FROM A TREATISE ON MONEY TO THE GENERAL THEORY: JOHN MAYNARD KEYNES' DEPARTURE FROM THE DOCTRINE OF FORCED SAVING

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From A Treatise on Money to the General Theory: John Maynard Keynes' Departure from the Doctrine of Forced Saving*

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Abstract

I examine John Maynard Keynes' struggle with the doctrine of the classical forced saving during the period 1924-1936 from when he worked on *A Treatise on Money* to the completion of his *General Theory*. The forced saving notion has been developed as a key mechanism of how monetary expansion results in wealth redistribution and change in production in the classical school. I primarily focus on the role of discussion and criticism in the development of Keynes' thought. I investigate what led John Maynard Keynes to completely abolish ideas related to forced saving and place his emphasis on effective demand in the *General Theory* and its process. I provide evidence suggesting that the development of the *General Theory* is closely linked with the abolition of the forced saving doctrine and argue that such notion is internally inconsistent with Fundamental Equations and subsequent theory of effective demand in the explanation of the problem of unemployment.

JEL Classification: B22, B31

Key Words: forced saving, hoarding, lacking, *General Theory*, *Treatise on Money*, quantity theory of money, John Maynard Keynes, fundamental equations, production time lag

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I. Introduction

John Maynard Keynes described his own *General Theory of Employment, Interest and Money* as "a long struggle of escape,… a struggle of escape from habitual modes of thought and expression.…The difficulty lies, not in the new ideas, but in escaping from the old ones, which ramify, for those brought up as most of us have been, into every corner of our minds" (JMK,VII, xxiii). In this paper, I examine his struggle in the classical doctrines of forced saving, the quantity theory of money and study how he "escaped" from such established notions to formulating a new integrated framework of money and real variables. Although the historical aspects of the development of Keynes' thought undoubtedly play an important part in the formulation of Keynes' monetary theory, it is out of the scope for this paper.[1] Instead, this study primarily focuses on the role of discussion and criticism in the development of Keynes' thought. In particular, I show how Keynes' skepticism over the doctrine of forced saving led him to challenge the arguments implicitly built upon the full employment assumption in the classical regime in the explanation of credit cycles and question the importance of the time lag in production theory, both of which had been heavily emphasized by his Cambridge colleague Dennis H. Robertson. I argue that his new formulation in the *General Theory* is closely related to his debates with Dennis Robertson over these doctrines and the criticisms of *A Treatise on Money* from Ralph G. Hawtrey that shed light on the importance of expectation and demand in determining employment and output. This analysis contributes to the existing literature on Keynes' monetary thought by adding to the understanding of the nature of the revisions of the *Treatise* related to the forced saving doctrine and the weight he put in the discussion of different forms of capital and their relevance to the formulation of his *General Theory*.

II. Forced Saving

[1] See Clarke(1988) for a comprehensive historical account of the development of Keynes' thinking.

The doctrine of forced saving or similar terminologies used to describe the idea such as Jeremy Bentham's "forced frugality", John Stuart Mill's "forced accumulation" or "imposed lacking" as termed by Dennis H. Robertson has appeared in various schools of economic thought from the British classical school to the Austrian school. In general it refers to a mechanism through which capital for the productive sector is created by increasing the money supply or banks' expanding credits, which would induce a redistribution of real resources in favor of the entrepreneurs and thus enhance employment. This doctrine can be dated back to as early as Jeremy Bentham ([1816], 1839) who wrote on the effect of a rise in money supply and described it as an "unprofitable income tax upon the income of fixed incomists" (Bentham [1816] 1839, 45). He argued that increasing money supply would enhance national wealth but at the expense of national comfort and justice. The mechanism, which he called "forced frugality", is described as follows:

> If on the introduction of the additional money into the circulation,… if before it come into any hands of that description, it have come into hands by which it has been employed in the shape of capital, the suffering by the income tax is partly reduced and partly compensated. It is reduced, by the mass of things vendible produced by means of it:…Here, as in the above case of forced frugality, national wealth is increased at the expense of national comfort and national justice. (Bentham [1816] 1839, 45)

III. Dennis H. Robertson and Forced Saving

In particular, Dennis H. Robertson (1933) conceptualized the relation between forced saving and the course of industrial fluctuation by adopting a Marshallian "day" analysis approach and the classical advanced wage fund theory. The influence of Robertson's ideas on saving and hoarding on Keynes' work is remarkable. As Keynes put it in the preface of the Treatise: "Mr. D.H.

Robertson has cast a penetrating light on certain fundamental matters, and this book would never have taken its shape without the help of his ideas" (JMK, TM I, xviii). His ideas on the subject are summarized briefly as follows:

There is a time lag between wage payment and consumption of current output. The advanced wage fund received by workers at time t-1 ("the previous day") is to be spent on consumption goods produced in time t ("any particular day"). Forced saving or automatic lacking occurs when banks expend credits between t-1 and t increases so that entrepreneurs receiving the extra credits from banks would be able to bid more resources from the consumers.[2] This action would drive up the price of both consumption and capital goods. Workers' consumption at time t would then fall short of the value of the income at time t-1. Resources are then said to be transferred involuntarily from the wage-earners to the producers through forced saving. This is termed as "automatic lacking" by Robertson. "The additional stream of money secures a part of goods for those from whom the additional stream of money flows and deprives the residue of the public of consumption which they would otherwise have enjoyed" (Robertson [1926] 1989,47). And under the classical advanced wage fund theory, the sustenance of laborers comes from the accumulated fund of capital and this "led to the general conclusion that it is the accumulated fund of capital (or "circulating capital" in some versions) that, by being "advanced" to the laborers by the capitalists or employers, constitutes the fund out of which labor is paid" (see Gordon 1973). It follows from this theory that extra capital and subsequently wealth are created when resources are diverted to accumulation of capital as the quantity of money increases. It would enlarge the wage fund for the next round of production as laborers are conceived to be paid by the previously accumulated stock of capital in the classical wage fund doctrine. On top of that, induced lacking occurs when individuals seek to maintain the real value of their holdings of money by additional

