Edinburgh School of Economics

Discussion Paper Series

Number 299

From Keynes' Liquidity Preference to Gesell's Basic Interest

Ahmed Anwar
(University of Edinburgh)

Date
December 2020

Published by
School of Economics
University of Edinburgh
30 -31 Buccleuch Place
Edinburgh EH8 9JT
+44 (0)131 650 8361
https://www.ed.ac.uk/economics

THE UNIVERSITY *of* EDINBURGH

From Keynes' Liquidity Preference to Gesell's Basic Interest

Ahmed Anwar*

University of Edinburgh

Abstract

In his General Theory of Employment, Interest and Money, John Maynard Keynes devotes a section in chapter 23 on the theories of Silvio Gesell, best known for the proposal to use stamped money. Although the account is generally favourable, Keynes finds *a great defect* in Gesell's theory. We look carefully at this section together with Keynes' own theory of liquidity preference which Keynes considers a completion of Gesell's *deep insights*. We will argue that Keynes' was in fact mistaken on the defect and that although both Keynes and Gesell identify the same theoretical problem, a special role that money plays in preventing the optimal accumulation of capital, it is only Gesell's reform that in theory provides a solution.

*I would like to thank a group of dissertation students over a few years and the group of students on my History of Monetary, Capital and Interest Theories course (2020) who have helped me crystallize some ideas. I would like to make special mention of: Donald Rutherford who is an encyclopedia of knowledge and our weekly discussions over the past few years have been like a guiding hand; Sophia Schneidewind, Ryan Woodgate, Baron Hasslinger, Paulina Weiss and Jamie Ross for challenging and insightful discussions; and finally Alec Edgecliffe-Johnson who graduated in 2018 and did his dissertation under my supervision on Gesell. It was Alec who first introduced me to Gesell, beginning an exploration of ideas that culminated in me teaching the honours course mentioned above and this paper.

1 Introduction

"How was it that the Marxian theory of capital succeeded in ousting that of Proudhon and in giving sovereign sway to communistic socialism?" Gesell answers, "No capitalist is afraid of his theory, just as no capitalist is afraid of the Christian doctrine; it is therefore positively an advantage to capital to have Marx and Christ discussed as widely as possible, for Marx can never damage capital. But beware of Proudhon; better keep him out of sight and hearing! He is a dangerous fellow since there is no denying the truth of his contention that if the workers were allowed to remain at work without hindrance, disturbance or interruption, capital would soon be choked by an over-supply of capital (not to be confused with an over-production of goods). Proudhon's suggestion for attacking capital is a dangerous one, since it can be put into practice forth-with. The Marxian programme speaks of the tremendous productive capacity of the present-day trained worker equipped with modem machinery and tools, but Marx cannot put this tremendous productive capacity to use, whereas in the hands of Proudhon it becomes a deadly weapon against capital. Therefore talk away, harp on Marx, so that Proudhon may be forgotten."[1]

In the spirit of the times, we start with this light hearted conspiracy with some irony - it is now Gesell that has been largely forgotten! The sentiments in the quote above are expressed succinctly with Keynes' *euthanasia of the rentier* and Gesell's proposal for stamping money was a solution to the same problem that Keynes identifies in his General Theory. The essence of the idea is a monetary theory of interest that explains how interest that has a purely monetary cause perpetuates the scarcity of capital. Keynes however, proposed a very different solution.

Their theories are strikingly similar but not original, the monetary explanation for the scarcity of capital can be traced back to Proudhon. Dillard (1940) notes that with both Gesell/Proudhon and Keynes/Gesell, we should take Gesell and Keynes'

[1] Gesell (1929) pages 8-9

word that they developed their theories independently.[2],[3] He gives a comprehensive study of Proudhon, Gesell and Keynes which seeks to understand how it is that the same idea has arisen independently on three occasions. He identifies a common social and political philosophy that can be summed up as individualism as opposed to collectivism. Gesell identifies himself very closely with the Manchester School but adds the missing key that prevents the free workings of the market to realise a natural order, neutral money. Proudhon who has been widely misunderstood with his *property is theft* believed very much in private property or using the distinction he made, possession, but saw that inequity arose from the income earning capacity of capital that is kept scarce through a monopoly on financial capital. In both cases we have a free market, libertarian socialism that identifies a fault with the monetary system that prevents the free workings of the market system. In his discussion of Gesell, Keynes identifies with this anti-Marxian socialism as he calls it. He also sees the solution must lie in private ownership rather than state ownership of the means of production but after identifying the same mechanism that afflicts the monetary system, he sees no alternative to the socialisation of investment to solve the problem. In his comparative analysis, Dillard reflects how contrary this is to Keynes' social and political philosophy. After offering a brief analysis of each, he suggests that a more comprehensive analysis should evaluate the three on the internal consistency of their theories. We offer an evaluation along these lines for Gesell and Keynes and argue that it is only Gesell's reform that in theory provides a solution. In section 2 we present an overview of Gesell's theory of basic interest and in section 3, the relevant parts of the General Theory that relate to Gesell, up to the beginning of chapter 17. Section 4 then uses the framework of chapter 17 to present Keynes' theory of liquidity preference and contrast it with Gesell's basic interest. After developing his theory, Keynes discusses how it relates to Gesell's in chapter 23. He recognises the

[2]Dillard (1940) pages 17-18

[3]Preparata (2002) takes a more conspiratorial view that leads him to an incredible assessment of Keynes' motives.

deep insights and how they link to his own distinction between the marginal efficiency of capital and the money rate of interest with the latter putting a lower bound on the former. We will present this discussion in section 5, together with the defect that Keynes finds with Gesell's proposal for stamped money.

There has been a revival of Gesellian ideas of negative interest rates to break the zero lower bound constraint as a solution for central banks and monetary policy. However, we will argue that nothing could be further from Gesell who was proposing stamped money to prevent this situation from arising. The fundamental problem we have is excessive debt which has built up because we have had a fiat system where money has had this dual property of medium of exchange and store of value. Gesell in fact devoted a section to precisely this and predicted a situation close to the one that has arisen. We present this in more detail in section 6 and then discuss its relevance to the zero lower bound constraint in section 7. These two sections will help us to evaluate Keynes' proposed solution from Gesell's perspective in section 8. We will end with an evaluation of the two theories in section 9.

