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Monetary overinvestment and the business cycle.

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THESIS

Monetary Overinvestment and the Business Cycle

by

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INTRODUCTION

In most works on cycle theory it is often found that they are written in order to disprove extant theories in order to advance the "correct" theory of the cycle. This work is not undertaken to prove or disprove a cycle theory, but rather in response to an interest stimulated in a particular approach to the cycle. As an undergraduate student the writer became curious about the monetary overinvestment theory as a result of the scant coverage given this theory in the average textbook on cycles. As a rule the theory is put forth briefly and then even more briefly dismissed. This situation stimulated the writer to investigate this cycle approach - to investigate it from a standpoint of definition, with this attitude in mind the work was undertaken as an inquiry. The history of cycles and cycle theory is first briefly covered, then the monetary overinvestment theory is defined and finally it is discussed in its various aspects. No bias is intended here and the only objective is that of explaining a much contested approach to one of the most troublesome of economic phenomena.

The sections dealing with the theory represent the views of Hayek and Van Klasse and not the writer. As to the bibliography, it has been "streamlined" and only those works to which references were actually made are used. These
works which the researcher must inevitably thumb through in
the search for his material that were of no practical value
to the subject or were duplications of other analyses have
been omitted. Perhaps the best source of information for
someone seeking a quick series of comments on Hayek's theory
is the "Economic Journal" 1932 et. seq.
I. BUSINESS CYCLES

A. Business Cycle History

The history of economic doctrine lies buried in antiquity. Hardly any of the writers of ancient times neglected to comment on economic principles. The comments of these ancient writers, however, were not set forth in a clearly formulated body of economic principles, but rather were as aside to discussions of religion, politics, or morality. So it was also with the later Roman and Greek writers, then the writers of medieval times and finally with the mercantilists around the late sixteenth century. It is at this period that money and exchange economy had been established and a growing interest was manifested by the writers in general prosperity and depression. There was not, however, as yet, any fully formulated body of economic thought, this development was not to be witnessed until the eighteenth century.

Along with the coming of the eighteenth century in England were found two new developments which were new in the sense that what had been in the past almost imperceptible were now clear manifestations of the accomplishment of change. One of these developments was the Industrial Revolution, the other was the emergence of Economics as an independent science. The former might be called the cause or precipitator, the latter, the effect; for it was in the period of manufacture that

* 1 pp. 1-300.
economic science sprang into being. Spurred by the growing industrialisation of the modern nations of Europe, the "economists" of the time began making careful inquiries into the "nature and cause of the wealth of nations". Around them the inquirers saw, with growing awareness, a commercial structure changing quickly and radically. The old system of barter was gone, the use of money was increasing, instruments of credit were evolving, large scale banking was developing - a middle class was delineating itself and a new class - wage earners - was outlining itself on the industrial landscape.

It is at this period of history that one can place the beginnings of another adjunct of the Industrial Revolution - periodic business cycles of a clearly defined recurring nature. Prior to the Industrial Revolution when it might be said that only subsistence economies prevailed, the existence of business cycles as effects of causes within the economic system did not obtain. It seems rather that the beginning of periodic cycles was predicated on an exchange economy in which capital formation and an involved system of trading, credit creation, banking and merchandising existed.

The implication, however, is not intended to be that prior to the Industrial Revolution cycles in economic activity did not exist. On the contrary, they were multitudinous and

* 2 p. 88,
** 3 & 4 p. 685, p. 45.
*** Ibid.
often severe. In almost all of the cases, the causal force could be clearly traced to one of the following: Famine, government financial manipulation, disease, international incidents, rebellions, monopolies, bad harvests, royal seizures, civil war, taxes, shipping losses, wars, bank failures (manipulation) and trade restrictions.** Historically, it does not appear that business cycles in the modern sense go back beyond the Napoleonic Wars. Truly periodic business cycles are more characteristic of modern times or as one writer puts it, ".....a modern disease.....a necessary part of economic life."**

Although the known existence of business cycles is over one hundred and fifty years old, the study of business cycles, "on a systematic basis is a comparatively recent development".*** Gordon, for instance, states that most of the important contributions in the field have been made in the last half century.

It is not quite true, however, to say that prior to that, the last fifty years, little that had had any bearing on cycles was written. The study of business cycles is essentially a study of the operation of the economy and as such is widely discussed. One cannot pick up a book on economics without reading something which is related to business cycles.

* 5 p. 234.
** 4 p. 47.
*** 6 pp. 304-305.
The study of economics is, as a matter of fact, the study of the ways and whereas of a healthy economy and so it follows that from ancient times through Adam Smith and down to our present theoreticians, contributions have been made to our ever growing ideas as to the nature and causes of business fluctuations.*
B. Early Theories of Business Cycle Cause

What are the causes of the Trade Cycle? Why are there recurrent periods of trade depression? Why does commerce periodically stagnate, falter, and decline? These questions were asked by the economists of the industrially advancing countries during the early eighteenth century. Many theories were propounded professing to answer the whys and wherefores of cyclical changes. Each, of course, had its degree of validity in the light of the circumstances in which it was put forth, but then as well as now it is difficult to place the blame for the business cycle on any one cause.

The early mercantilists had a tendency to point out the variations in the money supply as the causal force and advocated monetary manipulation as a preventative measure against trade fluctuations.* One writer, for example, stated, "there is a certain measure and proportion of money requisite to drive the trade of the nation, more or less than (sic) which would prejudice the same". Another held that too much money was bad because it would raise prices and decrease trade. Perhaps one of the more interesting comments of the time was one made by E. Miscoelden in which he advocated the increasing of the supply of money by depreciation, which would raise prices and stimulate trade. This particular type of approach was used, of course, in 1933. The mercantilist writers, however, did not all subscribe to the theory that

* 3 p. 639.
money was the cause of the business cycle. Some approached the problem with ideas which are more nearly like some of the theories put forth today. If, for illustration, one were to search in mercantilist writings for some anticipatory comments on the overinvestment theories of the business cycle, he might choose the following quote as a good example of a preview to an overinvestment concept:

"Whereas the sum of the matter is, the manufacturer went mad, his stream ran over into a flood, he runs himself independently out of breath; and upon a little start of trade, willing to furnish the orders all himself and loth to let a Neighbor come in with him, ran himself out, dragged the Poor into his Business, nay perhaps robbed his poor Neighbor of his workmen, by giving higher wages; and when the trade stops a little he runs aground; so the poor are starving and ready to mutiny for want of work; and this we call a Decay of Trade....."

Excluding the statements of the socialists of the period, it can be said that the bulk of ideas put forth revolved around money and interest rates, and most of the proposals called for fiscal juggling of one sort or another.** By 1850, however, the Industrial Revolution was a fact. A complex economic structure based on large masses of capital

** I pp. 668-670.
prevailed; and along with the creation of this capitalist economy was developed a history of business cycles and a collection of statistical data which served as a foundation for cycle theory, and which enabled economists to proceed more objectively.* From this period came the theory of recurring business cycles and the theory of capital goods overproduction as the cause of business cycles.

A statement of overproduction, nevertheless, was not taken as the final word in regard to business cycle cause. Diverse theories were developed, but generally they all had a common feature in the acceptance of the existence of a maladjustment in the pattern of cycles. These multitudes of theories that were developed may, roughly, be categorically classified as either overproduction or underconsumption explanations. The early classicists for example explained the cycle in terms of a partial overproduction theory due to functional adjustments, such as, war, crop failures, etc. It must be remembered though, that the early classicists had no statistics or cycle history to assist them in cyclical analysis which might account for the matter of fact cycle explanations which prevailed. Also, there was a tendency at this time to ignore the role of credit and credit expansion in its causal and stimulating effects upon the economy. This neglect of the role of credit was due to the British "Currency School" which proselytized the concept that only coin and notes representing

* 1 p. 670.
money are real money. "This encouraged non-monetary cycle theory."

The development of the theory of J.S. Mill is illustrative of a theory of this type. Mill at first presupposes a condition where a few commodities are not supplied in sufficient quantities to meet demand. From this position, the statement is advanced that the entrepreneur will seek speculative loans in order to take advantage of a supply less demand situation. Credit is extended and price inflation follows. Along with this currency inflation condition, comes the rise in the interest rate, "inordinately leading to a crisis." "In short too much money is tied up in capital goods and the demand for credit becomes too great".**

On the other side of the categorical classification are found the underconsumptionist explanations of the cycle. Firstly, one finds the over saving approach to cycle cause which is perhaps, the most common underconsumption approach,*** and secondly the Socialist approach as visualised by Karl Marx who saw the proletariat receiving a diminishing share of production because of the capitalists "savage" attempts to squeeze more and more surplus value from him. In the end, said Marx, the worker has nothing left to consume.**** Enough of underconsumption. The main concern here is monetary overinvestment

* Ibid.
** 1. pp. 672-673.
*** Ibid. p. 675.
**** 2 En passim.
as an explanation of the business cycle.

The next development of any significance in the field of cycle theory was the non-monetary overinvestment theory of the cycle. This theory embraces a wide variety of cycle explanations. It is under this broad classification of non-monetary overinvestment, for example, that the innovation theory of Schumpeter, the psychological and mixed cause explanations of Pigou, and the production rhythm explanation of Affalion may be listed.¹

In this type of explanation, money and credit expansion are given only a secondary role in cyclical change while the pattern of fluctuations in durable goods play the major role. The efficacy of monetary manipulation as an effective stabilizer over cyclical change is denied. To be sure, the necessity of financing the undertakings of the entrepreneur by means of credit expansion in a booming economy is accepted, but the credit expansion is deemed a result of the growing economy rather than a cause of it.

According to the general statements of non-monetary overinvestment theorists, the cycle begins when the market rate of interest is low and the expected return from capital investment is high. When a condition such as this prevails, investments in capital goods begin to expand. The expansion in investment causes an increase in employment, consumer incomes, and purchasing power, which in turn generates further

¹ pp. 678-679.
increases in the demand for producer's goods which in turn causes more demand for consumer's goods. Profits increase, capital goods demand mount, and the upward spiral is on its way.