[2] Or when the velocity of circulation of money increases. But this paper focuses on how an increase in money supply (i.e. action on the side of the central bank) creates forced saving and results in transference of resources.

saving as a result of automatic lacking. Lacking allows producers to increase circulating capital including the employment of new workers which plays a crucial role in Robertson's monetary theory. The banking policy suggested by Robertson implicitly rests largely on the assumption of full employment. The starting point is that the banking system can create money by way of loans predominately. Credit expansion would result in more resources being diverted to the production of capital goods and is associated with inflation. Increasing money supply which contributes to forced saving is sometimes "beneficial" to the community. For instance, in times when there is real productivity growth, and if the banks fail to take "appropriate action" (i.e. increasing loans), the saving will "go to waste" and be "dissipated in the form of lower prices and increased consumption by the public at large. This is because it is assumed that the "previously employed" cannot spend on consumption at time t until the bank policy has realized its effect. The bank can prevent this undesired result if, and only if, it makes new loans or investments on a sufficient scale to prevent prices from falling and ensure that the public really does the saving which it intends to do. Robertson considered such act of bank to be enabling the depositors' "thrifty intentions to bear fruit" (see Robertson 1940). It is worth noting that the whole story rests on the production time lag. Without such lag the notion of forced saving simply would not hold. When supply of loans go up as a result of credit expansion, wage fund would also go up. There would be no automatic lacking or dislacking to speak of as the consumption of individuals would never be reduced to below a level they intended.

IV. **Forced Saving and The Advanced Wage Fund Theory**

As illustrated above, the notion of forced saving is closely linked with the idea of time lag in production in the classical school which presumes payment to labor precedes production. Although the wage fund is not rigidly fixed, its amount is strongly related to capital stock available to an economy. John Stuart Mill (1859) summarized the classical doctrine as "There is

supposed to be at any given instant, a sum of wealth, which in unconditionally devoted to the payment of the wages of labour. This sum is not regarded as unalterable, for it is augmented by saving, and increases with the progress of wealth; but it is reasoned upon as at any given moment a predetermined amount". Labor is conceived to be paid out of a previously accumulated stock in the classical political economy, which has been known as the advanced wage fund theory. In his *Essays on Some Unsettled Questions of Political Economy* ([1844], 1874, 118), he also illustrated clearly the process of "forced accumulation". He pointed out that when paper money is inconvertible, "the banker by issuing it levies a tax on every person who has money in his hands or due to him. He thus appropriate himself a portion of the capital of other people, and a portion of their revenue" and this results in a distribution of resources:

> The capital might have been intended to be lent, or it might have been intended to be employed by the owner: such part of it as was intended to be employed by the owner now changes its destination, and is lent. The revenue was either intended to be accumulated, in which case it had already become capital, or it was intended to be spent: in this last case, revenue is converted into capital: and thus,… the depreciation of the currency, when effected in this way, operates to a certain extent as a forced accumulation. (118)

More capital stock would then be available for production in the next period. However the doctrine of forced saving is in fact controversial in the classical regime. The arguments are inconsistent with the general classical assumption of full employment and so based on this assumption such doctrine would be fallacious (see Gordon 1973). Taussig (1894) noted that the wage fund theory was "copied from book to book" in a "rough and ill-defined form" whilst Marshall regarded the doctrine as "pretentious and misleading".

As a matter of fact, Keynes had always found the ideas associated with "forced saving" vague. Since the end of the First World War there has been a growing interest among Cambridge

economists in works on monetary theory of production and theories of the banking policy. One major goal of their work is to investigate trade cycles in a world with money. Their inquiry into whether money produces real effects marks a clear departure from the classical doctrine.

V. Robertson's Early Influence on Keynes in Connection with Forced Saving

Robertson's influence on Keynes in the study of industrial fluctuation can be dated back to early 1910's. In a paper presented to the Political Economy Club's meeting in 1913 titled "How Far are Bankers Responsible for the Alternations of Crisis and Depression?", he emphasized the role of bankers in determining who shall have the immediate of resources in explaining industrial fluctuations (JMK,VI,1). Although credit expansion was not considered as a means for banks to reallocate resources, traces of Robertson's thought can be found in the elaboration of the role played by banks in production. In the paper Keynes argued that "individuals hold in suspense and leave with their bankers, which bankers advance directly or indirectly for capital purposes…. For it is within the power of bankers to allow those who direct capital operations to encroach on the community's reserve free resources to a greater or less degree" (JMK, VI, 4-5). At this stage, Keynes had not yet developed a concrete framework of how such reallocation is done in full. Conjecturally this is where he began to consider the forced saving mechanism in diverting resources into production.

VI. Time Lag in Production and Forced Saving in the *Treatise*

Keynes defined capital in three major forms in the *Treatise* namely fixed, working and liquid capital. Some observations can also be made from the draft tables of content in regard to his position in the roles played by these different forms of capital in the course of credit cycles. In the draft table of contents dated 13 June 1925, Chapter X and XI in Book II "The Theory of Credit" was entitled "The function of the banks in relation to the supply of working capital" and "The meaning and significance of working capital" respectively (JMK, XIII, 41-42). This shows

clearly that in the earlier drafts of the *Treatise*, working capital has a particularly crucial role to play in credit cycles. However these chapters are no longer found in the subsequent draft tables of content and the finalized table of contents of the *Treatise*. In the finalized version of the *Treatise* it was treated as digression and was included because "the fluctuations in the rate of investment have not been treated, sufficiently for my purpose, elsewhere" (JMK, VI, 85). Such treatment reflects that Keynes did not himself feel totally comfortable with this capital theory as he felt that there is not a solid theoretical foundation for the causal mechanism between credit inflation, the flow of capital, in particular working capital and output and therefore he separated these chapters from his major discussion and identified them as digression. It is nonetheless important to examine what appears in this digression to understand how this credit theory stands in contrast with his monetary thought. In the digression, he suggested that these three forms of capital are related to the credit cycles by the way they affect the investment rate and they play somewhat different roles in the course of business cycles. The time lag argument is implicit in the discussion. All forms of capital tend to be positively correlated with fluctuations in the volume of employment but the working capital plays the most central role in credit cycles among the three. Working capital is defined as being the aggregate of goods in the course of production, manufacture, transport and retailing, as are required to avoid risks of interruption of process. It is therefore most closely linked with the length of the production process. The longer the length of process and the higher the intensity of employment, the more working capital would be needed to avoid interruption of production process. In the working capital theory, the banking system plays an important role in transferring real resources from unproductive consumption to working capital in times when trade is brisk where unproductive consumption is consumption which could be forgone by the consumer without reacting on the amount of his productive effort, basically that is consumption by the "previously employed". Interruption of process would slow down trade and