2 Gesell

Imagine a society that is in a stable stationary equilibrium with no population growth. The inhabitants are advanced humans who see the world truly[4] and do not discount the future. They have reached the golden rule level of consumption and have an economy that simply replicates itself through time. The return on capital is zero and is privately owned. To our thinking, this is strange for what value can there be in capital that does not give a perpetual income? The answer is simple, the price is the cost of producing it new and the value in owning it is as a store of value - with zero interest, its value stays the same through time! The income from the capital

[4]Bertrand Russell (1917) "Whoever wishes to see the world truly, to rise in thought above the tyranny of practical desires, must learn to overcome the difference of attitude towards past and future, and to survey the whole stream of time in one comprehensive vision."

then is from its future sale, a total income equivalent in amount to initial savings. The inhabitants work for 30 years and then live for 10 years in retirement. They are perfectly rational and forward looking and save $\frac{1}{4}$ of their income when working and use it to buy capital. This is sold to them by the retired population who live off this income and consumption remains the same throughout a life. The capital is rented from the owners at the cost of depreciation so firms are simply maintaining its value. It is a complex economy in which goods are allocated through a decentralised market mechanism with the use of *shrinking* money. This was an innovative system that was adopted by their founding mothers following the ideas of a great social reformer and economist, Silvio Gesell. They have now been using the system so long that no one thinks twice about the fact that if they hold on to money, it shrinks continuously at a rate of 5% per year. The money is simply used as the medium of exchange. All that matters to anyone is that there is this social convention and this is what society has coordinated on. Nothing else has this property that it is universally accepted in exchange for goods because it is universally believed that it will be accepted in exchange. The total stock of money remains constant as the issuing bank is continuously creating new money which is distributed equally to all the inhabitants.

Let us now think through, with Gesell, the consequences of introducing a money that does not shrink. Let us suppose that they collectively agree to simply get rid of the 5% shrinkage and have a money that doesn't shrink at all. Money now becomes a store of value that has the same zero return as real capital but is more valuable in some way. We should perhaps not use the term liquidity just yet. We will also say at this point that this extra value does not arise from uncertainty in the real economy. Gesell has a different explanation to do with money's necessary role as a medium of exchange. Let's think first about bilateral trading. A seller with a perishable good is randomly matched with a buyer who now comes with money that does not perish. The negotiation is no longer on the same terms as before! Now Gesell highlights that the buyer may still be under the same compulsion to buy as before. If they are buying

bread then although it is true that the bread will perish, the buyer may not be able to delay purchase so easily. So those using their income to just about get by will not benefit from this new money. If we think more generally about goods or wares as Gesell calls them, some buyers will have credible options to delay purchase and the cost of searching is now less. The equilibrium price they now pay will be less and the difference in the prices can be seen as an additional payment to get the buyer to part with the now more valuable money. Gesell calls this basic interest. It has nothing to do with productivity and thrift. It arises purely in the exchange system. It is now better to store wealth in the form of money rather than real capital simply because it can also be used as a medium of exchange. To be clear, before the start of this process, capital can be sold at a price that is not uncertain and the money can be used to buy goods so it does not matter that capital is not a medium of exchange. There is something emerging in this system through the exchange process that raises the value of money above existing real capital. It will be useful to consider another dynamic involving the merchant who buys on borrowed money and then sells with the interest on the loan added to the final price. The interest again is the basic interest that is required to entice the holders of money to part with it. The exchange process can't operate without money and the more the holders hold it, the greater the toll they can extract to part with it. The process involves a large number of individuals who simply see the benefit relative to the previous margin to holding money but at a higher level we see how this becomes self fulfilling with a tacit monopoly that exploits the money convention. The money holders are now extracting a rent from the exchange process. Whereas previously, money was providing this valuable service for free, it is now coming at a cost. There are however limits to how much rent money can extract. At some point, it will be less costly for our merchant to offer a bill of exchange and we can imagine institutions that will arise willing to discount these bill, spreading the risk. All of this is costly, giving some margin that the existing convention of money can exploit. Gesell suggests that this limits basic interest to 5%. So to make money neutral and return to *free money*, it must perish at 5%. It is here

that we see uncertainty enter the picture with money getting a premium return over possible substitutes from its relative liquidity and the level of uncertainty determining what this is.

Now let us turn to what happens to real capital. If you lend out money you get basic interest but lending capital gives a zero return. Capital is too abundant and it will be decumulated over time until the return on it matches that of money. Now this is contrary to what we know to be optimal for this society as the future is not discounted! We are now at less than the golden rule level of consumption and have less than the optimal amount of capital. The financial money monopoly causes the real economy to contract.

But there is more. Gesell uses this apparatus to explain deficient demand, depressions, and deflationary/inflationary cycles. We can start with our economy when money first starts to be hoarded. Capital is not maintained or replaced leading to unemployment and a contraction in incomes and demand. Downward pressure on the prices of wares now comes from falling incomes and increased hoarding of money which is now giving a return simply by being held (because of falling prices). We now have uncertainty endogenously created in the system through the hoarding of money and self fulfilling expectations sustaining a deflationary spiral. It is in fact the depression that eventually creates a sufficient scarcity in capital so that its return comes up to basic interest and perhaps continues beyond this point. Eventually we come to the point when expectations start to turn and as they do hoarded money comes out on the market for wares increasing prices (it is now costly to hold on to money because of rising prices). With optimism returning there is an expansion of new investment creating incomes and a high demand for loans. Gesell also notes that with banks creating credit there is further upward pressure on prices as this effectively increases the velocity of money (rather than thinking of this credit as money). There are similarities here with Wicksell's cumulative process.[5]

[5] Ilgmann (2009) gives a reference to a reference that makes a connection to Wicksell (in German). First paragraph, page 552

Silvio Gesell was born in Sankt Vith (now Belgium). He moved to Berlin at a young age to work with his merchant brother and then moved to Buenos Aires at the age of 24 where he opened the *Case Gesell* selling imported dental equipment. It was through his experience of the Argentinian depression in the late 1880s that he began developing his ideas on the monetary system. He released his first work on monetary reform in 1891. These early ideas contained key insights on monetary dynamics, particularly the problem of hoarding money and the idea to ensure it is used only as a medium of exchange. *The Natural Economic Order* was published in 1916 and first published in English in 1929. The essence of his theory of interest is contained in the simple example above.

Following the early work of Dillard, there has not been so much academic interest on Gesell's ideas and the close relationship with the General Theory. Ilgmann (2015) gives an overview of the theory including many references to works not available in English and a biography. Onken (2008) traces Gesell's influence through the 20th century and Darity (1995) builds on Dillard's connection between Gesell and Keynes. Blanc (1998) evaluates some of the experiments with free money and gives a critical evaluation on whether it can work on a large scale. There is a close examination of how much Keynes' monetary theory is inspired by Gesell in Preparata (2000) and an evaluation of Gesell's contributions in Preparata and Elliot (2002). By far the most comprehensive work on the Keynes/Gesell connection was Dillard (1940) mentioned in the introduction which he follows with a series of papers, Dillard (1942a), (1942b) and (1946). Finally, the connection is also highlighted in his book on Keynes' monetary theory, Dillard (1948).