"Ultimately" - this spiral is brought to a halt by shortages in the resources of production. Further credit expansion would be of no avail for it would be useless to bid for factors of production which simply do not exist. Of necessity, economic contraction results and the downturn begins."

Thus, the non-monetary overinvestment theory attempts to explain the cycle in terms of the entrepreneur's use of available credit - because of reasons other than the availability of credit - while the pure monetary theorists explain the cycle in terms of monetary expansion alone.

The proponents of the pure monetary theory place the entire blame for cycles on credit phenomena. The upswing starts - so goes the theory - when credit is expanded - expanded because of high reserves and pressures to increase loans. Loans, of course, may be increased by making the rate of expected return appear more profitable - i.e., lower the cost of funds which increases the number of commercial loans outstanding. The borrowed funds are then used for inventory expansion, which has its usual result of more orders for producers, and which starts the typical concatenation of events commonly associated with capital expansion - i.e., increased

* 7 pp. 415-420.
employment; greater consumer income and expenditure; increased pressure on inventories; and increased pressure on producers which starts the chain over again. This approach, incidentally, seems to put consumption before production.

"Sooner or later", the pressure upon the production resources causes prices to rise - especially as the productive resources are more utilized. These higher prices in turn cause higher costs which still further increases the demand for funds; in addition, the possibilities of inventory profits contribute greatly to the growing need for cash. Money velocity is increased along with the growing demand for funds, the banks "ultimately" feel the stringencies of reserve requirements, and the contraction begins - causing the opposite of the concatenation of the events occurring on the upswing - declining employment, consumer incomes, orders to producers, prices, sales, etc. Then comes the downturn, reinforced cumulatively by each link in the chain of contraction.

A logical inference from this theory is that unlimited credit expansion would eliminate the business cycle; this is an hypothesis which cannot be supported.*

* A concept held in common with both the monetary and non-monetary overinvestment theorists.
* 7 pp. 404-408.
Thus, in brief, the history of cycles and some of the general developments of cycle theory have been outlined. The next step - the purpose of this discourse - is a discussion of the monetary overinvestment theory of the cycle; a theory which is shown in its fullest development by the works of two men, Ludwig von Mises and Friedrich von Hayek."

* 1 pp. 630-631.
II. VON MISES AND CYCLE THEORY

A. Money, Interest and the Cycle

Von Mises is a member of the "Austrian School" of economists, and as such his theory of cycles is a part of the general theory of this particular school.\(^*\) Von Mises' point of departure in developing his theory is the subject of interest; but while interest is an important facet in his theory it is not necessary to discuss the why of interest in order to illustrate the Von Mises approach. Suffice it to say, that Von Mises theory of interest rests on the Bohm-Bawerkian concept of time preference, i.e., an apple next week is worth more than an apple six years from now - in the sense of utility.\(^**\)

There is one interest phenomenon, however, that should be defined in order to illustrate Von Mises statement of cycle theory - the phenomenon of originary interest. This concept is by no means an original development on the part of Von Mises; on the contrary, in this idea, he was anticipated by Knut Wicksell, and in turn the idea of Knut Wicksell was anticipated by Henry Thornton.\(^***\) Lord Keynes later used this concept, which he designated the marginal efficiency of capital.\(^****\)

Von Mises defines this term, originary interest, as

\(^*\) 1 p. 680.
\(^**\) 8 pp. 521-534.
\(^***\) 3 pp. 698-702.
\(^****\) C.f. 9 En passim.
the ratio between utility in the immediate future and utility in the remote future, i.e. a keg of wine tomorrow as opposed to a keg of wine in three years - or in other words - present consumption as opposed to future consumption.

To this phenomenon of originary interest he ascribes the motivating force in the demand and supply of capital, i.e. "It determines how much of the available supply of goods is to be devoted to consumption in the immediate future and how much to provision for remote periods of the future." Thus, in essence, Von Mises declares originary interest to be the determiner of the rate of interest in the loan market."** This appears to be a gross inconsistency on the part of Von Mises which will be discussed later in the discourse.

Von Mises begins his discussion of business cycle causation by assuming an expansion of credit. Along with this first assumption he further assumes that prior to the expansion, all those who wished could borrow as much as they wanted at the prevailing gross market rate of interest."## The natural result then of a credit expansion would be a decline in the market rate of interest - if prior to the expansion all potential borrowers could have been accommodated then with an increased supply of funds the market rate of interest would have to decline.

* 5 pp. 523-524.

** Ibid p. 524.

# Infra, Appendix 1, p. 91.

## A concept in which some of the interest received is classified as a cost, the rest as entrepreneurial components.
Von Mises then goes on to state, that the entrepreneur, who in the calculation of the profitability of a given project considers wages, raw material costs, future prices and capital costs (interest), is misled in his calculations by a low market rate of interest, artificially brought about by a fiduciary expansion. In the absence of a credit expansion the entrepreneur can determine, using the interest rate as a guide, what projects can be undertaken profitably, what projects can not be undertaken profitably, i.e., "It forces him to employ the available stock of capital goods in such a way as to satisfy best the most urgent wants of the consumers."

Now, after credit expansion - an important factor in the business equation - the level of the market rate of interest is false. The entrepreneur is misled into calculating his proposed actions on a basis that there are more capital goods available than there actually are. This false appearance of increased capital goods is caused by the credit expansion which makes undertakings based on a manipulated market rate of interest appear profitable whereas, the true rate of interest, i.e., the rate prior to expansion, would show these undertakings to be poor ventures. Business expands and the boom begins."

# Von Mises is not clear in this regard. It appears that he means that an increase in capital goods will bring more money into circulation, while credit expansion only creates an illusion of more capital goods.

* 8 pp. 547-548.
Once the boom is on its way the typical chain of events manifests itself. Wage rates rise, producer good prices rise, consumer good prices rise, the entrepreneur starts to speculate on his inventory and the society is well on its way to "economic disaster".

Thus, the economy is in a state of expansion. Production increases - at a higher cost - and all businessmen, those who expanded as well as those who did not, need more funds in order to continue production at these higher costs. The economy needs increasingly larger and larger injections of fiduciary media, for the boom cannot last without more and more credit.

Thus, the demand for funds increases without any increase in the supply of money available for lending, and inevitably the gross market rate of interest rises. With this rise in money rate comes a drop in profit expectations because of a new level of the interest rate factor in business calculations. Prices begin to drop as entrepreneurs attempt to free themselves from unfavorable inventory positions, and the boom is over, the extent of the decline depending upon the magnitude of the preceding expansion.

Von Mises does not, in any case, maintain that the answer to cycles is unlimited credit expansion. On the contrary, his position is that it is fortunate that the constra-

** S p. 551.
tion occurs when it does, else the endless credit expansion would bring the "crack up boom" and the dissolution of the entire monetary system.**

What has been said so far in regard to Von Mises' theory may be, more or less, called the what of his theory, i.e., what happens when credit is expanded? With respect to the why of his theory he begins with the businessmen who have borrowed these "money substitutes".

With the increased funds the entrepreneur expands - expands either laterally or longitudinally.**# Regardless of the type of expansion, however, additional factors of production are required, but they are not available.

At this particular point in the expansion process Von Mises discounts the efficacy of forced savings in reducing consumption enough to release factors needed by entrepreneurs in their undertakings. The natural result then of higher consumer incomes and expenditures, and the diverting of factors into longer methods of production is a rising price level. A rising price level results because consumers have more to spend and less to buy. For example; let \( y = \text{income}, \ c = \text{consumption}, \ C = \text{present production and} \ O_2 = \text{pro-

* Ibid. p. 552.
# Germany's fiscal condition in the twenties and the present fiscal condition of China are illustrations of the consequences of endless credit expansion.
## Lateral expansion lengthens production time within industry - longitudinal expansion does not.
duction processes for the future, then after a credit expansion the equation would be: increased $y$, means increased $c$, means increased $C_2$, means less $C_1$, # means increased prices. This rise in consumer prices reinforces further the businessman’s tendency to expand. Every increase in levels of activity generates another, more employment means greater consumer income, more expenditures, higher prices, more expansion and on and on the spiral goes.\textsuperscript{*}

Von Mises demonstrates the proceeding phenomena symbolically thus:

\[
p = \text{total supply of capital goods before expansion.}
\]
\[
g = \text{total supply of consumer goods which } p \text{ could make without prejudice to further production.}
\]

After the credit expansion, producers embark upon the production of an additional quantity of $g_3$ goods of the same type as $g$ and a quantity of $g_4$ goods never produced before. In order to produce $g_3$ and $g_4$, however, a supply of capital goods $p_3$ and $p_4$ are needed; but $p_3$ and $p_4$ are lacking. This fact – says Von Mises – distinguishes the false credit boom from a genuine expansion brought about by the addition of $p_3$ and $p_4$. Therefore, with a credit expansion businessmen attempt to make $p = g + g_3 + g_4$, when only $p + p_3 + p_4$ can equal $g + g_3 + g_4$. In essence, the result of a credit expansion is no more than bidding for that which does # Mean less 0, because factors are diverted from 0 to $0_2$.\textsuperscript{*} 8 p. 554.
not exist.

Von Mises does not call this "false" expansion monetary overinvestment, but rather monetary malinvestment. He states that investment, is possible only where there is an additional supply of capital goods available, and lacking these the credit boom only increases consumption while it creates no new capital goods. The following quotation is an example of Von Mises thought in regard to overinvestment versus malinvestment:

"The essence of the credit expansion boom is not overinvestment, but investment in wrong lines, i.e., malinvestment. The entrepreneurs employ the available supply of r# plus p plus p2 as if they were in a position to employ a supply of r plus p1 plus p2 plus p3 plus p4. They embark upon an expansion of investment on a scale for which the capital goods available do not suffice."