so banks should conduct policies that apply "the flow of available income in one way instead of another, namely, by supporting productive consumers instead of unproductive consumers" (JMK, VI, 114). As production process lengthens, the "forced saving" role by banks becomes increasing crucial in maintaining the stability of trades.

VII. Keynes' Struggle over the Notion of Forced Saving in the *Treatise*

The above discussion indicates Keynes' hesitant position in the notion of time lag in production and forced saving as components of his monetary theory in the *Treatise.* Patinkin (1975, 28) points out that "the *Treatise* was originally conceived only as a systemization and elaboration of the theory that lay behind the policy recommendations of the *Tract [of Monetary Reform]*, which had not been systematically developed there". His drastic revisions of the *Treatise* also reflect this hesitant position and his discussion with Robertson in the course of preparation of the *Treatise* had in fact led him to further challenge the forced saving notion. Keynes was dissatisfied with Robertson's *Banking Policy and the Price* (1926) whose theory is based on notion akin to forced saving. He agreed that credit inflation in general would produce some amount of new hoarding but it is impossible to know the exact amount. Also such new hoarding might be wholly or partially at the expense of other new investments. In such case, the effect of forced saving in diverting resources to production is at doubt (JMK, XIII, 38-39). In spite of the disagreement, their discussions had had profound effect on each other's work. Robertson ([1926], 1989) himself stated in the introductory chapter that:

> I have had so many discussions with Mr. J. M. Keynes on the subject matter of chapters V and VI, and have rewritten them so drastically at his suggestion, that I think neither of us now knows how much of the ideas therein contained is his and how much is mine. (5)

The discussions with Robertson, to a very large extent, enabled Keynes to rethink the arguments in the forced saving doctrine and question its validity in his monetary theory of production. In

contrast to Keynes, Robertson insisted that the doctrine of advanced wage fund and forced saving played a central role in the monetary theory of production. This is reflected in his evaluation of Keynes' theory. Most of his criticisms are based on the premises of this doctrine. In a letter to Keynes dated 27 February 1925 Robertson showed his discomfort with Keynes' not adhering to the advanced wage fund doctrine. He stated explicitly that he was uncomfortable at in inclusion of all the earnings of fixed capital in the 'wages bill' as "the essence of the wages of labor is that they are advanced: while profit is only received at the time of sale" (JMK, XIII, 25-26). This is a point that is worth emphasizing as the debates between them on the idea had substantial influence on the development of Keynes' ideas.

Keynes' skepticism over the notion of forced saving in preparation for the *Treatise* can be further elucidated by the removal of a chapter titled "The Part Played by the Banking System" which hinted at banks transferring resources from the "previously employed" to the "currently employed" by means of mechanism similar to forced saving if not the same.[3] This chapter appears in the draft table of content dated 2 August 1929. The below will provide a detailed examination of this chapter so as to understand why Keynes eventually took it out from the *Treatise:*

The arguments made by Keynes in this chapter are akin to those made by Robertson. They are essentially founded on the assumption of full employment. A substantial part of the chapter discusses the importance of "working capital", whose additional supply when business fluctuates is obtained mainly through the banks. The viewpoint in this chapter is that banks play a central role in adjusting the volume of working capital in the credit cycle. In section (e) of this chapter "By forced transferences of purchasing power from 'unproductive' consumers", Keynes provided a discussion of credit inflation. He raised a question "is this [credit inflation] no better than a confession of failure, or does it do something, though at the expense of price stability, really to

[3] A variorum of drafts of this chapter is documented in Keynes, vol. XIII, p.83-113.

satisfy the demand for additional investments?" And his answer to this question in this removed chapter is "… in doing this, really allow some additional investment to take place" (JMK, XIII, 104). The mechanism through which additional investment is created by banks is similar to that proposed by Robertson. However, Keynes has been more cautious in interpreting the group of individuals in the community whose wealth has been transferred to production. Notably he also made use of the notion of advanced wage fund in this chapter. Through credit inflation, resources are diverted from "unproductive consumption" to "productive consumption" by means of higher prices. The unproductive consumption comes from those "previously employed". Since they do not contribute to the production in the next period, they are considered as "unproductive". Yet this does not exclude the possibility that this group of workers can be employed in the next period. In that case, at least part of this group would constitute to "productive consumers". The implicit assumption is that the previous employed workers cannot consume until the next period when credit inflation has taken into effect. We can see that this part of the discussion is heavily influenced by Robertson:

> But not only do those in the possession of money incomes find that their real incomes are diminished; those who are in possession of a stock of money also discover that this stock has less than its previous real value, and may, therefore, be induced to save on a greater scale than they would have otherwise, in order to make good the loss which they have involuntarily suffered in the value of their stock of money…. Mr. D.H. Robertson has called the first way 'automatic lacking', and the second way 'induced lacking'. (JMK, XIII, 105)

Keynes then questioned the validity of the aforementioned argument by carefully elaborating "at whose expense has this augmentation [of working capital] taken place?" He made a careful

distinction between the "previously employed" and the depositors. In his view, the transference comes from the former but not the latter. "So long as depositors as a body are not drawing on their previous deposits for purposes of consumption, it is not their deposits (or the equivalent of these in available income) which they are consuming, but their current income" (JMK, XIII, 106). Depositors typically save part of their income in each period but typically it is their current income that determines the current consumption (or consumption in the next period in the advanced wage fund theory), therefore despite the fact that increased prices diminish the real value of deposits, no additional real resources will be diverted from the depositors to the borrowers. Also new loans would worth less in the next period.