We will go over the work in a little more detail with a focus on parts 3 and 4, *Money as it is* and *Money as it should be*. For ease of reference, the page number will be given in parenthesis to indicate the passage that has been discussed and these passages are reproduced in the supplementary material. This will be a tour through the work, selecting key passages that will help to present his theory of money and also the economic system.

2.1 The Natural Economic Order

The theory of interest needs a theory of money as opposed to a theory of capital. Interest on capital arises from interest on money which is caused by the form of money that has been used. Gesell is inverting the theoretical understanding and sees that it is only Proudhon who has come close to understanding this property of money, where as Marx neglected money. (59)

Like Proudhon he recognises that money does not have to have intrinsic value or be convertible into something that does. Even with paper notes that are backed, the true forces that give money its property of a medium of exchange are not reliant on the fact that the paper is convertible. The theory he presents of money is essentially a State theory of money which becomes the only universally accepted medium of exchange. It is a forced currency in the mutual interest of society. The specialization of labour creates an exchange economy that necessitates a medium of exchange and the State can simply provide paper money that society coordinates on. (67,69,73)

The labour theory of value is dismissed with the market process taking centre stage. Individuals are motivated by self interest to get the best price. They will exploit opportunistically any information they have on the eagerness of the other party and deceitfully hide information that can be exploited. It is not the labour that has gone into making the product that mystically imparts value but demand for the product and the negotiating skills of the sellers/buyers that determine the price. We also see Gesell's individualistic philosophy with self interest as the natural driving force in the economic realm. No moral judgements should be made in using the language of exploitation (he later extends this to usury, it is simply a different manifestation of the same self interest). (70,158)

Money thought of as a medium of exchange circulates only in the exchange economy. The supply of wares is the demand for money and the demand for wares is the supply of money. He makes a distinction between this demand for money and what he calls the desire for money. This perhaps is not the best term for what he is seeking to

describe but the distinction is clear. The demand for money arises in the market for wares whereas desire arises in the market for loans. When a merchant in his example sells calico he is demanding money, this is an exchange in the market. When however he offers a bank a bill to be discounted he is given money for it but this is not a demand for money as no wares have been sold. He has simply borrowed the money in a separate market for loans. In the exchange economy, someone (who desires a bill) has passed their supply of money to the merchant who can now use it to demand wares. The term desire is used as the market for loans is seen as subjective, based on expectations and is coordinated through rates of interest. The market for wares on the other hand has a completely objective system of exchange and is coordinated through prices. (91)

However, there is a problem with this picture of the exchange economy - an asymmetry in exchange created by the fact that wares decay but money does not. Supply of money can be delayed without incurring a loss but supply of wares which is the demand for money cannot. Sellers are compelled to sell and any delay only makes their bargaining position even worse and they will be exploited for their greater desperation (or embarrassed for their need as Gesell puts it). We see a remarkably clear understanding of a dynamic bargaining process where a seller will be sure to sell early to avoid greater exploitation from a more desperate position. (100, 101)

Money as the only medium by which sales can be completed can extract a tribute. Imagine two traders who have wares they can supply to each other but are separated by space and time. A middleman who has money and is aware of the demands and supplies can facilitate this exchange. However, with the seller's compulsion to sell they can extract an additional surplus. They can walk away from the sale with their money intact. Gesell is clear that this is separate from the commercial profit of the middleman for his labour. We can also think of the middleman borrowing the money at interest and in addition to commercial profit, adding the interest to the sale price. The interest tribute goes to the holder of money and is extracted from the exchange process. (103)

This perspective on money then allows Gesell to see very clearly the instability of the monetary system with self-fulfilling deflationary and inflationary processes. The process described above requires our middleman to expect enough profit to be able to pay the interest. If expectations falter then they will not borrow and demand for loans and demand for wares will fall. Instead of going through the middleman back into circulation some money is hoarded. Supply however is under compulsion and with excess supply prices will fall. With falling prices, further demand for loans and wares is withdrawn while to the old and now urgent supply, new supplies are added. As Gesell puts it supply is increasing because demand is withdrawing and demand is withdrawing because supply is too large relative to demand. Prices are in a downward spiral in the exchange economy and interest is depressed in the loans market because of commercial losses. (104)

The inflationary process is simply the reverse with rising prices giving rise to commercial profits, increasing demand for loans and the hoarded money being released. He notes that this is all magnified by bank credit. During an expansion, banks are expanding credit which further increases prices. During a contraction, merchants are making losses and credit is contracting further reducing prices. He doesn't consider that credit is money but it becomes a substitute for money when there is optimism. (105)

Responding to proposals for a fiat currency that is managed by the State but does not shrink, he explains how the previous arguments on instability will still apply. It is not that banks create credit that is the problem, this simply magnifies the problem. The instability arises from the hoarding of money as interest rates come down. A policy of increasing the loan supply by issuing new money to fill the gap left by the hoarded money does not address the instability. The dynamic process that he describes resembles the situation we are in at the moment and has been missed by the recent literature proposing a Gesellian solution to overcome the zero lower bound. We will present this part in greater detail in section 6 and the connection to the present in section 7. (112a)

Money is the medium of exchange and is not able to perform this role effectively if it is also a store of value. It is the volatility of the store of value role that is the essential problem. When money withdraws, sales are left incomplete and when it returns, there are insufficient wares on the market. For the exchange market, money must return immediately and if the seller does not wish to purchase wares then there is a loans market where you pass the purchasing power over to someone who is in need of it now in return for future purchasing power. The State has no business interfering in this market where the interest rate is determined by demand and supply of loans. (112b)

We then come to the stamped money proposal. A £10 note must be stamped every week at the post office at a cost of 1 pence to remain legal tender. With 52 1 pence stamps, we have a 5.2% annual rate of depreciation. This puts money under the same compulsion to circulate as wares. In bilateral bargaining, we now have a level playing field. To avoid the depreciation, the holder of money will buy a ware, or pay off a debt, or lend the money even if they have to offer it at a reduced interest rate. Crucially, they will not now hold it (or suddenly decide to bring hoards onto the market) disrupting the exchange economy. (123)

Imagining the implementation of the proposed reforms, Gesell makes a series of observations from the perspective of different economic agents. From the perspective of the manufacturer, there is a more direct relationship between manufacturers and consumers who are now forced to plan a little more with orders placed and paid for in advance and only a marginalised role for the merchant. This reduces the cost of commerce and he also notes how a more direct relationship improves the transmission of information. Here we see an understanding of the role markets play is coordinating economic activity with a mechanism that has now become more decentralised and therefore more efficient. (135)

The speculator is a big loser from the reform. Investors will not be so ready to part with assets at the hint of bad news as the alternative of holding money for a while is not now so attractive. It is in moments of over reaction to bad news

that speculators are able to make moves and once the moment has passed (revealing that these were just rumours worked up by speculators themselves!), more considered decisions are made based more reliably on news over a period of time. Panic reactions are therefore reduced. More crucially, to be in positions to make moves on the market, the speculator needs to be in possession of money which is now costly to hold. (137)