When the final point where the banks cease to expand credit is reached, then the boom is over; the economy declines, perhaps, drastically, and the society is "impooverished" - im- pooverished in comparison to what could have been if the economy expanded wisely instead of ". . . on the sands of banknotes and deposits."**

# r is replacement of p; p2 is normal growth of p.
* 8 pp. 554-557.
** 8 p. 559.
The preceding discussion has outlined the salient features of Ludwig Von Mises' theory of the cycle. It cannot be said, with complete accuracy, that Von Mises' cycle theory development is original. The monetary conceptions of trade cycles appeared first in the early mercantilist writings and so on down to modern times. Von Mises' work is really, in a sense, a finer development of the ideas of many economists joined with the concepts of the "Austrian School".

It is upon this basic development of Von Mises that Frederick Von Hayek, a pupil of Von Mises, has built his monetary overinvestment theory of the business cycle.

* 1 & 3 En passim.
III. THE CYCLE DEVELOPMENT OF VON HAYEK

A. Hayek's Approach

"...monetary theory is still so very far from a state of perfection that even some of the most fundamental problems in this field are yet unsolved, that some of the accepted doctrines are of very doubtful validity."*

It is usual to find in the course of an investigation of the formulation of a particular economic doctrine an assimilated work setting forth the exponent's or exponents' views on the theory in question; in regard to the cycle theory of Von Hayek, however, this is not so.

Hayek, himself, states that his words are not the full statement of a theory of industrial fluctuations, that the formulation of the particular monetary approach he uses is not complete, that the method used is often abstract and that his cycle theory is not the full answer. He sets his ideas forth at times, boldly, at times timidly and often vaguely; and occasionally he seems apologetic for incompleteness and states frequently that the explanation set forth is sketchy, etc.**

This brief introduction is not intended to give the reader the idea that Von Hayek has written only sparingly on the causes of industrial fluctuations. On the contrary, he

* II p. 126.
** C.f. Introduction 10, 11, 12 and passim.
has written many articles, reports, lectures, small books, etc. (many in German) about this particular subject of cycles. The best general statement of Hayek's ideas are to be found in three books - which are really published essays and lectures - and which chronologically are "Monetary Theory and the Trade Cycle", "Prices and Production" and "Profits, Interest and Investment", the first being a statement of the monetary cycle cause, the second a statement of the "successive changes in the real structure of production which constitute those fluctuations", and the last a restatement, with some revision, of the first two.

As was stated, Von Hayek was a student of Von Mises and as a result his theory of industrial fluctuations is founded on Von Mises' basic development. Indeed, Von Hayek, himself, acknowledges his debt to Von Mises stating that the work of Von Mises provide more of a point of departure for him that the work of Knut Wicksell* who did much in regard to the development of a "monetary theory of the cycle".

* 11 p. xiii.
B. Monetary Causes of the Cycle

Hayek's first step in defining the cycle is to offer a logical explanation as to why money meets the requirements of a cyclical cause. Static analysis - states Hayek - only permits movements of the economic components of a society towards equilibrium; what must be explained is, how, with the introduction of indirect exchange - money - "a new determining cause is introduced".

"Money being a commodity which, unlike all others, is incapable of finally satisfying demand, its introduction does away with the rigid interdependence and self sufficiency of the closed system of equilibrium, and makes possible movements which would be excluded from the latter".

This definition of money is Hayek's starting point in explaining the cycle. "With the acceptance of the fact of the "driving force of money", Hayek supplies himself with a jump off point to explain the disproportionalities and maladjustments which occur in capitalistic society, and which prevent the relatively smooth movements of economic forces toward equilibrium and which also cause violent swerves away from "normal"." *

Perhaps it would be wise to emphasize the fact that Von Hayek's attributing the cause of the Trade Cycle to money

* 10 p. 45.
is not meant in the sense of fluctuations in the value of money, but rather in the volume, viz., its elasticity.

Like Von Mises, Von Hayek lays the blame for engendering cycles on credit expansion; but unlike Von Mises he attempts to explain why credit is expanded. Von Mises is deficient in this respect in that he assigns an inflationist ideology on the part of the banks as the reason for credit expansion. Hayek, on the other hand, undertakes to explain credit expansion more logically - a given amount of money suddenly can be used more profitably than previously. The existence of this state of affairs could be brought about by such things as inventions, innovations, new markets, - destruction of large capitals by natural catastrophes, or a fall in wage rates (immigration)* etc., which in any case would improve the profit outlook and cause the demand for funds, and "loosen" the supply in the hands of the banks.

Von Hayek attempts also to answer another question not answered by Von Mises: Where do the banks obtain the funds to expand commercial loans? Von Hayek somewhat nebulously implies that the banks have excess reserves, and are in very advantageous positions of liquidity, and when called upon for new loans will grant them even at the cost of reduced liquidity; the reason for the loan expansion being that with better expectations new loans at the same rate of interest are

* 10 p. 168. Insufficient in themselves to engender a crisis.
better ventures.\^  

Of course, when one or several banks expand loan deposits, the banking system as a whole will then be able to create credit owing to the fractional reserve system.

Let it be assumed now, that one or several banks, conservative in nature, did not feel as though it would be wise to increase loan deposits at this particular time. Would this act as a brake? Would this put a damper on an impending boom and bust? The answer is, naturally, no, for it would not be until the ever growing credit requirements of the expanding economy applied pressure to the cash balance - reserve position of all banks that the one controlling factor - market rate of interest - would be used (raised) to halt the expansion.\#  

This could only come about by concerted action on the part of the banks or the raising of the rediscount rate by the central bank.\^^

The "why" of the raising of the interest rate stems from the inevitability of a rate increase following a stoppage of increases in circulating media.##

\^ 10 pp. 163-172. With an actual increase in originary interest, the money rate of interest, in effect, is actually lowered.

\# A criticism of this theory is that where expectations are good the height of the money rate is relatively ignored - #WithNa75ange.

## A stoppage necessary to avoid Von Mises' crack up boom.
The money rate would rise to the equilibrium rate\# and again change the "rate" of originary interest.\* Along with the rise in the money rate of interest comes the spectre of the "bust" and beginning of the end of the boom.

The preceding explanation illustrates, in brief, the process of credit expansion, which according to Hayek, is a necessary precedent to an unhealthy boom. It is not in itself, however, a sufficient definition of the cause of the cycle, rather there must be attending circumstances - those of changes in the structure of production fostered by a credit expansion.\**

\# The rate would rise because of an increasing demand for funds with a no longer expanding supply.
\* 10 p. 176.
\** 10 En passim.
6. The Structure of Production and the Expanding Economy

As in all cycle theories there must be a starting point - Hayek chooses a position of equilibrium as his and defines it as a condition where the ratio of money spent on consumer's goods, and on intermediate goods is equal to the ratio between the total demand for consumer's goods and, "the total demand for the intermediate products necessary for their continuous production". This ratio in turn will equal the ratio between the output of consumer goods at a given time and the output of intermediate products of all earlier stages of the same given period. It might be added that these assumptions of Hayek are based on a stationary state.

From this point of equilibrium, states Hayek, the cause of the business cycle and changes in the structure of production brought about by credit expansion may be traced. By changes of the structure of production Hayek means shifts to more or less capitalistic means of production - more capitalistic if the shift is to producer goods (increases number of stages) and less capitalistic if the shift is to consumer goods (decreases number of stages). These shifts could come about if either the total demand for producer goods relative to consumer goods increased or vice versa because of increased or decreased voluntary savings or a change in the quantity of # Goods which are not land or labor, but rather goods which are between the original means (land and labor) of production and consumer goods.

* Il p. 46.
money, i.e., a credit contraction or expansion.*

In the case of a change in saving habits, Hayek visualizes no maladjustment arising because more savings means less consumption and a freeing of funds for more capitalistic methods of production, and the "creation" of new capital. Under these assumptions there has been no change in the quantity of money only a realignment of it among consumption, saving and investment.

With a change in the quantity of money via credit expansion, however, the situation differs. The proportion between the demand for consumer goods and producer goods has been altered by the granting of credits. With the increased money substitutes there will be a movement towards more capitalistic methods of production as would be the case with increased voluntary savings; the shifts in both cases, however, differ in that with increased voluntary savings consumption decreases and investment increases while with a credit expansion, money increases, investment increases while consumption does not change.

The logical result then of a credit expansion would be a diminishing of consumption goods due to a shift in the structure of production. Rising consumer good prices would then appear to be the next phenomenon that would be witnessed under these assumptions.** The consumer then, without an

** 11 pp. 55-56.
income increase would then be forced to consume less. To be sure, the consumer would eventually receive a larger income because of credit expansion but not in the early stages of the expansion process. Hayek also visualizes the possibility that a rise of money receipts of the consumer (wages) could cause the money stream to be redistributed, between consumptive and productive uses according to the wishes of the individual; "....and the artificial distribution....will, partly at any rate, be reversed", i.e. production will become less capitalistic - the transition to less capitalistic means - "necessarily" taking the form of a crisis. Some producers will have completed their changes to the more capitalistic methods of production and will be able to profit by their completion. Others, who have not finished the change over will find that when the amount of money ceases to increase that they are unable to complete their shifts to more capitalistic methods and will have to stop their processes, often at extreme losses.**

* Il p. 53.
** Ibid p. 66.
D. Prices and the Expanding Economy

If the assumption of economic equilibrium is continued, it can be seen that when borrowers receive loans (credit expansion) they will only be able to spend the funds on additional producers goods (no unused resources) which will mean outbidding the businessman who used these producer goods before. But how, it may be asked, can borrowers who could only start longer production processes when the interest rate was lowered (credit expanded) compete for resources with those entrepreneurs who used those productive resources prior to the lowering of the interest rate? The answer to this question, says Hayek, is that with the lower interest rate the relative profitability of the different factors of production will change for the existing concerns and in addition the lower rate will give an advantage to those firms who use proportionately more capital. These "old" concerns will find it profitable to shift some of their funds from the original means of production to intermediate products produced by higher order stages of production.