> For whilst the borrowers can repay when the due date of their loan arrives by parting with less purchasing power than what they had expected to part with, and therefore retain additional purchasing power which they may or may not employ to replenish working capital, the amount of credit available in the hands of banks, as a result of these repayments of old loans, wherewith to make new loans to business, is worth correspondingly less.[4](JMK, XIII, 107)

Therefore the only group of individuals that could ultimately contribute to the transfer of real resources is the previously employed who by assumption cannot spend their income until the next period when prices increase. Keynes argued that "there is in this case a sacrifice of real income by the factors of production previously employed, the equivalent of which sacrifice thus becomes available to provide for additional employment" (JMK, XIII, 108). This chapter in the end has been taken out from the finalized version of the *Treatise*. In the following I will speculate the

[4] This paragraph has been retained in the final version of the *Treatise* in vol.1 of chapter 19: Some Special Aspects of the Credit Cycle (JMK, TM I, 270-271). Robertson has been cited very frequently throughout this chapter indicating that this forced saving discussion in the *Treatise* is highly related to his correspondence with Robertson. And this chapter seems to summarize Robertson's position rather than reflecting Keynes' own thought in the subject.

reasons for which he removed this chapter. I conjecture that it is largely a result of that he was unsatisfied with applying the notion of forced saving in explanation of trade cycles and decided to substantially cut down on its discussion in the *Treatise*:

It is unclear that the forced saving mechanism is compatible with Keynes' pure theory of money in the *Treatise*. Recall in the *Treatise* that the second fundamental equation is given by (reproduced from TM I, 124):

$$\Pi = \mathrm{W}_1 + \frac{\mathrm{I} - \mathrm{S}}{\mathrm{O}}$$

where Π stands for the price level of output as a whole; W_1represents the rate of earnings per unit of output, I is investment; O is total output of goods and S is saving.

And the profit equation is:

$$Q = I - S$$

where Q is total profit. For total profit to be positive which leads to a tendency for price to go up and entrepreneurs to expand output, investment has to be larger than saving. The question here is, can the price inflation and output expansion by means of the forced saving mechanism be reconciled with the above equations with no ambiguity? In Keynes' exposition, he redefined money income:

> I propose, therefore, to break away from the traditional method of setting out from the total quantity of money irrespective of the purposes on which it is employed, and to start instead… with the flow of the community's earnings or money income [that excludes net profits], and with its twofold division(1) into the parts which have been earned by the production of consumption goods and of investment goods respectively, and (2) into the

parts which are expended on consumption goods and on savings respectively. (JMK, TM I, 121)

Saving is a proportion of money income based on (2) and the money income as defined in the *Treatise* does not include profits; therefore its level would not be lowered by the existence of profits. In fact, using Robertson's framework, when induced lacking is present with credit expansion, saving would increase and it is unclear that the increase in saving must be lower than the increase in investment that could generate profits which divert resources to production in Keynes' fundamental equations.

Patinkin(1976) also provides evidence that the Fundamental Equations were a product after the draft table of contents of 2 August 1929 i.e. after the above "chapter 23" has been removed. "For the distinctive of these equations is their dependence on the difference between savings and investment, and the question of this difference does not seem to have been referred to until the draft table of contents of October 1928 (JMK XIII, p.79, title of Chapter 11)" (Patinkin 1976,29). This is consistent with the above conjecture that Keynes felt that the forced saving notion is inconsistent with his major analytical tools in the *Treatise*: the Fundamental Equations.

Secondly, the notion of forced saving is based on the supply side argument where saving provides the finance for investment. Under this doctrine, an increased level of saving would enlarge investment. It is based on the notion that through expanding credits, the banking system could exert a "forced" amount of saving (or real resources) from the consumers or to be precise, the "previously employed" to be used in production and thus increase output in the future. In fact, it is a story of redistribution of resources between consumption and capital goods. Trade cycles can be adjusted through credit expansion that diverts resources to production (in Robertson's term, increase in "shortlacking" through credit expansion) in times of slumps. Note that the

argument is supply driven: control of credit is a means to regulate the supply of circulating capital. As pointed out by Eshag (1963, 59), the doctrine of 'forced saving' implicitly assumes full employment. In Keynes' model in the *Treatise* however, in times of slumps, i.e. when I<S, the banks could adjust the trade cycles through generating more demand for working capital by means of credit expansion. This would give rise to an increase in cash deposits. The argument is based on stimulating demand for working capital rather than stealing resources from the previously employed to the currently employed. It is unclear how a notion based on full employment can be compatible with theories built to explain the fluctuation of output and applied to the periods of slumps.

Aside from the fact that the forced saving doctrine does not seem to be consistent with the causal mechanism of price determination as guided by his fundamental equations, Keynes also contested the magnitude of real resources brought to production on the ground of "forced saving". In response to Robertson's draft on *Banking Policy and the Price Level* in 1925, he agreed that:

> Credit inflation tends to result in some amount of new hoarding, yet it is impossible to determine its amount a priori. Some of the so-called new hoarding may be created partly or wholly at the expense of other new investment. In such case, the effectiveness of credit inflation would be at doubt. He concluded that the policy of inflation cannot be recommended until the credit of it is weighted against the debit of inflation. (JMK, V, 38-39)

He also commented in the *Treatise* that aside from forced saving or automatic lacking

> there are other ways of augmenting the income deposits,-for example, by a transfer from the savings deposits or by refraining from the purchase of securities with normal current

> savings;[5] or the velocity of the income deposits, instead of their amount, may be increased.[6] Thus 'induced lacking' seems to me to be too precarious a source of additional savings to deserve separate notice. (JMK, TM I, 269)

Keynes might appear unclear and hesitant in the positions he took in the *Treatise.* Indeed, it represents his struggle in his departure from the classical doctrine. In the preface to foreign editions of the *Treatise* written in 1932 described the notion of forced saving as something:

