gradually has changed from the pure theory of money into '*a Monetary Theory of Production*' through the debates after the publication of the *Treatise*. And this can be proved by the fact that Keyne's lecture title in Cambridge changed from '*The Pure Theory of Money*' in 1929–30 to '*The Monetary Theory of Production*' in 1933. Moggridge explained about this change of lecture title as follows, "in his first lecture under new title on 10 October 1932, Keynes made it clear that this change of title did signify a change in attitude and that he was at the beginning of a new book," and in this lecture "Keynes developed the distinction between a neutral economy, and a monetary economy. He placed particular emphasis on the idea that in a monetary economy short-period supply prices of factors of production did not all behave in the manner characteristic of machines."[46]

But the decisive stage from the pure theory of money into 'a *Monetary Theory of Production*' was when Keynes wrote the article titled 'a *Monetary Theory of Production*' which was contributed to Festschrift für Arthur Spiethoff. In the headline of this article he insisted that "in my opinion the main reason why the problem of crises is unsolved, or at any rate why this theory is so unsatisfactory, is to be found in the lack of what might be termed a monetary theory of production." And he explained what 'a *Monetary Theory of Production*' is like. "The distinction which is normaly made between a barter economy and a monetary economy depends upon the employment of money as a convenient means of effecting exchanges—as an instrument of great convenience, but transitory and neutral in its effect .... Money, that is to say, is employed, but it is treated as being in some sense neutral. That, however, is not the distinction which I have in mind when I say that we lack 'a *Monetary Theory of Production.*' An economy, which uses money but uses it merely as a neutral link

[44] *Ibid.*, p. 254.
[45] *Ibid.*, p. 254.
[46] *Ibid.*, pp. 411–2.

between transactions in real things and real assets and does not allow it to enter motives or decisions, might be called—for want of a better name—a real-exchange economy. The theory which I desiderate would deal, in contradistinction to this, with an economy in which money plays a part of its own and affects motives and decisions and is, in short, one of the operative factors in the situation, so that the course of events cannot be predicted, either in the long period or in the short, without a knowledge of the behavior of money between the first state and the last." He accused Marshall and Piogu of their orthodox monetary theory being real-exchange economics. After he made distinction between real-exchange economics and monetary economics, finally he suggested that he began to write the *General Theory* as 'a *Monetary Theory of Production.*' "Accodingly I believe that the next task is to work out in some detail a monetary theory of production, to supplement the real exchange theories which we already possess. At any rate that is the task on which I am now occupying myself, in some confidence that I am not wasting my time."[47]

As I have shown using materials of volume XIII of '*The collected Writings of John Maynard Keynes,*' the problem which always occupied Keynes' mind was what role does money play in the real world. I do not deny the fact that the effective demand theory is one of the essential element of the *General Theory.* But the denial of neutrality of money was the biggest issue which Keynes intended to develop in the *General Theory.* If this is the case, we must admit generously the statements of Keynes that the *General Theory* was the natural evolution from the *Treatise.* In his development from the *Treatise* to the *General Theory,* Hawtrey, Kahn, Robertson and Hayek played big roles. But it was Keynes himself who played the biggest role to construct monetary economics.

There leaves however the question to be answered. That is to say, what is 'a *Monetary Theory of Production?*' I want to answer this question in my next article.

[47] *Ibid.,* pp. 408–11.