"They will....buy parts of their products which they used to manufacture themselves from another firm and can now employ the labour thus dismissed in order to produce these parts on a large scale with the help of new machinery.....the original
means of production and non specific producer's goods which are required in the new stages of production are set free by the transition of the old concerns to more capitalistic methods.

Now as mentioned previously, a shift to the longer processes of production via credit expansion is not preceded by any reduction in consumption. ** In the face of the same level of consumption demand and with productive resources being withdrawn from the consumer good field the prices of consumer goods are bound to rise. An effect such as this would not have come about had the funds for the expansion come from increased savings instead of credit expansion. The result of the rising consumer prices and smaller supply will, of course, be that, the consuming public will involuntarily be forced to consume less. The consumers, however, will eventually receive higher wages and their resulting bidding for the available consumer goods will put even greater pressure on consumer goods prices. These price rises will not, in themselves, cause entrepreneurial shifts - in the short run - to the consumer goods field, but these price rises will cause a new proportion between the demand for producers and the demand for consumer goods. *** In other words, the direction of

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# Producer goods of a versatile nature - raw materials, hammers, knives, etc. as opposed to say - blast furnaces.

* 11 p. 87.

** 11 pp. 51-58.

*** 11 p. 89.
production is not in accordance with the votes of the consumers - a vertical maladjustment.

A demand situation such as above calls for a return to the less roundabout means of production but the banks continue to expand credit and the entrepreneur continues to borrow on the great expectations/* for furthering the roundabout process.

As the entrepreneurs continue to borrow and the prices of consumers goods continue to rise, the time will come when the price margins between the final stage of production and the several proceeding low stages will become greater than the price margins in the higher stages. The existence of this condition will cause a transfer of producer goods of the non specific type to the lower stages in order to take advantage of the profit potentialities. The "new" demand will cause producer good prices to rise, and these price rises along with the rising of consumer good prices will cause more and more shifts to the lower stages. Also a state of affairs involving increasing pressure to shift to lower stages will cause production to shrink to fewer stages, than the equilibrium price of consumer goods will warrant.**

Thus, with the rise in prices of the non specific intermediate goods and the resulting downward shift of these

# Throughout these arguments Hayek is supporting the idea that equilibrium equals consumption plus savings plus investment. (net investment)
* C.f. 10, 11, 12, 13 - passim.
** 11. p. 91.
factors in conjunction with a relative rise in prices of the original factors (land & labor) the longer processes of production become unprofitable and the goods (specific) used in them witness price declines. In this stage of the cycle there should occur then, stoppages in the earlier stages of the longer processes.

After the shift to the shorter processes of the non-specific goods is allowed to progress the problem of the absorption power of these shorter processes will arise. Some of these non specific goods might not be absorbed at all. *

It is at this stage, according to Hayek, that the crisis really occurs. It will be recalled that the shift to the lower stages began because of high prices existing in the lower stages owing to a scarcity of consumer goods. Now a seeming paradoxical situation develops, "...the self same goods whose scarcity has been the cause of the crisis would become unsaleable as a consequence of the same crisis". Hayek explains this by maintaining that when the increasing demand for consumer's goods has taken that part of the available non-specific goods needed in the lower stages, these non-specific goods remaining are: "no longer sufficient for the long processes", and that the type of specific good required for the processes long enough to employ the remaining

non-specific goods do not yet exist.**

Perhaps the best summary of the preceding outlining of Hayek's theory is a quote from a criticism of Hayek's theory by A. Hansen and H. Tout reproduced in Hayek's book.**

"Dynamic forces may bring about various effects on economic life, but unless they have the specific effect of shortening the process of production, depression will not follow therefrom. Nor does depression ever assume any other form than that of a shrinkage in the structure of production".

# This is an illustration of the complementary nature of the factors of production. They must be available in proper ratios.
** Il p. 133.
E. The Doctrine of Forced Savings

The doctrine of forced savings, a concept which Hayek himself traces back as far as Jeremy Bentham, is indeed an important facet of Hayek's theory; as a matter of fact, the concept is so important that Hayek's theory would be weak without it. This concept of forced savings explains the why of the unsound expansion and contractions in productive stages. It has by implication been introduced to this work before.#

For the sake of clarity and contrast, investment expansion caused by voluntary increase in savings, and expansion caused by fiduciary injections in the circle of payments will be illustrated. Von Hayek uses the following to illustrate these events:

**Case I**

<table>
<thead>
<tr>
<th>Original Means of Production</th>
<th>Assumption: Prior to an increase in savings (voluntary) the ratio of consumer good demand (stage e) to producer good demand (stages a, b, c, d) is 1:2 i.e., sum of a, b, c, d = 80, sum of e = 40; 40: 80: 1:2</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 a</td>
<td></td>
</tr>
<tr>
<td>16 b</td>
<td></td>
</tr>
<tr>
<td>24 c</td>
<td></td>
</tr>
<tr>
<td>32 d</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>consumer 40 goods e</strong></td>
</tr>
</tbody>
</table>

This chart is an illustration of a condition of equilibrium with full utilization of resources prior to a change in savings habits. If, to assume further - consumers

a 12 p. 184. Bentham called it Forced Frugality (1804).

# Supra pp. 30-33.
were to change their savings habits and increase savings by $10. and this additional $10. were put at the disposal of producer goods entrepreneurs the schematic of the structure of production would be realigned as follows:

**Case II**

<table>
<thead>
<tr>
<th>Intermediate Goods</th>
<th>Original Means of Production</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.3 a</td>
</tr>
<tr>
<td></td>
<td>8.6 b</td>
</tr>
<tr>
<td></td>
<td>12.9 c</td>
</tr>
<tr>
<td></td>
<td>17.1 d</td>
</tr>
<tr>
<td></td>
<td>21.4 e</td>
</tr>
<tr>
<td></td>
<td>25.7 f</td>
</tr>
</tbody>
</table>

Consumer's 30 goods g

Assumption: Savings (voluntary) has increased by $10. producers of producer goods have expanded; the number of stages has increased and the stages have become narrower. The new ratio = 1:3, i.e. sum of a, b, c, d, e, f = 90; sum of g = 30; 30: 90: 1:3. Notice – all stages in both cases = 120.

Under the assumption of Case I and II everything will continue to work smoothly and there will be no major disruptions in the productive structure. The alterations in the nature of the stages is a clear response to the votes of consumers to consume less as manifested by the increased savings. The additional $10. for expansion is definitely available. The consumer's now consume $30.00 instead of $40.00. This, says Hayek, is proper growth.*

The above illustration then, gives a picture of normal industrial expansion stimulated by increased voluntary

savings. What happens in the case of an industrial expansion occasioned by an expansion of credit? The change for Case I to Case II would be the same with one exception, stage $g$, in Case II would remain 40 as was its corresponding stage $e$ in Case I. What would be the ratio then of producer good to consumer good demand in Case III (credit expansion)? The sum of stages $a, b, c, d, e, f$ would equal 90, sum of stage $g$ would still equal 40; $40:90 = 1:2.25$, sum of all stages $= 130$. Thus a situation arises where the productive structure has been lengthened, and original means of production (land and labor) have been withdrawn from the consumer good section of the economy yet consumption has not changed at all—it remains $40$. Now with the same consumer demand and less means of supplying this demand (diverting of factors) the $40$ bid for consumption goods will bid up the prices of the available consumer goods.

Prices of consumer goods will continue to rise but the consumer's income will remain constant, (at first). Higher prices then force the consumers to consume less. Consumption is lessened arbitrarily by the whims of currency expansion so that ultimately the funds for new investment come from the consumer by virtue of the necessity for consuming less. This is forced savings. The repeated credit injections cause lengthening of the structures of production, lessening of means for satisfying consumer demand, higher consumer prices and forced savings.
The existence of this condition of forced savings fosters the boom allowing entrepreneurial expansion contrary to consumer votes. Inevitably, however, an expanding economy must witness rising consuming incomes. With a greater income the consumer will be able to bid more for the goods which he desires.\# Prices then will rise, making profit margins higher in the consumer good stages (lower) than in the producer good stages (higher). The existence then of a state of affairs such as this would cause shifts in the structure of production to the lower stages and higher profit margins. It is this downward shift which Hayek says must necessarily take the form of a crisis.\* 

\# Goods which are in limited supply owing to transfers of factors.
\* 11 pp. 40-60.
F. Von Hayek's Recommendations

The business cycle may be likened to a disease, and like a disease of the body the road to its cure lies in the determination of its cause. Hayek blames an unconstant effective circulation of money for the occurrence of cycles, and like other members of the Austrian school, seems to support the position that the cycle can be avoided and full employment maintained if the effective circulation of money is kept constant. Hayek advocates the mainenance of a constant proportion between the total flow of goods and the coefficient of money transactions. He does allow, however, for such increases as would be necessitated by decreased money velocity and/or a lessening of the degree of industrial integration, but in no case, says Hayek, should the quantity of money be increased for the purpose of adding a stage of production.

The entire cycle works of Hayek, in the main, revolves around the central concept that a constant effective volume of money is the "unique prerequisite" to equilibrium. This concept of effective volume of money is based on the assumptions that if the effective volume is held constant, added savings, whether from increased voluntary savings or lower real costs automatically go into proper investment channels, and that if the effective volume is increased, while

# Effective circulation is the quantity of money times its transactional velocity.

## With a high degree of integration there would be less money transactions and vice versa.

* 15 pp. 348-351 and En passim.
savings will still go into investment, ultimately all the savings of a forced nature and perhaps part of voluntary savings economically are wasted.

From this analysis Hayek concludes that effective constancy in the quantity of money is the objective to be strived for in central bank policy. *

What policy then does Hayek advocate to combat cycles? Once the cycle is on its way, says Hayek, — and incidentally Von Mises — nothing can be done to stop it, rather it must be allowed to work itself out. The human suffering attendant upon this process appears to have been overlooked.