> not the theory of Book III below, though it may have certain affinities with it. I believe that the ideas, which I have just endeavoured to sketch, are essentially unclear and that, if a thorough attempt is made to render them clear, they will undergo a series of modifications which will gradually have the effect of bringing them into conformity with my own theory. …For whilst I hold that the policy of the banking system influences the difference between saving and the value of investment, I do not hold that there is any direct, necessary or invariable relationship between this difference and the amount of credit,…which could be deduced from a knowledge, however complete, of banking and currency statistics. (JMK, TM I, xxiv)

In other words, he was unsure about how to make the notion of forced saving compatible with his theory of money in the *Treatise* and also did not think it is always empirically true. In its original preface, he also confessed that the ideas in the *Treatise* might appear confusing due to his struggle of thought:

> I am acutely conscious of its defects. It has occupied me for several years, not free from other occupations, during which my ideas have been developing and changing, with the

[5] These are deposits that come from income created by the loans through for example, credit expansion and therefore is a result of the increase in working capital.
[6] These deposits concern mainly with money hoarding. So under uncertainty, saving deposits tend to increase.

> result that its parts are not all entirely in harmonious with one another…. There is a good deal in this book which represents the process of getting rid of the ideas which I used to have and of finding my way to those which I now have…I am not clear exactly what the difference is on this definition between 'voluntary' saving and 'forced' saving. (JMK,V, xvii-xix)

Hayek (1932, 133) actually interpreted Keynes' monetary theory in the *Treatise* as a rejection of the terminology of forced saving and that he replaced the notion by "simply of investment being in excess of saving; and there is much to be said in favor of this". This marks Keynes' clear divergence from the classical forced saving doctrine.

After the publication of *A Treatise on Money*, Keynes attempted to clarify his thoughts in it which he had "put inadequately in Book Three" with a letter written to Robertson dated 22 March 1932 (JMK, XIII, 275). He further challenged the notion of forced saving and raised the following questions:

> (1) Does 'forced' saving only arise (a) when the banking system lends money to the government or to entrepreneurs or (b) when the velocity of circulation is increased?
>
> (2) Can it be regarded as a function of the amount by which prices rise or the amount by which deposits increase or the change in the velocity of circulation?
>
> (3) How, in exact terms, is this amount of forced saving to be measured?
>
> (JMK, XIII, 285)

Keynes thought that there were no satisfactory answers to the above questions and concluded that in his *Treatise*

> my critical departure from the previous theories of 'forced' saving or 'induced' and 'automatic' lacking lies not in my definitions[7]… but in my conclusion … that induced and automatic lacking are not simple functions of monetary factors such as the quantity of money or its velocity of circulation …, that they can arise in other ways than as a result (to quote D.H.R.) of ' an additional daily stream of money being brought on to the market, and that quantitatively, their amount cannot be deduced from banking statistics however complete. (JMK, XIII, 287)

VIII. Towards the *General Theory*

a. Arguments based on the Fundamental Equations

In the aforementioned correspondence with Robertson, Keynes redefined his income as $E' = E + Q$ to make it parallel to the then conventional definition of income that defines income as the cost of production plus profit in an attempt to present his idea in the *Treatise* in a way that could be more easily understood.[8] Keynes himself confessed in the preface to foreign editions of the *Treatise* that "My definition of income is thought paradoxical because I exclude from it (as explained below) windfall profits and losses, and my definition of saving , being the excess of income thus defined over expenditure on consumption, corresponds to my definition of income" (JMK, TM I, xxiii). Also in the materials he prepared for his lecture on 25 April 1932 titled "Notes on Fundamental Terminology I" he wrote:

> The object of the slightly different terminology proposed below [the new terminology] does not differ from the object of the slightly different terminology which I employ in my *Treatise*. I have been led to adopt it partly as the result of experience as to what the reader

[7] By that Keynes meant his new definitions for income and saving.
[8] See JMK, XIII, 275-279 for the redefinition.

in fact finds troublesome and partyly out of a resolve to use language which is more unequivocally adapted to short-period problems. (JMK, XXIX, 35)

Keynes provided two alternative definitions for savings and income (reproduced from JMK, XIII, 275-277):

$$\mathrm{S} = \mathrm{E} - F \text{ and } \mathrm{S}' = \mathrm{E}' - F$$

$$E \text{ and } \mathrm{E}' = E + Q$$

The former definition for saving is the one in the *Treatise* while the latter one is the conventional definition for saving and it must be identical to the value of current investment.For example, Robertson defined $\mathrm{S} = \mathrm{E} + \mathrm{Q} - \mathrm{PR}$ where PR stands for the expenditure of the community on consumption goods (see JMK, XIII,235). E is the cost of production; F denotes the amount of money spent on consumption. S is exactly the saving in the *Treatise*. E' refers to the cost of production E plus the net profit of entrepreneurs Q in the *Treatise*, "which is the total income in Hawtrey's, Hayek's and D.H.R.'s sense, and in the sense to which I have now bowed the knee" (JMK, XIII, 275). In the notes Keynes placed his focus on F (consumption) rather than S as he felt that it would "avoid the difficulties which many readers seem to have found in my definition of saving. This is possible because F is independent of the rival definitions of income and saving, since $E - S = \mathrm{E}' - \mathrm{S}' = \mathrm{F}$" (JMK, XIII, 277).

Evaluating at fixed output so that the cost of production does not change and $\Delta\mathrm{E} = 0$, this gives:[9]

$$\Delta\mathrm{Q} = \Delta\mathrm{I} + \Delta\mathrm{F}$$

where Q is the net profit of entrepreneurs, I is investment and F is the amount of money which is spent on consumption.

The above equation can be rewritten as $\Delta\mathrm{I} = \Delta\mathrm{Q} - \Delta\mathrm{F}$

[9] At this stage, Keynes' monetary theory of production is still limited to a tendency analysis so here the output level and the cost of production are fixed at the original level; ΔQ is the realized profit for the given output.