With interest reduced, rents have come down and income distribution has shifted significantly in favour of labour. Workers are now able to save much more of their income and even after accounting for the lower interest rate, can accumulate greater savings. Like Proudhon, the solution to the income distribution problem lies in reforming the monetary system rather than in a State enforced redistribution of income or wealth (or a Marxian revolution). It is interesting to contrast this with Keynes' suggestion that a progressive income tax will increase the MPC and therefore output allowing for greater savings. (139)

With uninterrupted exchange, we no longer have the deflationary spiral that was the cause of unemployment. Money from sale immediately returns to the market in the form of demand - supply now does create its own demand. This is of course Say's Law and Gesell is identifying that the hoarding of money invalidated it. John Stuart Mill gives a similar explanation to this and it is interesting to note that he expressed some of the other related ideas on effective demand, demand for money being the supply of goods, on money as a medium of exchange and the problem of hoarding[6]. (144)

With money now under compulsion to circulate, self-fulfilling beliefs can no longer disrupt the exchange system. The sentiments of market participants now determine only their private affairs and cannot form a collective force through some coordinating and infectious process. (145)

Proudhon came close to this solution with the idea to put money and goods on a level playing field by raising goods up to the level of money.[7] However, goods that

[6]Mill (1909)

[7]Proudhon used the idea of constituted value that only money had as it was the medium of

deteriorate are not at the same level as gold which holds its value. It is simply contrary to nature to bring goods up to the value they would have if they did not deteriorate and it is not possible to contrive a convention that will do that. However, there is a solution that is possible. We can contrive a convention for money that brings it down to the level of goods so that it works in harmony with natural processes. (147)

We now come to the heart of Gesell's theory of interest. Since money can extract this 5% from the exchange process, real investment will only be undertaken if the return is higher than this. If an investment gives a greater return then money will flow to it until its return is brought down to that of money and investment therefore stops once the return comes down to basic interest. So houses will be built up to the point where rents give the required return. With shrinking money however, money does not extract basic interest and has to be lent. Money will now be lent at 4,3,2% as the alternative is to hold money that will lose value. It has to circulate and those wishing to store value will lend even when the return comes down to zero. We have then accumulated a stock of housing up to the point where the return is zero and the tenants pay only for upkeep. This is where we started in our imaginary society. Basic interest therefore puts a lower bound on the interest rate and when we reach it, investment comes to a halt causing unemployment with falling demand and falling prices driven by and driving falling incomes and greater hoarding. This is strikingly similar to Keynes chapter 17 and we will discuss this further in section 5. (151,153, 155)

With a stable velocity of money, the national issuing bank can control the price level with the quantity of money. The quantity theory holds and with this managed system there is no longer inflation or deflation - just stable prices. (156,157)

exchange. The social convention constitutes its value. He proposed creating an exchange bank where bills are discounted, constituting value for all goods making them equivalent to money.

3 Keynes

Let us take one market in our market economy, the market for wheat. There is a market where it is bought and sold where its price is determined. We can also consider the market for each good where it can be borrowed and lent and this market is cleared by the own rate of interest. We can borrow W_b units of wheat over some period of time and if the contract is to pay back W_p units of wheat at the end of the loan period then the wheat rate of interest is simply

$$\frac{W_p - W_b}{W_b}.$$

If we allow our imagination to be stretched a little, we can tell a story of productive wheat. Our society is made up of individuals who vary in their ability to use wheat to produce more wheat. There is no scarcity of land so the borrowed wheat is divided between seeds to sow and a fund to pay workers who simply consume it. The wheat loans market matches individuals who are more productive (entrepreneurs) but have no wheat capital with those who are not so productive (savers) but do have wheat capital which they don't wish to currently consume. The demand for wheat loans is downward sloping because of variable productivity of entrepreneurs. The supply of wheat loans is upward sloping but not because savers are enticed to consume less and save more wheat when the interest rate rises. It is because they are enticed to hold less and loan more. Now if we suppose by holding wheat over a period the rate of return is zero then it seems strange that any wheat will be held at all. Let's introduce some risk. There is a chance of default in which case the loan will not be repaid. Now we normally think of this as being covered by a risk premium which may vary between individuals based on attitudes towards risk. Keynes however delves much deeper to understand the source of this premium. Suppose we all agree on the probability of default but differ in the feeling we have in the meantime about having lent out this wheat that we might not get back. To compensate us for this feeling, we need to be able to look forward to a sufficiently high reward. The individual at the point of deciding to lend is weighing a period of this negative feeling against some expected

reward at the end of the period. If the reward is not sufficient, it will be better to spend the period with wheat in their possession. This feeling of safety gives rise to a risk premium that has to be paid to get the holder of wheat to part with it. There is a preference for holding that we can call *liquidity preference*.

It may help to reflect on how we confound a feeling towards risk and some psychological diminishing marginal utility in von Neumann-Morgenstern utility. If we observe a concave utility function we label the individual as risk averse and as having diminishing marginal utility. However, we are again thinking of an individual through time and we can have two individuals with the same VNM utility function with one who feels terrible about the risk but does not have diminishing marginal utility over *riskless* money while the other who feels no aversion to the risk but does have diminishing marginal utility. This was one of Allais' concerns in his early critique of von Neumann-Morgenstern utility.[8] With liquidity preference, we are disentangling the feeling through time from some expected payoff at the end of the period.

Now let us consider the consequences of liquidity preference. Let us suppose that the risk premium varies from 0 to 4%. We then have an upward sloping supply of loanable wheat funds. The market clearing interest rate, let's say 3%, then divides the surplus from employing wheat productively between the entrepreneur and the saver. However, there are some savers with a risk premium above 3% who end up *hoarding* wheat. This is wheat that in the hands of entrepreneurs would create greater employment and output. Imagine now that wheat deteriorates at 5% so even our savers with the highest liquidity preference find it optimal to lend and no wheat is hoarded whatsoever. The feeling of safety is neutralised by the deteriorating wheat, compelling all savers to lend rather than hoard.[9]

[8] Allais (1977)

[9] Relating this to Gesell's system, we should also consider that free money prevents individuals from hoarding money that they were optimally choosing to hold. What are the welfare implications of preventing the most liquid asset, which has the potential for giving the greatest comfort, from being a store of value? We can ask this question the other way with our wheat example. Suppose society has coordinated on using wheat as the medium of exchange, that it deteriorates at a rate of 5% and

We don't normally think in terms of such a market as in a monetary economy, if you want wheat but don't have the means to pay for it, you will borrow money and buy wheat. We can then think of our simple economy with many goods markets where goods and money are exchanged (spot and futures) and a loans market for money. The futures markets then cover the loaning and borrowing of all commodities. Now if you use the wheat productively, you will sell a greater quantity of wheat and use the money to repay the loan plus the money interest. Any additional money you make arises from two sources, the own return of wheat is greater than on money and the money price of wheat has increased. Now by arbitrage, this difference in returns between any asset and money, measured by the common standard of money, cannot persist and in equilibrium all returns will be the same. What then determines this equilibrium rate of return for the economy? The explanation that Keynes gives in the General Theory is liquidity preference.