In the words of Hayek:
"...the only way permanently to mobilize all available resources is, therefore, not to use artificial stimulants — whether during a crisis or thereafter — but to leave it to time to effect a permanent cure by the slow process of adapting the structure of production to the means available for capital purposes..... and so at the end of our analysis we..... confirm the old truth that we may perhaps prevent a crisis by checking expansion in time, but that we can do nothing to get out of it before its natural end, once it has come." **

* Il n'enn pas.[Il n'est pas] p. 15 pp. 348-351 for a summary of this view.
** Ibid. p. 99.
G. Subsequent Modifications of Hayek's Cycle Theory

The achieving of an objective analysis of a given body of phenomena seems possible only when the phenomena in question are themselves subject to rigid laws of interactions such as are found in mathematics or chemistry. The statement, for example, that the sum of the interior angles of a triangle is 180° is a rigid relationship, and regardless of the approach of the investigator no other correct conclusion is possible. Thus, mathematical formulae can only be observed, compared or grouped in one objective system.

With the science of Economics, however, the case is different. Much of economics appears to fall within the realm of subjectivity. This is not to deny any objectivity to the science of Economics, but rather to define the approach of Economics as a "subjective objectivity". Is this a paradox? Perhaps! Say, for example, that one asks the question, why is the top of a lighted stove hot? One may answer that when the fire burns, the stove top is hot. This is a judgement of perception and illustrates no necessity of relationship. But when one says that the fire warms the stove top then the intellectual concept of cause is introduced showing the validity of the synthetic judgement of necessity and thus moving from subjectivity to objectivity."

The preceding discussion might seem a digression

*C.f. 14 pp. 70-74 et seq.*
unless one considers the question why, Hayek, in the given
observance of certain facts (cycle phenomena) could arrive at
conclusions which he were to deny later? To be sure, in his
most recent book on cycle theory a radical change in his ana-
lysis is not apparent, but instead what appears to be a minor
change is. In the earlier works of Hayek his chain of reasoning
on the trade cycle seemed to follow more or less the out-
line set forth by Von Mises. The later book, "Profits, Inter-
est and Investment" appears to have more of Hayek and less
of Von Mises with some new approaches by Hayek. a

Even in this new book Hayek does not profess to put
forth a complete theory of the cycle; he states, "I do not
yet feel ready to give a systematic exposition of the whole
of this complex subject........" a

In his earlier works Hayek expounded the concept
that a rise in the demand for consumer's goods would cause a
decrease in the demand for producer's goods rather than an
increase in the demand for producer's goods. The reason for
this, said Hayek, was fluctuations in the rate of interest.
I.e.

I. Credit expanded.

A. Interest rate lowered.

B. Entrepreneurs borrow and expand.

# Perhaps 1929 and subsequently conditioned Hayek's
"objectivity".
* C.f. B. 10, 11, 12 En passim.
** 12 p. viii.
C. Structure of production shifts to higher stages.
D. Consumer incomes increase - no expansion in consumer goods.
E. Consumer good prices go up.
F. Entrepreneurs ignore votes of consumers, keep expanding.
G. Finally banks must tighten credit, interest rises.
H. Consumer good field has high prices. (lower stage)
I. Shifts to lower stages - less demand for producer goods.

Hayek in his later work, however, attributes the shifts in the structure of production to profits rather than the rate of interest.* This appears to be a tacit acceptance of the belief that once the boom is started the absolute level of interest rate is non-determining. The rising demand in the consumer goods field involves an increase of the rate of profit in these stages, and says Von Hayek, this increase of the rate of profit is distinct from and perhaps independent of the money rate of interest; furthermore, the rate of profit, is in many respects much more fundamental and effective than the rate of interest.**

* 12 p. 3.
** Ibid p. 3.
In the process of describing the events occurring in the trade cycle (Profits, Interest & Investment), Hayek uses what he terms the "Ricardian Effect". Briefly, Hayek states the Ricardo effect is the determiner of the proportion of labor and machinery used in production and also the type of machinery used. With the rise in the price of consumer goods real wages drop and it then becomes more profitable for the entrepreneur to use more labor than machinery (alter proportions) and to use machinery of a less labor saving type than more labor saving type. This substitution of labor for machinery will continue until (interest rate constant) the rate of profit of the marginal unit of labor is equal to the market rate of interest.\(^*\)

This newer concept of Hayek's in regard to the rate of profit being the determining cause of entrepreneurial actions rather than the rate of interest is the crux of his whole shift in emphasis. The denial of the efficacy of the interest rate as a moving force is a denial on Hayek's part of the mainstay of Von Mises theory of cycles and a negation also of some of his own earlier works.

While Hayek has changed his concepts in regard to the early causal events of a given cycle his discussions of changes in the structure of production, shifts to lower and higher stages, etc., are the same as well as most of his other analyses of trade cycle phenomena. But, as was mentioned\(^*\) Ibid pp. 8-16.
earlier, while his shift in emphasis from interest to profits appears minor the effects on his theory are important. Knowingly, or otherwise, Hayek sounds little like the monetary cycle theorist of his earlier writings. In his latest book he makes frequent references to expectations, a concept which appears to deny the validity of a strict mathematical relationship between the money rate of interest and originary interest, a relationship on which all of Von Mises' and most of Hayek's early cycle works seem to be based.

In effect then, the preceding discussion has given the essence of the monetary overinvestment theory of the cycle as exemplified by the two men most commonly associated with its development, Von Mises and Von Hayek. To be sure, there are other economists who have taken a similar approach to the cycle, nevertheless the work of Hayek - self confessed to be incomplete - is the fullest statement.

No attempt has been make during the foregoing discussion to analyze the Mises-Hayek cycle theory, rather the objective has been to set forth the theory as expounded by Mises and Hayek in order to have reference points for a critical examining of this particular theory of cycles. The theory has been defined now it must be dissected, so to speak, in order to evaluate its merits - or demerits.

* C.f. 3, 10, 11, & 12.
IV. VON HAYEK'S THEORY AND ITS CRITICS

A. His Justification of Monetary Approach

The reasoning by which Hayek justifies - to himself - the use of the monetary approach in defining the cycle is the first point at which his theory is attacked.* This is, perhaps, most necessary, for in the analysis of any given cycle theory the proof or disproof of the basic assumptions is often the validation or invalidation of the entire theory.

Part of Dr. Hayek's justification of his monetary approach is his position that early monetary approaches dealt only with changes occurring in the general price level rather than changes in the relative prices of factors. These latter changes - says Hayek - are the important ones. H.S. Ellis disputes Dr. Hayek on these points. In a literal sense - says Ellis - no such theory as Hayek attributes to the early monetary theorists ever existed. On the contrary, money theories have always dealt with specific and disproportionate price changes. The phenomena of price lags, of labor, debts etc. have always been considered in monetary theories. Hayek's thesis represents an elaboration of the price theories of Wicksell, and as such does not indicate a new approach but rather a novel emphasis on one price - the interest rate - and a greater stress upon disproportionate price changes.**

** 15 p. 349.
Hayek further attempts to justify his monetary approach by implying that "the only defect in a sound economic analysis of the relationship of economic activity in a barter economy, in so far as that analysis is to be used to explain misdirections of production, is that it neglects the use of money...." This particular analysis by Hayek appears to ignore other important differences between the typical economy of the barter theorists and the credit economy. The existence of large aggregates of capital, the deviations of the market from perfect freedom, the presence of contractual agreements of a prolonged nature and the type of ownership created because of the corporate form of business are institutional conditions all too important to ignore. Indeed the modern economic structure as it is known today differs from the typical assumed barter economy in many ways besides money." Thus on the basis of Hayek's concept of the barter system he is not justified in moving to a purely monetary concept of the trade cycle.

# Hayek claims that those theorists who use this barter system to explain economic disruptions - so called "real" theories - were deficient in this neglect of money influences.
* 16 pp. 223-224.
B. "Cheap Money" Means More Borrowing

The next step in the Hayek analysis is, of course, his stand that cheap money causes businessmen to borrow more or seek new loans from the banks.#

The assumption that a reduction in the rate of interest (market) is efficacious in inducing investment appears to be based upon another assumption – in addition to very much et ceteris paribus – that the demand schedule for funds is unchanging over long periods of time. Professor Schumpeter, in addition to the above, concludes that the frequent complaints about the failure of interest to fall enough in recession and depression are irreconcilable with the fact that new investment, and even replacement is primarily......"associated with relatively high and rising money rates." To Schumpeter the occurrence of these frequent complaints on the part of economists shows how most economists contemplate expansion in terms of rigid relationships between the production functions and how recalcitrant they are to acknowledge that shifts and distortions in the demand schedule are much more important than movements along it.##"There are situations in which a zero rate of interest would entirely fail to call forth any additional demand" (For funds).*

# Supra pp. 25-35.
## The demand curve for funds being of course a very important part of the economy – the distortion of the curve would naturally disrupt all the analytical assumption based on this demand schedule.
* 17 p. 604.
Another interesting comment on cheap money is the question of the market rate of interest and what part of cost it plays in production. For example, a change of 1\% in labor and material costs would be much more influence on direct unit cost than a 20\% change in the market rate of interest. In addition, if the elasticity of labor and material were not infinite in the range under consideration any savings effected by a lower market rate of interest could be offset by an increase in labor and material costs.\# These comments are relevant to working capital changes. In regard to fixed capital a lower market rate of interest can mean increased investment if costs of labor and material readjust themselves, otherwise the effect would be nil.\#*

The crash of the stock market in 1929 and the subsequent depression through the 1930's gave "cheap" money rates an opportunity to illustrate their effectiveness in inducing investment. In the early thirties Treasury Bills at one time bore an interest rate of almost zero (1929 = 5\%), Treasury Notes 1\% of 1\%, and commercial loans 2\%. The failure of the extremely important areas of residential building, the general run of intermediate and small scale enterprise, small cities and communities and the more risky ventures to respond to these relatively low interest rates showed that cheap invest-

\# Lower interest rates with increased investment equals greater demand for labor and material – could equal a greater cost for these two factors.