This formulation is remarkable as it allows Keynes to focus on investigating how investment affects profits (later on output) and subsequently the relationship between investment, output and consumption, which is the skeleton of his *General Theory*. This is a clear departure from the forced saving doctrine.

One major shortcoming of the fundamental equation in the *Treatise* is that it is only about "tendency" for output to go up or down when profits change. The change in the excess of investment over saving was deemed the motive force leading to change in the volume of output. But since the equation is derived from the quantity theory of money, output is actually assumed to be fixed and so it does not provide a formal analysis of output to change from one equilibrium to another. As Leijonhufvud (1968, 23) put it, "The trouble was that the Fundamental Equations still incorporated a variable purporting to represent the total physical volume of output, in the way of the traditional Equation of Exchange, and thus they were inconsistent with the verbal explanation of the processes studied".

Keynes himself is aware of this inconsistency and had been seeking to provide a formal equilibrium analysis of his monetary theory of production. This can be traced back to his correspondence with people in Cambridge and a number of lectures he held amidst 1932. In particular, in May 1932, his gave his lecture regarding his evolving monetary theory of production which attempted to analyze the change in output instead of just the change in profit. Clearly his ideas have been discussed intensively by the 'Circus': the younger cohort of Cambridge economists that includes Richard Kahn, Austin Robinson, Joan Robinson and Piero Sraffa and the materials of this lecture came from a 'manifesto' from Richard Kahn and Austin and Joan Robinson (JMK, XXIX, 38-42). Keynes claimed that it is "characteristic of a normal economic community that ΔO and $\Delta E'$ are never of opposite signs and that $\Delta E' - \Delta F$ and $\Delta E'$ are never of opposite signs"(39). This means when change in income is positive, normally change in

output would also be positive. And if income increases implies consumption would also increase then the increase in consumption is given by an amount less than the increase in income. This is essentially the idea of the consumption function.

Also since $\Delta I = \Delta E' - \Delta F$and it is assumed that $\Delta E' - \Delta F$ has the same sign as $\Delta E'$, this implies that ΔI has the same sign as$\Delta E'$ and so ΔI has the same sign as ΔO.[10] This gives the earliest form of the model in the *General Theory*. An important point is that the above is in fact compatible with the fundamental equations, yet more assumptions have been imposed and the focus of analysis has switched from saving to consumption.

b. The New Arguments

In Chapter 6 of the first draft of the *General Theory*, Keynes summarized his employment theory as follows (reproduced from JMK, XXIX, 65):

The amount of employment is determined by a set of simultaneous equations:

$$N = f_1(Q)$$

$$E = f_2(N)$$

$$C = f_3(D)$$

$$D = E + Q = I + C$$

where N is employment, Q is prospective quasi-rent, E is the prospective variable cost, I is the prospective investment. Suppose we know the supply function f_1, the cost function f_2, the propensity to consume f_3, the amount of employment would be determined entirely by the amount

[10] Later it will be further assumed that $\Delta E'$ and ΔF are of the same sign but $\Delta E'$>ΔF

of current investment. The above forms the essence in Keynes' *General Theory* where the demand for current investment plays the most crucial role in determining output and employment.[11] Investment in turn is determined by the schedule of the marginal efficiency of capital and the market interest rate with the "investment multiplier" determines the magnitude of the effect investment has on income. "Saving and investment are the determinates of the system, not the determinants. They are the twin results of the system's determinants, namely, the propensity to consume, the schedule of the marginal efficiency of capital and the rate of interest" (JMK, XIII, 183). One point that needs to be emphasized is that despite Keynes' abolishing the classical forced saving doctrine which essentially rests on the full employment assumption, his change in position is still a gradual one and is an evolution from his fundamental equations. As he himself stated that

> The relation between this book and my *Treatise on Money*, which I published five years ago, is probably clearer to myself than it will be to others; and what in my own mind is a natural evolution in a line of thought which I have been pursuing for several years, may sometimes strike the reader as a confusing change of view. (JMK, VII, xxi-xxii)

A remarkable departure from the classical school in Keynes' new theory is the investment-saving relationship, which is linked with the abolition of the doctrine of forced saving. Based on the classical loanable fund theory, saving as the source of finance for investment and interest rate is the tool the equalize investment and saving in equilibrium. Keynes held the belief that saving in general is insensitive to small changes in interest rate and instead, it largely responds to the change in income and in his *General Theory*, it is income that equalizes investment and saving in

[11] Although the terminology "quasi-rent" has been removed from the final version of the *General Theory* after an intense debate with Ralph Hawtrey, the essence of entrepreneurs maximizing expected profits remain intact in the *General Theory*.

equilibrium and therefore changes in investment as initial disturbances, determines changes in income and saving. The notion of forced saving disappears totally in this argument.

> But if what these two quantities determine is, not the rate of interest, but the aggregate volume of employment, then our outlook on the mechanism of the economic system will be profoundly changed. A decreased readiness to spend will be looked on in quite a different light if, instead of being regarded as a factor which will, cet. par., increase investment, it is seen as a factor which will, cet. par., diminish employment. (JMK, GT, 185)

c. Ralph George Hawtrey's Influence on Keynes

In the interval between the *Treatise on Money* and *General Theory*, Keynes' thinking was under heavy influence of Ralph Hawtrey. As Keynes admitted it himself in his response to Hawtrey for his criticisms of the *Treatise* in a letter to Hawtrey dated 16 February 1931, "It is very seldom indeed that an author can expect to get as a criticism anything so tremendously useful to himself" (JMK, XXIX, 10). The switch of his expositions from emphasizing the difference between investment and saving to effective demand is closely linked with the criticism from Hawtrey. He pointed to Keynes that

> in practice there is always considerable delay in adjusting prices to a change in demand, … We have here a disturbance of equilibrium independent of any change in prices, and therefore independent of the existence of windfall gain or loss or of any difference between saving….Thus the change of prices when it does occur is not by itself an adequate measure of the departure from equilibrium. (JMK XIII, 151)

In other words, when demand changes, price does not adjust immediately and it is the accumulation of stocks which lead to the price to fall and the ultimate cause of windfall loss is the

shrinkage of demand. Hawtrey also criticized that Keynes' fundamental equations in fact do not "exhibit the causal process by which the price level is determined" (JMK, V, 120), it is only a statement that there is a divergence between the price and cost when S diverges from I, but the ultimate cause of the divergence remains unclear.