We will now take a brief tour through the General Theory, up to the beginning of chapter 17, with a focus on the key features that relate to a comparison with Gesell, particularly the marginal efficiency of capital and liquidity preference.

3.1 The General Theory

The key factor determining savings is income. From the perspective of the individual, they will save a proportion of their income determined by their marginal propensity to consume, MPC, and by the fundamental psychological law this proportion will increase as their income increases. (86)

The marginal efficiency of capital, MEC, is another key concept. Let $Q_1, Q_2.....Q_n$

with this *free money* we have an efficient exchange system with full employment and the optimal allocation of resources. The proposal then is to impose a tax on the exchange system to subsidise those who hold onto wheat rather than investing it or spending it, so that the wheat that they hold maintains its value! Sure this is great for the hoarders but it clearly is not efficient. The externalities are large with the emerging deficient demand and unemployment. Another key point of a Gesellian system is that it removes the endogenous uncertainty created by the deflationary/inflationary cycles.

be the yields from an asset and P its supply price. Then the MEC, m, is given by solving the equation

$$P = \sum_{i=1}^{n} \frac{Q_i}{(1+m)^i}.$$

The great advantage of this is that we have a measure that can be directly compared to the money rate of interest to determine whether it is profitable to borrow money to invest in the asset.[10] The $Q_i's$ are subjective judgements based on market sentiments, confidence and expectations. The highest of these is the MEC of capital in general and the rate of investment will be driven to the point where this is equal to the rate of interest. So the interest rate is not determined by the supply and demand of loanable funds as in our wheat example above. The demand for loanable funds (rate of investment) is determined by the interest rate. (119,120,121)

There is an additional risk to account for when money is borrowed and lent to do with default. An entrepreneur risking her own capital will face the risk of failure but someone lending money will face an additional risk as the entrepreneur is now sharing the risk which gives rise to problems of moral hazard. Hence although the entrepreneur will also have some level of liquidity preference when risking her own capital, with lending, it will be greater because of asymmetric information. We can add that entrepreneurs are perhaps types who are more willing to take risks and have a lower liquidity preference. We therefore have a greater liquidity preference because those who own capital are not the same people as those who can put it to the best use. (127)

Keynes introduces the idea of liquidity preference as related to risks associated with changing values of investments. With money you have a certain immediate purchasing power but with any investment or loan, there is some variability on the money you can get back at any point in time. Keynes uses liquidity preference which gives us a demand to hold money and the fixed supply of money to determine the interest rate. This interest rate then determines the flow of investment. (146,147),

[10] In this sense it is similar to Fisher's rate of return over cost.

In our wheat discussion we associated liquidity preference with a risk premium. The fact that you face a lottery gives rise to a feeling towards the risk which has to be accounted for in addition to the expected payoff. Keynes adds that with uncertainty about the future rate of interest, there will be a variation of opinions on future movements and calculations will be based on these differing opinions. With his speculative motive, Keynes then focuses on this aspect of liquidity preference. However, the liquidity preference idea he has developed is more general than this and the introduction of uncertainty opens up a dimension of unpredictability. In his QJE article reflecting on the General Theory, he is clear that by uncertainty, he is considering cases where "there is no scientific basis on which to form any calculable probability whatever"[11]. Some kind of coordination of beliefs then plays an important role, giving rise to a *conventional* judgement. He then gives the following explanation of liquidity preference

> Because, partly on reasonable and partly on instinctive grounds, our desire to hold Money as a store of wealth is a barometer of the degree of our distrust of our own calculations and conventions concerning the future. Even tho this feeling about Money is itself conventional or instinctive, it operates, so to speak, at a deeper level of our motivation. It takes charge at the moments when the higher, more precarious conventions have weakened. The possession of actual money lulls our disquietude; and the premium which we require to make us part with money is the measure of the degree of our disquietude.[12]

In this more general form, it is not restricted to the speculative motive[13] which does become the focus in the General Theory. We have a downward sloping schedule

[11] Keynes (1937) page 214

[12] Keynes (1937) page 216

[13] The Elsburg paradox casts doubt on the use of subjective probabilities when there is uncertainty. We can think of an uncertainty premium that simply relates to a measure of the degree of uncertainty and an attitude towards it.

with just differing attitudes towards the uncertainty requiring different premiums. We will also see in the next section that for the central argument of chapter 17 a horizontal schedule is used. The crucial idea is that liquidity preference will be affected by the risk and uncertainty environment in which investment choices are made and the safe feeling of keeping money in possession gives rise to a risk and uncertainty premium. (148, 149)

Keynes brings his psychological factors together with money "to catch a glimpse of the way in which changes in the quantity of money work their way into the economic system". An increase in the quantity of money may not reduce the interest rate as liquidity preference may be increasing at a greater rate so that hoards are increasing. A reduction in the interest rate may not increase the rate of investment if faltering expectations are shifting the MEC. An increase in investment may not increase employment if the MPC is falling. The significance of all this is that the possibility of hoarding money adds a dimension to the economic system that can drive expectations. When spending on consumption goods is decreased this is not taken as a signal that more money will flow to the loans market but simply that it will be hoarded reducing employment. As with Gesell, hoarding is playing the central role in disrupting the market mechanism. (151, 162)

The reason that capital has a yield in excess of its original cost is not because it is productive. It is because it is scarce and it is kept scarce because the rate of interest on money. Keynes uses a thought experiment similar to the one with which we started section 2[14] where the MEC is zero but society uses money that will keep. He also assumes that the society is at full employment and disposed to save. Since the savings will be hoarded, entrepreneurs will not be able to sell all their output and the level of employment will have to sink. As we illustrated above, it would be enough to assume that we start with zero aggregate savings (so no time preference - Keynes is assuming negative time preference here) as the liquidity premium on money will make it more

[14]Which was actually based on Gesell's Robinson Crusoe parable, Gesell (1929), pages 165-169.

attractive than capital pushing its price down and causing decumulation. This will continue until the return on capital is the same as the liquidity premium on holding money. (188,191).