* 18A pp. 461-465.
ment costs via banking system liberality offers no inducement to expansion.

Further statistics on pump priming in the thirties showed that cheap money will not have the "Hayekian" effect nor the dire "inevitable results" of an easy money policy. To illustrate: From 1932 to 1939 the R.F.C. poured four billion into the banking system, one and a quarter billion into the railroads, two and a half billion into agriculture, one half billion to business, one billion to self liquidating public projects; altogether ten and a half billion had been loaned or invested by action of the Directors of the R.F.C. plus three billion by direction of Congress for relief agencies. In addition, the Federal Farm Mortgage Corporation and Federal Land Banks refinanced about two billion dollars of farm mortgages. Home Owners loan corporations refinanced three billion of frozen urban mortgages. These statistics give a picture of the broad supplementation of Central Bank policy designed to supply funds at low cost to the borrower. What were the effects of these cheap money policies - policies which Hayek states will inevitably lead to commercial "disaster"? In the words of A. Hansen:

"But the decade of the thirties offers abundant evidence that cheap money alone is not adequate. Cheap money will not tempt borrowers if there are

# The effects of regressive taxation in the thirties should not be forgotten in analyzing efficacy of these measures.
not available reasonably satisfactory outlets for profitable investments."*

To be sure, cheap money can encourage investments if other conditions are favorable, but it will not of itself produce an adequate volume of investment and consumption. The lessons of the thirties have very definitely illustrated this. No one wants to launch a venture when all that can be seen on the industrial horizon are typhoons - cheap money not withstanding.

The type of analysis as the foregoing seems to point to expectations rather than a strict mathematical relationship between the market rate of interest and originary interest as the prime mover in inducing investment. "The rate of profit fluctuates more than the market rate of interest". Thus a concept can be arrived at whereby the rate of interest and profit are two clearly separate concepts.

Even if lower interest rates did induce investment - an assumption not supported by evidence - the possibilities of lags between better profit expectations, credit expansion, increased borrowing and institution of investment plans must be considered.**

From the evidence that has been gathered above it appears that Dr. Hayek's theory can be attacked heavily on another front. In his last book on cycles (1939)# he tells

* 19 pp. 79-82.
** 20 pp. 163-169.
# 12.
his readers that in "Prices and Production" his mistake was in emphasizing the market rate of interest instead of the rate of profit. As was mentioned earlier, his emphasis changes and with this change in emphasis one is pressed as to whether Hayek's theory is to be called monetary or non-monetary. 1930 - 1938 gave Dr. Hayek some excellent statistics, yet he makes no reference to them in his latest book on cycles. He does, however, restate his thesis, perhaps to reconcile its postulates with the events of the thirties. In any event the change of language by Hayek in his latest cycle explanation does not change much of its basic structure. It does, however, make it appear somewhat hybrid.

\[\text{Supra. pp. 44-47.}\]

\[\text{12.}\]
C. New Investment and the Structure of Production

The next assumption after Hayek assumes an increase in investment is that these investment increases will cause shifts in the structure of production.# This portion of Hayek's theory is the one which has been subject to the most adverse criticism.

To begin with if it be assumed that the demand proportion between producer and consumer goods is changed it does not necessarily follow that the distribution of capital in these respective fields will be altered in the same proportions. The existence of stocks of goods in process must be considered in determining the reaction of the entrepreneur to shifts in demand proportions. M. S. Ellis further states that a given increment of capital has nothing to do with the number of productive stages involved in the completion of intermediate products.  

It appears that M. S. Ellis' criticism in regard to stocks of goods in process being a deterrent to an "increased number of productive stages" is logical. Surely it cannot be assumed - safely - that easy credit will cause a manufacturer to expand when he has a large unsold inventory in process of being finished. As to an increment of capital causing more stages of production, it seems that Dr. Hayek has failed to show that this result was a necessary one. The possibility

# Supra. pp. 29-31.
* 15 p. 354.
of an entrepreneur bettering his liquidity position or expanding in the same stage he is now in via new credit must not be ignored.

In line with Hayek's argument that high prices in a given stage of production will cause shifts to that stage it must be said that this argument implies ease in the mobility of economic adjustments. To be sure price differentials in the different stages probably act to stimulate the redistribution of intermediate goods. But does this happen overnight? Isn't it a more long run concept? When it does happen would not the stages being "abandoned" become more profitable? Would not the magnitude of the price differential have to be large? It appears Hayek's argument, in the main, must be applicable to new supplies of non-specific goods only. The consideration of the importance of overhead costs might indicate that non-specific goods in use might move only in the reorganization of a given plant."

Frequently Dr. Hayek's statement of extending structures of production is met by the criticism that the existence of excess capacity in the economy at the beginning of an economic recovery invalidates his conclusions as to the chain of events attendant upon credit expansion. In regard to this

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# Supra. pp. 32-36.
## Saulnier uses the phrase "prices offered in different stages" whereas for sake of accuracy it seems that profit differentials would be a better term.
+ 16 pp. 253.
possibility Dr. Hayek states his case thus:

"......durable means of production do not represent all the capital that is needed for an increase of output and that in order that the existing durable plants could be used to their full capacity it would be necessary to invest in a great amount of other means of production in lengthy processes which would bear fruit in ......(the) distant future. The existence of unused capacity is, therefore, by no means a proof that there exists an excess of capital ......it is a symptom that we are unable to use the fixed plant to the full extent because the current demand for consumer's goods is too urgent to permit us to invest current productive services in the long processes for which in consequences of (previous) "misdirections of capital" the necessary durable equipment is available."

Thus here Dr. Hayek is stressing the complimentary nature of the factors of production. In addition he stresses that these unused resources are only part of the needed factors of production and that, "it would be necessary to invest in a great amount of other means of production" in order to use these resources. If these statements are true, it offers a reasonable defense against the unused resources criticism.

* 11 pp. 95-96.
The absence of any type of statistical evidence in Hayek's works to support this position forces one to be skeptical in addition to the fact that Dr. Hayek shows nowhere why the unused resources would need such a great additional amount of investment in order to become usable.

J. M. Clark offers a few comments which, in a way, support Hayek's stand that unused resources will not dampen economic expansion or hinder shifts in the structure of production. Clark takes the position that the demand for durable capital equipments is affected by obsolescence of existing units plus the demand for the final product and these in turn may reduce or eliminate excess capacity of particular types. Excess capacity may be of such a nature to be good enough to use for standby purposes or on a part time basis. If demand increased and this capacity were brought into more and more use, it might pay to replace or modernize it.

"Hence the demand for durable equipment does not remain at zero until all the existing excess capacity is in use and then start up suddenly; it begins to rise with any significant increase for the product it manufactures."

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# Could not a shutdown factory merely lack labor and raw materials in order to produce? Is not the plant with its facilities the greatest part of an investment outlay? Would not working capital loans buy labor and materials?

* 21 p. 302.
The significance between Messrs. Clark and Hayek then in this respect is that they take similar positions on expansion and unused resources. The difference between Clark and Hayek is that Hayek stresses the "incompleteness" of existing resources while Clark states that existing unused resources will be quickly used up due to an increase in demand for the product they produce - a sort of accelerator concept. A major difference between them is, of course, the emphasis placed on the cause of economic expansion, Hayek's emphasis being placed on new investment and shifts in the structure of production, Clark's emphasis being placed on increased consumption and the principle of derived demand. Once again the question of which comes first, production or consumption, is asked.

If Hayek's analysis of the expanding economy along with its attendant shifts in the structure of production to higher stages can not be completely accepted then his explanation of the downward process is, therefore, weakened. As has been shown, there is little to support the analysis of upward shifts in production via credit; there is even less to support the analysis of downward shifts. The downward process, is, of course, the reversal of the upward process, the difference being that the expanding shifts are due to credit expansion while the contracting shifts are due to credit restriction and - more important says Hayek - high profits in the lower stages. In the wealth of material available
covering cycles, little comment was found on Hayek's state-
ment of contraction. The reason for this apparently is that
in the affirmation or negation of the Hayekian analysis of
the upward shifts lies the affirmation or negation of the
Hayekian analysis of the downward shifts.#

# See supra, pp. 29-36 for description of shifts.
D. A Constant Effective Volume of Money and Stability

In the introduction to "Prices and Production", Dr. Hayek tells his readers that the concept of neutral money is an analytical device by which deviations from economic equilibrium in a society with non-neutral money may be explained. He appears, however, to forget this self imposed restricted use of neutral money and later both in "Prices and Production" and "Profits, Interest and Investment" he speaks of neutral money# as the only preventative for erratic industrial activity.

The major emphasis to Dr. Hayek's effective volume of circulation is that on no account should the effective volume be increased to cover an added stage of production. If the quantity of money is not increased to cover an added stage, the prices of products will drop reflecting lower real cost.## These prices will drop because of (1) a greater volume of consumer goods becoming available because of the use of longer methods of production and (2) the smaller value of total purchase money available due to the withdrawal of payment media to take care of the added stage.* Professor Ellis' stand on this position of Hayek's is that if by real costs Hayek means the value of consumer goods expressed directly in terms of producer's goods then only reason number (1) repre-

# Synonymous (Hayek) with an effective volume of money.
## Eliminating any inflationary pressure from consumer's bidding up the prices of goods.
* 22 p. 147.
sents a substantiation of a drop in real costs. The decrease in the ratio of the value of consumer's goods to producer's goods is a mirroring of the decline in the interest rate because of decreased time preference responsible for the new increment to savings. Therefore, concludes Professor Ellis, any further drop occurring in a monetary economy following a depressing of consumer goods prices to cover the turnover of an added stage in production, "exceeds by so much the fall of "real" costs. By so much also does the "constant effective volume of money" depart from Hayek's own ideal of "neutral money". Even if this objection be assumed away - says Professor Ellis - declining commodity price over the long run brought on by net capital formation and/or increased efficiency cannot be established as the requisite to "rational behavior on the part of business men"."