> Mr. Keynes's 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.… the discrepancy between investment and saving is not the cause of the divergence between prices and costs; it is the divergence between prices and costs. The cause of the divergence (in so far as it is monetary) is to be found in a change in demand, i.e. in the consumers' outlay. (JMK, XIII, 152-153)

In a letter to Keynes dated 6 December in 1930, Hawtrey still emphasized the significance role played by change in demand, which is reflected in the fluctuation in stocks as the cause of change in output. He argued that

> the excess of saving over investment cannot be the cause of the reduction of output by entrepreneurs. The cause is to be found in the accumulating stocks which lead them to anticipate a future price fall…. the first result of a change in demand is a reaction upon sales, stocks and output, and only afterwards are prices affected. (JMK, XIII, 165-168)

Keynes apparently dealt with his criticism seriously. His reply to Hawtrey dated 1 June 1932 illustrates this point. "I now put less fundamental reliance on my conception of savings and substitute for it the conception of expenditure" (JMK, XIII, 172). The monetary theory of production in the *General Theory* is fundamentally based on effective demand. Such emphasis marks his real departure from the doctrine of quantity theory of money. Keynes felt that there is

not an established mechanism linking the change in the quantity of money to either investment demand or propensity to consume and since his theory of production is driven by these two notions, quantity theory of money is no longer serviceable in his model. He wrote that

> it has been usual to suppose that an increase in the quantity of money has a tendency to reduce the rate of interest, at any rate in the first instance and in the short period. Yet no reason has been given why a change in the quantity of money should affect either the investment demand-schedule or the readiness to save out of a given income. (JMK, VII, 182)

In addition in the *General Theory*, Keynes focused on expectation of demand (i.e. effective demand) rather than the actual profit in the current period as governance for production. Producers are presumed in the *General Theory* to hire at a level that maximize their expected profit depends on their expectation of the schedule of effective demand that depends in turn on their expectation of the sum of sale proceeds from consumption and investment. Keynes admitted himself that in the *Treatise* he did not "distinguish clearly between expected and realised results in entrepreneurs' profits" (JMK, XIII, 437). His method in the *Treatise* was to regard the current realised profit as determining the current expectation of profit, which is not very accurate as producers respond to change in views about the future rather than basing their production plan merely on the actual profit in the current period. The influence for the revision of thought can be traced back to one of the comments made by Ralph G. Hawtrey on the *Treatise on Money*. One major fault Hawtrey noticed of Keynes' fundamental equation is that "it is rigidly confined to actual movements of the price level, … fundamental equations do not record tendencies which are influencing the situation before any actual price quotations are affected" (JMK, XIII, 150-169). Subsequently in the *General Theory*, it is the expectation of demand (i.e. effective demand) by

entrepreneurs that governs production rather than the existence of profit in the current period, reflected by an increase in price that creates tendencies for output expansion. Although it is beyond doubt that "the most recent results usually play a predominant part in determining what expectations are" (JMK, VII, 51), current production no longer depends rigidly on the past price. Uncertainty plays an extremely important part in the *General Theory*. The arguments including the liquidity preference are fundamentally based on that producers have to form expectation on demand on consumption goods and investment goods and it is of no doubt that Hawtrey's criticism hints at the importance of uncertainty in production and led Keynes into refining his theory which originally takes the change in current profit as the key determinant of industrial fluctuations.

IX. Suppression of Time Element in the *General Theory*

The abolition of the notion of forced saving and quantity theory of money in the *General Theory* is tied with suppression of time in his formulation. Note that time plays a crucial role in these two doctrines whilst its significance has disappeared in the *General Theory*. Keynes himself described in the *General Theory* as "To me at least it [the process to reach equilibrium in the *General Theory*] was a wholly new idea. It has nothing to do with velocities of circulation, time-lags, etc. though these things enter a detailed, formal analysis of the order of events" (JMK, XIV, 90).

In the *General Theory*, the application of the length of the production period in theory of production has been questioned by Keynes. In his "Notes on the Measure of 'Roundaboutness' " Keynes provided conditions under which an increase in capital is not associated with a lengthening in the production period, as most exponents on the subject purported, the Austrian school in particular. He also pointed out that it is unclear how the "roundaboutness" or length of

production would change with the same amount of capital but its employment rate varies (JMK, XXIX, 155-157). He wrote:

> If, however, we are dealing with a community subject to change or one which is not in equilibrium, can any clear meaning be given to 'the length of the production period'? If so, I do not know what it is. Perhaps those who apply this concept to credit cycle problems will instruct us as to what it means in this context. (157)

Unlike the arguments made by Hawtrey or Robertson, in the *General Theory*, Keynes no longer emphasized the time lag in the production of different forms of capital goods and the role of capital in generating consumption goods in determining output and employment. The segregation of capital goods that involve different length of production process is only significant insofar as their expected lives would affect the profitability of the production of investment goods. Hawtrey found it necessary for Keynes to separate capital into outlay on capital goods, designed outlay on capital of all kinds and the increment of wealth as they are different from "investment" and the concept of marginal efficiency of capital and long-term expectation apply only to the first and partially the second category of capital outlay (JMK, XIII, 580). Keynes disagreed with this view as the central message of his *General Theory* is that investment determines output and employment. It is the actual amount of current investment that plays a central part in driving up output. Capital goods of different nature are significant only in the sense that their different prospective yields formed by entrepreneurs' expectation would affect the amount of capital to be produced, which determines current investment on the aggregates. He wrote that

> my theory of marginal efficiency must also be applied to working capital. Certainly it must, and I intend so to apply it. But I do not see what special considerations arise. Exactly the same treatment applies. The peculiarity both of working and of liquid capital

> seems to me to reside in the comparative shortness of its life rather than in any other peculiarity. (JMK, XIII, 585)

It is new investment that determines output before the economy reaches its full capacity and therefore a long term interest rate that is low enough to sustain the production of investment goods given the existence of huge stocks of capital in developed economies is crucial for employment. In fact, in times when there are accumulated stocks of goods, which are defined as unintended investment; these stocks would not be replaced by new production until they are sold. In this situation, capital stock could lower production.