So we see that Keynes has identified the same problem as Gesell with a money rate of interest that keeps capital scarce. Keynes however has a different solution. To take investment beyond this point the State should intervene to ensure that capital is accumulated to the point where MEC is equal to zero. However, we see an immediate problem here. Leaving aside whether the State is to do this by social investment or monetary policy, Keynes' thought experiment demonstrates that it will need to continue to act when society gets there. (193)

We now come to the question of what determines the MEC, expressed in terms of money, on all assets and money. This will be determined by the asset that gives the highest return as if an asset is to be newly produced it would have to give a return at least equal to this. While all other assets will have diminishing $MECs$ as they are accumulated, the return on holding money, that arises from liquidity preference, doesn't fall and as Keynes puts it will *rule the roost*. As we saw with our wheat example the money return on loaning wheat will factor in changes in prices and the own rates for money and wheat may diverge even in arbitrage equilibrium. Keynes points out that this is similar to interest rate parity with currencies. (196)

4 The General Theory Chapter 17

We now wish to compare these two theories and will find it useful to give our own presentation of chapter 17 of the General Theory. In this chapter Keynes presents a simple but brilliant way of seeing how it is that money distorts the real economy and it allows us to see clearly the close relationship between the two theories. Lerner (1953) clarifies the distinction between the return from lending (the interest rate) and the return from holding money (the liquidity premium)[15] which will help us to

[15] See also Conard (1959) chapter 5.

see a difference between the way Keynes and Gesell are thinking about the same underlying problem. We will also find it useful to differentiate between using an asset productively and hoarding it. We can use our example above to consider different returns on wheat. First there is the rate on the loans market, r_w. Second there is a return from using it productively (MEC), $p_w = q_w - c_{wp} + l_{wp}$ where q_w is the yield, c_{wp} a cost associated with using it productively and l_{wp} the liquidity premium from having it in your possession and using it. Finally, you can hold the asset without using it $h_w = l_{wh} - c_{wh}$ where l_{wh} is the liquidity premium from holding and not using wheat and c_{wh} a cost of holding wheat. All of these are expressed in terms of wheat (so in proportion to the starting quantity of wheat). Keynes is introducing the idea here that assets other than money will also have some degree of liquidity and will differ from each other by degree. For our purposes we will take $c_{wp} = 0$, with any costs incorporated in q_w. How about l_{wp} and l_{wh}? There are perhaps some risks associated with using it productively and you are also committing to how it will be used so we can take this to be zero. If you hold it, then it really is safely in your possession and this is how we were thinking of liquidity in our discussion of the wheat market. However, although there is no risk on the quantity of wheat in your possession, the liquidity premium includes a different risk. What really matters to you is being able to trade it for other goods at any point in time. If the relative value fluctuates violently then you are facing a lottery that will not give rise to the tranquil feeling while you are holding it! Also, the relative value of wheat may be stable but the market for it is not so active and to get a reasonable price for it after deciding to exchange it for something else you may have to wait a while to exchange it for money before you can then purchase something else. As money is the universally accepted medium of exchange you don't have this additional step. So an additional source of risk/uncertainty is ease of exchange. The most liquid asset then is money but we see from this discussion, an important property for money to be liquid is also having a predictable exchange value. We can then consider all rates of return in terms of money, with the return of holding money simply equal to its liquidity

premium, l_{mh}. Using wheat productively then gives the wheat return in terms of money, $p_w = q_w + a_w$ where a_w factors in the change in the wheat price. Now if this is above the money rate of interest, r_m, our entrepreneur will take out a money loan, purchase wheat and use it productively. This will continue until $p_w = r_m$ with q_w falling because of diminishing marginal physical productivity and a_w falling because of upward pressure on present prices and downward pressure on future prices. A society that has neutral time preference will continue to save while returns are positive so we will have a stationary equilibrium with $r_m = 0$. We can also consider a stationary equilibrium with time preference, let's say at r_m^*. The problem that Keynes identifies is that the return on holding money, $h_m = l_{mh}$ may be above r_m^*. The economy will be constrained from reaching r_m^* with lower investment than is optimal simply because people are saving by hoarding money rather than using money productively.

Here we see the importance of the distinction between the return from loaning and from holding money. While r_m is above l_{mh} its value is determined independently of liquidity preference. Now Gesell relies heavily on the perspective where there is no hoarding. For example

> If you have no personal need of wares you can buy bills of exchange, promissory notes, mortgage-deeds and so forth from persons who are in need of wares and have no money (end of 112b)

We can think here of a loanable funds market. There is a supply of funds coming from savings. Savers are simply making saving/consumption decisions and they supply the funds through the loans market. There is a demand for funds coming from entrepreneurs who can use the funds more productively and this gives the MEC schedule. The money interest rate then is simply the equilibrium rate that clears the loanable funds market so long as there is no demand to hold wealth in the form of money. Gesell makes a clear distinction between basic interest and interest on loan money.[16] The interest rate on the this unconstrained loanable funds market then is

[16] Gesell (1929) chapter 5 (pages 180-193)

Wicksell's natural rate and we are assuming that the market rate is set at the natural rate with the economy in equilibrium. The one addition is that with the barrier of basic interest removed, capital will accumulate and this interest rate will also come down to r_m^* in the steady state so ultimately it is time preference determining what that natural rate is. The problem that Gesell identifies is that basic interest l_{mh} is greater than r_m^* bringing a premature halt to capital accumulation, (this generalises his theory from taking $r_m^* = 0$).

Keynes does not separate these two returns and he presents the chapter with $r_m = l_{mh}$ and MEC declining until it hits r_m which because of the properties of money will not fall below l_{mh}. This is true throughout the General Theory where we are always at a point where the marginal liquidity premium is equal to the rate of interest. Let $\bar{l}_{mh}$ be the highest liquidity premium. Then we are always at an interior point where $r_m = l_{mh} < \bar{l}_{mh}$ with some quantity of money being held as a store of wealth. However, as with Gesell above, we can imagine a non binding liquidity preference constraint, $r_m > \bar{l}_{mh}$, where no savings are held in the form of money.[17] If we start with $r_m > \bar{l}_{mh}$ then with capital accumulation the money interest rate will fall and it is only when the person with the highest liquidity premium chooses to hoard that by arbitrage the money rate of interest must be equal to the liquidity premium of the marginal hoarder. Then it is the marginal liquidity premium that rules the roost.

Although Keynes focuses on a fixed money stock as constraining speculative balances and therefore holding the interest rate fixed with asset prices coming down to accommodate the interest rate, he also concedes that there may still be an element of a self regulating system that allows the interest rate to adjust down

> If a decline in investment leads to a decline in output as a whole, this may result (for more reasons than one) in a reduction of the amount of money required for the active circulation, which will release a larger quan-

[17] Money then is simply used as a medium of exchange (transactions motive) and the quantity of money will determine the price level.