Of these criticisms, Ellis believes the most disastrous to be that the proportion of effective volume of money (E.V.M.) in the producer good stratum to that in the consumer good stratum has nothing to do with the current ration of demand between producer's and consumer's goods. Hayek asks his readers to believe that the proportion of savings to consumption of current incomes coincides with the ratio of money volume between producer and consumer strata in a given period. Thus, Hayek, who so often discusses concepts of long run implication, implies a quick relationship to

* 15 p. 351.
demand for consumer goods in period A to demand for producer
goods in period A. Surely the obviousness of the lag in the
ratio between demand in the two strata should prevent its
being ignored by Dr. Hayek. Nevertheless, it appears to have
been overlooked. Furthermore, no sure statements can be made
regarding the absolute amount of money which a given incre-
ment of savings will withdraw from consumption because there
is not of necessity any coincidence of money velocities in
the fields of producer and consumer expenditure.*

Now, if for the moment Hayek is granted his constant
E.V.M., then it must follow that as the average period of pro-
duction increases consumer's incomes must fall. The cause of
this would not be an increase in fixed capital for an increase
in fixed capital would accelerate the movement of physical
circulating capital thru the system, and et ceteris paribus,
release money which would raise consumer income. Rather the
decline in consumer incomes must be traced to entrepreneurs
engaged in manufacturing new intermediate products who would
be building up cash balances. Then regardless of how these
balances are accumulated the effect would be deflationary
because any new savings would be absorbed in these balances.**
This result is the opposite to that visualized by Hayek via
a constant E.V.M.

* 15 p. 354.
** 16 p. 279.
It also appears that Hayek has neglected to consider the necessity of an expanding money supply to compensate for the new balances which new population will desire to build up. Hayek's system does not appear to make allowances for a growing population.

In the case of increasing real income brought about by more effective use of given resources, people will want to hold real balances of greater value than formerly. Now if the economy requires that loanable funds be equated to savings, additional bank loans will have to be made to compensate for those savings diverted into the holding of greater money balances. The holding of greater real money balances is, of course, automatically achieved if prices fall because of increased productivity, but if people wish to gain this end by holding larger money balances and there is no change in the quantity of money, money velocity will decrease and constitute a drain on active circulation.

As stated, Hayek does not preclude adjusting money supply for short run fluctuations in exchange velocity. These adjustments, however, would be difficult to make with any degree of promptness and accuracy due to the frequency and amplitude of short run changes in exchange velocity.

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* 16 p. 279.
** Ibid. p. 231.
### Supra. p. 41.
#### This criticism of Hayek is Professor Angel's and appears to be a valid major objection to neutral money.
In long run changes of exchange velocity it is found that the changes are usually related to the money volume of financial transactions. In addition these financial transactions do not move closely with indices of production which suggests the possibility that the application of Dr. Hayek's short run adjustments could cause a correction of the money supply not warranted by conditions in the field of non-financial activity. Furthermore due to the high velocity of money in financial transactions it seems that this section of the economy would not be significantly affected by changes in the money supply.*

The preceding paragraph is, perhaps, illustrative of a difficulty in the concept of an effective volume of money. Where, how, and when does an authority -whether government or private - undertake to maintain a constant effective volume of money. As a matter of fact, in none of Hayek's three books on cycles does he clearly explain what he means by an effective volume of money, while as far as indicating how this result is to be achieved, Hayek has given no sign whatsoever.

Hayek in further support of his idea of E.V.M. deplores arbitrary increases in consumer credits due to the fact that these increases will lead to economic crisis in the earlier stages of production by altering the proportion between the demand for consumer's goods and the demand for consumer's goods and the demand for

* 16 p. 237.
producer's goods. If there is any degree of unemployment, though, the increased demand for consumer goods and its resulting accelerator effect would revive confidence in capital goods industries and increase employment.* Hayek in his argument assumes consumer credit expansion to occur in a fully employed economy while the above criticism, of course, assumes otherwise. Most of Hayek's analysis stems from a fully employed economy so in many respects Hayek has explained only "half" a cycle and has recommended policies that under many possible positions of the economy would not work.

Dennis Robertson makes some interesting queries regarding the idea of neutral money - queries which, perhaps, strike at the very core of the problem. He asks what is left of the concept of neutral money for a society which has been stopped in a steady advance or has never had one? Does neutral money imply keeping the status quo, regaining a previous position, or attaining one never before reached? Perchance not only is it impossible to use the idea of neutral money as a guide to policy, but impossible "even to believe that it means anything at all". If it has no meaning in a fluctuating society, surely it is not worth bothering about in a steadily progressing one. It is, possibly, a "will-o-the-wisp".** Mr. Robertson also asks what the neutral rate of interest is.#

* 16 p. 290.
** 21 pp. 311-321.
# Mr. Robertson is, of course, seeking more than a definition.
Another serious criticism of neutral money is that in a progressive society with an increasing population, money wages would tend to fall. The present development of trade unions and their general desire for a rising real wage and a rising money wage also would not reconcile easily with a neutral money economy.

Neutral money in a growing state would cause commodity prices to decline. Could it be assumed, however, that the commodity whose prices would fall would be those being produced at lower cost and the price reductions would equal the cost reductions? If it could be assumed then, perhaps, neutral money would be fine. Unfortunately, the cost reducing industries might be those best able - thru monopoly control - to keep prices up, thus forcing those industries least able - industries whose cost had not fallen - to drop prices. Thus neutral money could create rigidities, maladjustments, cause profit margins to be destroyed and business to contract. The only economy where neutral money would not have this effect would be one having a perfect flexibility of prices and if prices were perfectly flexible then one money policy would equal any other for with perfect flexibility the effects of money policies would be nil.*

Statistically some of Hayek's ideas on neutral money are upset by figures. Increased productivity and

* 183 June 33, pp. 332-333.
neutral money - says he - will register in lower prices. An increase of three per cent in productivity would be followed by price decreases of three per cent. Yet from 1873 - 1896 prices fell on the average 2.9 per cent per year while this period may be called one of depressed industrial activity. On the other hand, from 1896 - 1914 there was a slowly rising price level and fuller employment. It seems rather that equilibrium in the cost price relationship is more important than neutral money. "Neutral money is not desired in the long or short run, a gently falling price level is not advantageous in a modern economy". The institution of neutral money and price stability in a mechanical manner in the economy is dangerous and is likely to result in maladjustment.*

* 188 June 1933, p. 334.
E. Hayek on the Effect of Voluntary Savings

In his discussion of forced savings, Hayek distinguishes between an expansion of the economy via an increase in voluntary savings and an increase via credit expansion and forced savings. Via an increase in voluntary savings the expansion of commerce will - according to Dr. Hayek - occur in an orderly normal fashion. This assumption of an orderly expansion, however, pre-assumes some conditions existing in the economy which will not of necessity prevail. Hayek finds additional savings passing thru the financial institutions into the hands of those with the best profit expectations and with the investment plans which will just use the amount of funds available for capital extensions. This sequence of events pre-supposes that these entrepreneurs will entertain the correct views of the price relationships of the future. How can it be said that a voluntary increased demand for producer's goods will follow this fortunate course? Naturally, new funds via added savings are limited and somewhere there must be a limit to their use.

To go on, can it be said that entrepreneurs will hold correct views as to future price relationships? In a market competing for loanable funds, the loans will be made to borrowers who have the best profit expectations, but realistically in view of the difficulty in framing correct

# Supra, pp. 37-40.
views "it seems reasonable to question the proposition that funds will flow into precisely the proper stages and that there will be a precisely appropriate distribution as between the many alternative uses in any given stage." Also the record of results of the near past will be determining in the use of available savings. Furthermore, a possible bias on the part of lenders for the corporate form of business may alter the distribution of available savings in a manner quite varied from the assumed Hayekian pattern. The easy orderly process as visualized by Hayek attendant upon an increase in voluntary savings is, indeed, an ideal assumption which denies reality its proper place and which makes the particular economic relationships involved appear simpler than they are.

* 16 p. 256.
"We are merely reminding ourselves that human decisions affecting the future, whether personal or political or economic, cannot depend on strict mathematical expectations since the basis for making such calculations does not exist."

John Maynard Keynes.
F. General Criticisms and Queries

The preceding discussion has pointed out the more outstanding criticisms of the particular sections of Hayek's theory of cycles. There are some criticisms of Hayek's theory, however, which are not specific in nature but are rather directed at the theory en toto and are worth mention here in addition to many queries which Dr. Hayek would do well to answer.

R. Saulnier offers one of the few defenses of Hayek to be found in any connection. Saulnier does not support Hayek's theory, but he does take the stand that much of the criticism leveled at Hayek for his idea of neutral money is irrelevant because it was meant to be a tool of theoretical analysis rather than a weapon of practical policy. On the other hand, one Piero Sraffa takes another stand. He feels that Hayek's beginning stand on neutral money is one of theoretical analysis and his ending stand is one of practical policy. From a close reading of Hayek it appears that Sraffa is right.

Hayek suggests no positive policy for control of credit, instead he is very vague in this respect; yet throughout his works the implication of government control of credit

* 16 p. 288.
** 25 pp. 42-51.
# Sraffa's criticism of Hayek in this publication is, perhaps, distinct, if only for its bluntness, while it is, perhaps, unfair in its interpretations C.f. 15 footnote p. 356 in this regard.
is always present. How would these controls be utilized? J. M. Clark's position with respect to this is that if controls were comprehensive enough — extending to all forms of credit — they could limit industrial expansion; but — says Clark — the existing machinery is not comprehensive enough and seems unable to stop bootleg credit.