From Keynes' perspective, the existing stock of capital itself serves as no indicator for future employment and production excepting in the sense that it tends to lower the marginal efficiency of capital. Also, his *General Theory* no longer emphasizes the role working capital specifically played in trade cycles as in the *Treatise*. The notion of the forced saving and time lag in production has completely disappeared.

X. Conclusion

In this paper, I attempt to trace out the evolution of Keynes' monetary theory of production primarily from the *Treatise on Money* to the *General Theory* and provide an inquiry into his abolition of the forced saving doctrine as well as the time lag in production that is associated with it and how it is related to the development of his thought. In spite of the profound change in his arguments, I provide evidence suggesting that the change is a gradual one. The evolution of his thought is reflected in the manipulations of his fundamental equations and every manipulation reflects the step-by-step change in his ideas and this eventually led to a seemingly drastic change of view about the forces which determine changes in the scale of output and employment. Starting from taking Robertson's work as "appears at first sight a superb theory about fluctuations" (JMK,

VI, 1) to the transformation of the quantity equations into his fundamental equations and subsequently to questioning the doctrine of forced saving and to finally focusing on effective demand in his theory of production and employment, his colleagues in Cambridge played a crucial part in shaping Keynes' ideas into what appears in the *General Theory* through their intense debates and criticisms over his fundamental equations, which had triggered further refinement in Keynes' thought over the subject. Analytically his *General Theory* is a product of his skepticism over the notion of the forced saving.

References:

Bentham, J. [1816] 1839. *The Works of Jeremy Bentham*, Volume 3, edited by J. Bowring, Edinburgh: William Tait.

Clarke, P. 1988. *The Keynesian Revolution in the Making 1924-1936*. New York: Oxford University Press.

Eshag E. 1962. *From Marshall to Keynes: An Essay on the Monetary Theory of the Cambridge School.* Oxford: Basil Blackwell.

Garrison, R.W. 2004. "Overconsumption and Forced Saving in the Mises-Hayek Theory of the Business Cycle."*History of Political Economy*, vol.36(2), 323-349.

Gordon, S.1973. "The Wage-Fund Controversy: the Second Round", *History of Political Economy*, vol.5(1),14-35.

Hawtrey, R. G. 1919. *Currency and Credit. London*: Longmans Group

Hayek, F.A. 1932. "A Note on the Development of the Doctrine of "Forced Saving"", *Quarterly Journal of Economics*, vol. 47(1), 123-133.

Hayek, F.A. 1995. *Contra Keynes and Cambridge: Essays, Correspondence*, edited by B. Caldwell. Vol. 9 of *The Collected Works of F. A. Hayek.* Chicago: University of Chicago Press, and London: Routledge.

Johnson, H.G. [1964] 1967. Monetary Theory and Keynesian Economics, p.226-246 in R. W. Clower (ed.), *Monetary Theory.* U.K.: Penguin Books.

Keynes, J.M. [1923] 1978. *The Collected Writings of John Maynard Keynes, Volume IV: A Tract on Monetary Reform,* edited by E. Johnson and D. Moggridge. London: Macmillan.

Keynes, J. M. [1930] 1971. *The Collected Writings of John Maynard Keynes, Volume V: A Treatise on Money: The Pure Theory of Money,* edited by E. Johnson and D. Moggridge. London: Macmillan.

Keynes, J. M. [1930] 1971. *The Collected Writings of John Maynard Keynes, Volume VI: The General Theory of Employment, Interest and Money,* edited by E. Johnson and D. Moggridge. London: Macmillan.

Keynes, J. M. [1936] 1973. *The Collected Writings of John Maynard Keynes, Volume VII: A Treatise on Money: The Applied Theory of Money,* edited by E. Johnson and D. Moggridge. London: Macmillan.

Keynes, J. M. 1973. *The Collected Writings of John Maynard Keynes, Volume XIII: The General Theory and After: Part I Preparation*, edited by D. Moggridge. London: Macmillan.

Keynes, J. M. 1973. *The Collected Writings of John Maynard Keynes, Volume XIV: The General Theory and After: Part II Defence and Development*, edited by D. Moggridge. London: Macmillan.

Keynes, J.M. 1979. *The Collected Writings of John Maynard Keynes, Volume XXIX: The General Theory and After: a Supplement,* edited by D. Moggridge. London: Macmillan.

Leijonhufvud, A.1967. "Keynes and the Keynesians: a suggested interpretation." *American Economic Review*, vol 57(2), 401-410.

Leijonhufvud, A.1968. *On Keynesian Economics and the Economics of Keynes: A Study in Monetary Theory*. New York: Oxford University Press.

Marshall, A. 1888. "Wages and Profits", *Quarterly Journal of Economics*, vol.2(2), 218-223/

Mill, J. S. [1844] (1874) . *Essays on Some Unsettled Questions of Political Economy*. London: Longmans, Green, Reader and Dyer.

Mill, J. S.1859. *Dissertations and Discussions*. London: John W. Parker and Son, West Strand.

Patinkin, D. 1976. *Keynes' Monetary Thought: A Study of Its Development*. Durham: Duke University Press.

Robertson, D.H.1933."Saving and Hoarding", *Economic Journal*, vol.43(171), 399-413.

Robertson, D.H.[1926]1989. *Banking Policy and the Price Level*.New York: Augustus M. Kelley.

Robertson, D.H. [1940] 1956..*Essays in Monetary Theory*.London*: Staples*Press.

Robertson, D.H.1959. *Lectures on Economic Principles, Volume III*.London: Staples *Press.*

Taussig, F.W.1894. "The Wages-Fund Doctrine at the Hands of German Economists." *Quarterly Journal of Economics*, vol.9(1),1-25.