> tity of money for the inactive circulation, which will satisfy the propensity to hoard at a lower level of the rate of interest, which will raise the prices of capital-assets, which will increase the scale of investment, which will restore in some measure the level of output as a whole.

We have then moved out of a goods market and loans market equilibrium. Now with a fixed and declining liquidity schedule, to the extent that hoards can be built up by reductions in transactions demand, the interest rate will fall. The constraint is preventing it from falling as much as it would without liquidity preference and we are no longer at Wicksell's natural rate. Keynes responds to this by suggesting there are many natural rates, one for every level of employment.[18] We see here that he is thinking in terms of equilibrium in this system that is constrained be liquidity preference. With a horizontal liquidity schedule in chapter 17, we have a simplification that allows us to see the essence of the problem, a downward constraint on the rate of interest. The process that Gesell describes is more gradual than this representation and we will see in section 6 that he uses ideas more akin to liquidity preference in the General Theory to describe a gradual building up of hoards initially.

5 Keynes on Gesell

In chapter 23 of the General Theory, Keynes discusses Gesell at length. He starts the section

> It is convenient to mention at this point the strange, unduly neglected prophet Silvio Gesell (1862–1930), whose work contains flashes of deep insight and who only just failed to reach down to the essence of the matter.

He sees the similarities of Gesell's ideas with his own but comments on what he sees as limitations of Gesell's theory and his proposals for monetary reform. Having

[18] Keynes (1936) page 212

presented Gesell's theory in some detail, we are now in a position to evaluate Keynes' concerns. To begin with he finds a great defect in Gesell's theory.

> But, having given the reason why the money-rate of interest unlike most commodity rates of interest cannot be negative, he altogether overlooks the need of an explanation why the money-rate of interest is positive (317)

This is not true. As we have seen, Gesell's theory of basic interest explains why the money rate of interest is positive.

> and he fails to explain why the money-rate of interest is not governed (as the classical school maintains) by the standard set by the yield on productive capital. (GT 317)

This is also not true. He presents a similar theory to Keynes on how the money rate is prevented from falling below some lower bound.

> This is because the notion of liquidity preference had escaped him. (317)

It is true that Gesell's explanation is based on the exchange process but it also relies on a notion of liquidity preference. We will discuss this further below but for now will note that by developing the theory of liquidity preference, Keynes is strengthening Gesell's theory of basic interest rather than undermining it.

After explaining the stamp script idea,

> The cost of the stamps could, of course, be fixed at any appropriate figure. According to my theory it should be roughly equal to the excess of the money-rate of interest (apart from the stamps) over the marginal efficiency of capital corresponding to a rate of new investment compatible with full employment. (GT 318)

Following our presentation above and holding the liquidity schedule fixed, then it needs to be at least $\bar{l}_m - r^*_m$. Keynes' suggestion would just take us to the current margin for no hoarding but from this point the money rate will be constrained. Keynes is confounding the money rate and the return to holding money and he doesn't see clearly that the tax needs to take us past the constraint.

Then we come to the most damning passage consisting of two sentences. First

> But there are many difficulties which Gesell did not face. In particular, he was unaware that money was not unique in having a liquidity-premium attached to it, but differed only in degree from many other articles, deriving its importance from having a greater liquidity-premium than any other article. (GT 318)

This is not true. Consider for example

> Bills of exchange are not, indeed, as safe and convenient as money; in many cases they cannot replace money at all, as is apparent from the fact that they are frequently exchanged (discounted) at the bank for money, although they suffer thereby a deduction. This would not happen if the bill of exchange could always replace ready money. Nevertheless, bills of exchange, particularly in wholesale commerce and as a reserve, have often only small disadvantages in comparison with money. A slight rise in the rate of interest can in such cases cause a preference for bills of exchange.
>
> Money-interest affects the use of bills of exchange as an increase of railway fares affects the use of canals. The higher the rate of interest, the greater is the stimulus to avoid this tribute to money by the use, in commerce, of bills of exchange. For the same reason everything that artificially increases the natural disadvantages of bills of exchange (in comparison with money) must strengthen the position of money and increase the tribute it demands. If the rate of interest is lowered to 5% by the

> competition of bills of exchange, it will rise to 5.25 - 5.5 - 6%, if the use of bills of exchange is made difficult by alarming news or by a stamp-duty. The greater the insecurity of bills of exchange, the higher is the rate of interest demanded by money; the more heavily bills of exchange are burdened by stampduties, the higher are the claims of its competitor, that is, the higher the rate of interest. (*NEO* 173)

We see a clear understanding here not only of liquidity premiums but also the important role that uncertainty plays in their determination. Keynes then continues

> Thus if currency notes were to be deprived of their liquidity premium by the stamping system, a long series of substitutes would step into their shoes—bank-money, debts at call, foreign money, jewellery and the precious metals generally, and so forth. (*GT* 318)

Gesell in the passage above is describing how close substitutes put a limit on basic interest. Money can exploit a liquidity advantage by extracting a greater interest than substitutes. If the interest charge is greater than this then the substitutes will be used in place of money as a medium of exchange. If however the interest that money can extract is reduced by stamping then its advantage over bills of exchange will increase and they will not be used at all! The contradiction here is that Keynes is thinking in terms of money as a store of value whereas this advantage is in terms of money as a medium of exchange. If as a consequence of stamping, gold substitutes for money as a store of value as it is only slightly less liquid but doesn't have to be stamped then great, that was the whole point! Money will not be deprived of its liquidity premium if it continues to be the medium of exchange. The liquidity premium is neutralised by stamping, robbing money of its quality as a store of value. Gesell sees a contradiction between being a good medium of exchange and a good store of value. A good medium of exchange is an accounting mechanism for the system of exchange which requires the transmission of information about supplies and demands. This is

disrupted if it is also a good store of value as by hoarding it, we create an imbalance in the accounting mechanism. If we start with money as the exchange convention and then introduce a tax on holding it, money will circulate more and better stores of value will circulate less in a manner similar to Gresham's Law. Money will remain the exchange convention and gold will be hoarded.[19] Its velocity will be high but as it is not being hoarded and dishoarded, it will be stable making it easier to control the price level through monetary control. Then the most liquid asset in terms of invariability of value will be costly to hold but only up to the point where there is an indifference between holding and not holding. In terms of the other aspect of liquidity, having immediate access to purchasing power, money will no longer be held but will be more freely available maintaining this aspect of liquidity.

Keynes' critical evaluation of Gesell's theory and his proposed reforms do not stand up to close scrutiny. Perhaps underlying his evaluation is a doubt that a money convention can survive such a reform but this is not addressed by his arguments which are based on the premise that money will no longer be the medium of exchange. Gesell's theory of a fiat money convention is given in part 3 section 5[20] where appealing to Gresham's Law he discusses why State paper money drives out gold from circulation and it is not the backing of gold that gives the paper its value but a convention that arises through the authority of the State.