Hayek's assumption of technological advance under a decline of prices paralleled to real costs is open to challenge. Historical observation substantiates the fact that periods of continually falling price levels engenders hesitancy and pessimism on the part of entrepreneurs and induces savings into investment only very slowly. Innovations lag. These phenomena lie at the roots of the demand for the central money authority to avoid deflation at all costs and, perhaps, encourage a small amount of inflation via a slowly rising price level.

The constant effective volume of money advocated by Hayek allows for sufficient elasticity to prevent meaningless upward and downward movements of prices initiated by a contracting or expanding sphere of money economy, greater or lesser integration or depression abroad. But, may not the question be asked: Would not any intelligent banking policy attempt to maintain a "constant effective volume of money" against these disturbing influences? This

* 21 p. 45.
** 15 p. 355.
question in turn incites another question: Which is worse, Keynes banana plantation dying for want of an inflationary stimulus or Hayek's juggernaut created by forced savings and now useless because of the disappearance of the interest differential?*

Nowhere has Hayek stated what type of monetary restrictive measures he would use to dampen the boom. To be sure, it cannot be denied that monetary measures could check a boom; but if the factors favoring an investment expansion are vigorous the monetary measures would have to be applied with great force in order to neutralize the highly attractive speculative undertakings which are the forces leading the economy on the road to the boom. If, however, the restrictive monetary measures - such as raising the re-discount rate - were to be applied rigorously enough to choke off ventures so alluring as to be the driving forces of the boom, the more stable sections of the economy will be choked off to an extent incompatible with the wish for stability.**

High interest rates in the latter twenties failed to stop the boom. It appears that the ease of capital flotation during this period was the main factor which allowed the investment boom to be carried farther than was economically justified. It was optimism rather than a concept of originary interest minus market rate of interest equals inducement to

* 15 p. 356.
** 19 pp. 71-72.
invest, which was the leading factor causing investment to be pushed to such a level. On the other hand, Professor Hansen feels that even if banking policy had successfully stopped investment expansion short of errors induced via monetary situation, a saturation of investment would still have been reached leading to a deep depression.*

Seemingly Dr. Hayek has ignored the effect of anticipation of windfall gains during prosperity, viz, a greater willingness to pay interest charges even at higher levels because of this anticipation of windfall gains.**

In addition to these general criticisms Hayek is criticized further for some of his definitions. Professor Knight, for example, questions Hayek's distinction between original and primary factors of production or any other factor of production. There is no valid distinction - says Knight.# The Hayekian period of production is also attacked by Knight. He feels that no accurate statement can be given to a period of production or investment. Production and consumption are simultaneous in the only manner of timing in terms of which economic analysis may be made. "There is no production process of determinate length other than zero or history".

Professor Knight's attack is, in reality, directed

* Ibid.
** 17 p. 604.
# In the reading of Hayek one will find these distinctions made by him far from clear.
at Hayek's extreme abstraction in regard to structures and periods of production, roundabout methods of production and shifts in production structure. Dr. Hayek often appears to assume time intervals in his analysis and often he appears to ignore time completely and this defect leaves him open to sharp criticism with respect to his periods of production."

Earlier in this paper Dr. Hayek's reasons for rejecting the "old" static analyses of the cycle were set down. Now Eric Lundberg rejects Hayek's solution for some of those very reasons which Hayek rejected the older theories. Lundberg disavows Hayek's analysis because he claims it deals with a non-expanding system. If it be assumed that saving and investment are equal in a given period only shifts in employment between production of capital goods and consumption goods are possible, leaving total employment and income unchanged in time. Hayek's solution is one of static equilibrium between consumer goods and capital goods according to relative demand manifested by consumer's outlay and savings. Therefore any rise of income and employment - per Hayek - will involve - "ex definitions" - a process manifesting forces of disequilibrium "necessarily" leading to a crisis. Mr. Lundberg has asked a shrewd question here: How does Dr. Hayek account for growth?**

* 16 pp. 263-269.
** Supra. p. 25.
*** 24 p. 231.
Lundberg also introduces an interesting sort of an ex ante and ex post concept to inducement to invest which seems more reasonable than that of Dr. Hayek. With an increase of consumer outlay, retailers will, at first, increase liquidity — then — in anticipation of this new level continuing then will increase stocks. Producers are supposed to react in a similar manner. Lundberg is saying in other words — that past receipts determine future expectations. This, of course, is in opposition to Hayek specifically with respect to Lundberg’s attributing an increase in consumer outlay as the initiating force.

The preceding set of analyses of Hayek’s theory represent the outstanding objections to his solution. It appears that in the process of investigation of Dr. Hayek’s cycle theory the investigator will find that most of the discussions of Hayek’s analysis are adverse in nature, while favorable criticisms — few in quantity — offer no further substantiation of Hayek’s position.

Aside from the many adverse comments on Hayek’s works, there are many questions raised by his analysis which if unanswered represent extremely damaging attacks on the validity of his thesis. For example: Is the Hayekian pattern inevitable regardless of the point at which the money is

** C.f. 25 p. 66 et seq. The argument presented in this work is, in effect, Hayekian.
injected into the economy? What proportion of money injections is passed backwards with its prices raising effects on previous stages, and what proportion finds its way immediately into the income stream? What are the ramifications of the distributions of these proportions? What is the effect of large inventories at the time of expansion and how does the existence of large unused resources affect pattern? Are possible changes in income and transactional velocities of money as a result of credit expansion properly considered by Hayek? How soon can the productive structure adapt itself to changes in the structure of prices and profits? What is the effect of monetary changes on the expectations of capital productivity as well as on currently realized capital gains?*

Another general criticism of importance concerning Hayek's stand that orderly expansion occurs via increased voluntary saving. He does not explain, however, how these increased voluntary savings are to come about. If, for the moment, his assumption that through increased efficiency, etc., savings in cost will be passed on to consumers in the form of lower prices be accepted, then the following assumptions must be accepted also: The consumers who, because of lower prices, will have higher real incomes will either not increase their propensity to consume or will even decrease it in the face of an increased real income. There is no point in getting in-

# Hayek has given an answer to unused resources but is it adequate? Supra, pp. 55-57.
* 16 p. 260.
volved here in the Keynesian argument of a stable propensity to consume, but it might be added that an increased real income could possibly cause the recipient to move into a higher consumption bracket than previous to the increase in income leaving net savings unchanged. Furthermore one must accept the assumption that wages as determined by the entrepreneur in his wage policies do not and will not reflect changes in the cost of living reflected in lower prices to consumers.#

To move away from reality even more it must be assumed that the entrepreneur will pass on any drop in real costs to consumers and that there will be no restrictive forces preventing this action.## Now if all of these assumptions are accepted - for the sake of argument only - the conclusion is that when production reaches a plateau of maximum efficiency and technological advance then no new growth will occur until some new technique or greater efficiency appears causing lower real costs. But is not this the innovation thesis of Professor Joseph Schumpeter? Quo vadis Dr. Hayek?

# With lower costs of living might not wages be lowered also?
## C.f. Supra, p. 62.
V. CONCLUSIONS

From the viewpoint of an impartial juror it must be said that Dr. Hayek has, indeed, created a "mare's nest". He begins by criticizing the old static analysis of cycles, then proceeds to present his readers with a static analysis based on rigid assumptions of extremely abstract natures. In many cases he has failed to follow his assumptions to their logical conclusions and there are often large gaps in his reasoning.

As was mentioned in the introduction, this work was not intended to prove or disapprove the theory of Dr. Hayek, but rather to look at it, define it, and question it. In the process of this looking and questioning much evidence was encountered which attacked Hayek's analysis. To be sure, these attacks have not, as yet, been successfully repulsed by Hayek and until they are, until he fills in the gaps in his analysis and answers the many queries his thesis incites, his explanation is indeed vulnerable.

One must remember, however, that Dr. Hayek has protected himself by telling his readers that his analysis is not the full answer and that he does not feel ready yet to give a full explanation of the cycle.* This defense is of no avail, actually, for by the time Dr. Hayek reaches the closing pages of his three works on cycles he is sure that he has explained the cause of industrial fluctuations.

* 10, 11, 12 Introduction.
APPENDIX I

The cycle development of von Mises was not discussed as such because an analysis of Hayek's work is in effect an analysis of von Mises'. There is one statement of von Mises, however, that seems to be a case of circular reasoning, and as such is worthy of a comment. He ascribes the motivating force in the demand and supply of capital to the factor of originary interest, i.e. "It (originary interest) determines how much of the available supply of goods is to be devoted to consumption in the immediate future and how much to provision for remote periods of the future". Now, if originary interest is the motivating force in the demand for and the supply of capital then it must follow that originary interest determines the market rate of interest. To illustrate: Originary interest motivates the demand for and supply of capital; the demand for and supply of capital determines the demand for and the supply of lendable funds; the demand for and supply of lendable funds determines the market rate of interest; therefore originary interest determines and is equal to the market rate of interest. This is, of course, nonsense. Hayek on the other hand, says the demand for and supply of capital is determined by the market rate of interest.
APPENDIX II

In line with Hayek's implications for strict regulation of currency a note of caution seems appropriate. In the words of J. M. Clark:

"To conclude, there is no simple formula or set of formulas guaranteed to cure all the irregularities and shortcomings of the system of private enterprise. If we are to keep the system at all, we must expect to put up with a good many of those shortcomings including some business fluctuations. On the other hand the operation of the system can be improved and the fluctuations minimized by intelligent action. And it goes without saying that we shall be dissatisfied so long as there are serious shortages of employment, and that we shall be irresistibly moved to tinker with the system. Such tinkering is dangerous; granted. If crudely and impatiently done, we may find that we have, without wishing it, tinkered the system out of existence. But doing nothing is dangerous too; we live in dangerous times. What may be reasonably asked is that, when we tinker, we shall do it with a solemn sense of responsibility and with the utmost foresight humanly possible as to the consequences and their dangers."

* 21 p. 310.
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