Referring back to chapter 17 of the General Theory, we can now address another question related to storing value if the medium of exchange is not a store of value. Is there another asset that will put a new lower bound on the rate of interest?

> If by money we mean the standard of value, it is clear that it is not necessarily the money-rate of interest which makes the trouble. We could not get out of our difficulties (as some have supposed) merely by decreeing that wheat or houses shall be the standard of value instead of gold or

[19] Further, as the medium of exchange it will predominate in our psychology in comparing values and as a purely accounting mechanism it will also be the unit of account.

[20] Gesell (1929), pages 78-83.

> sterling. For, it now appears that the same difficulties will ensue if there continues to exist any asset of which the own-rate of interest is reluctant to decline as output increases. It may be, for example, that gold will continue to fill this rôle in a country which has gone over to an inconvertible paper standard. (GT 201)

Let us suppose that it is holding gold that gives the greatest return, $h_g = l_{gh} - c_{gh}$. The price of gold will vary making $l_{gh} < l_{mh}$. Let us assume that c_{gh} is sufficiently small that $h_g > r^*_m$. We then have a new lower bound which is lower than it was before the tax on money but still higher than the steady state optimal rate of interest. Let's consider what happens when the return on capital falls to h_g. Crucially, it is not money that will be hoarded creating deficient demand and starting a deflationary process. The speculative problem has been passed to gold and this is a key to Gesell's proposal, to separate out the medium of exchange from speculation. Taking the supply of gold to be inelastic, the immediate consequence is an increase in the price of gold. However, there will be a price at which someone will sell gold and the purchasing power of the medium of exchange will be passed to them. They will not wish to hold this money but if they wish to speculate with it further they may purchase another asset. The circulation of money in existing assets will reduce its circulation in the exchange economy but so long as this circulation is sufficiently stable it will cause little difficulty for controlling the circulation in the exchange economy to manage the price level. We then just have a steady stream of money flowing between the exchange economy and existing assets. The question that Keynes is raising is does the return on gold put a cap on capital accumulation. We are supposing that h_g to be the lower bound. However, if there is a price at which someone is willing to sell it and supply the money to the loans market it must be because they are expecting a better return. If the issuing office is successful in maintaining the price level then there cannot be deficient demand in the exchange economy and a steady stream of money will be being used either to purchase consumption goods or through the loans market. How

then do we square this with the fixed return on gold? The answer is that l_{gh} will not remain fixed with speculation which will be taken to the point that makes the gold price sufficiently volatile for someone to choose to sell it and loan the money instead. We do now have a self correcting mechanism that breaks the barrier. The uncertainty is restricted to existing assets and does not infect the exchange economy. It is this aspect of Gesell's proposal that Keynes misses in not clearly distinguishing between a medium of exchange and store of value. Land is more problematic as it gives a yield in addition to any liquidity. Gesell recognised the problem that Keynes is raising here for land and saw the solution in auctioning the rights to land for a specified period giving a hybrid with private possession but collective property rights.

We have seen that Gesell and Keynes identify the same theoretical problem, a lower bound on the rate of interest which limits the accumulation of capital. In the General Theory, Keynes attempts to analyse the consequence of this with a mix of dynamic and static ideas. The central outcome of his analysis is the idea of an unemployment equilibrium. Gesell however identifies an endless process of deflationary and inflationary cycles with unemployment increasing during the deflationary phases. The unemployment arises because of a collapse in demand for both capital and consumer goods that mean in this phase there are resources that are not used. This however has to be followed by an inflationary phase with resources coming back into use and new capital accumulation. A stable stationary equilibrium is possible but only if money is neutral. Although Keynes didn't see rigid wages as the cause of unemployment, he wasn't able *to escape* from using a static equilibrium framework to understand the consequences of diminishing effective demand. For both the constraint on the economic system is the inability of the interest rate to go below some lower bound with hoarding of money the key destabilising factor. Gesell has a solution that simply removes this constraint and we have seen that Keynes has not demonstrated a defect in this solution.

We will now present a section of The Natural Economic Order where Gesell considers an alternative to his reform. This has close parallels with the system we have

today and we will use it to discuss the zero lower bound constraint in section 7 and to evaluate Keynes' proposals in section 8. We will also see in it the contradictions discussed above between the medium of exchange and store of value roles.

6 Reform of the note issue[21]

Gesell considers a proposal to introduce a State paper money and simply to control its supply to stabilise prices. So we are to think of a fiat currency that is controlled by the State. It will not be enough to control its supply as the problems identified relate to its circulation, that is the problem arises from velocity of circulation rather than the quantity of money. The property of money that will impede its circulation is that it is a store of value. It can then only circulate at a cost and this contradiction makes it impossible for money to be an effective medium of exchange if it is also a store of value. He proposes therefore to separate the medium of exchange from store of value. (111)

As capital becomes more abundant and the interest rate falls, some savers will hoard money rather than lend it at the market rate and there will be downward pressure on prices. The proposal is to issue new money to fill the gap. The government will then lend at the market rate so that capital accumulation can continue. (112)

To begin with, this reform will work. The interest rate on this newly issued money will fall in line with the return on capital and will prevent any crisis as investments continue as if no money is hoarded. We then see an indication of thinking in terms of a liquidity schedule,

> Many still find it advantageous to lend their savings at the lower rate of interest; but others, especially the small savers who, in any case, obtain but a trivial amount of interest, will return to tie old custom of keeping their savings at home and renouncing interest - even if the fall in the rate

[21] Gesell (1929) book 3 section 13, pages 110-115.

of interest is only from 5% to 4% or 3%.

So initially, it is those with a higher liquidity premium that will hoard. Gesell does not give an explanation for this or at least not one as comprehensive as Keynes'. As the interest rate falls further, more and more savers hoard and larger and larger sums will have to be issued to maintain investment. He then says,

> Some persons will also consider their money safer in their own possession than under the control of strangers.

This is the clearest indication that Gesell is in fact thinking in terms of a liquidity premium. (113)

The issuing office will take on further responsibilities with the private sector no longer willing to offer mortgages and bills of exchange that had been profitable and will therefore be replacing these other forms of circulating credit/debt with new issue. With interest rates so low, the amounts being hoarded will just continue to rise. Now what happens if the latent demand in all these hoards returns to the market. The wares being produced are only sufficient for the circulating money and any additional demand will increase prices. The first sign of increased prices will attract more money from the hoards with opportunities for profit and the safety of wares from the rapidly depreciating currency. The wares however are scarce so for most the consequence is simply to lose their savings. (114a)

The idea of the reform is to prevent prices from rising by withdrawing money just as prices were prevented from falling by issuing money. However, withdrawing money is not so easy as issuing money. The problem is there is no correspondence between the built up latent demand for wares and the supply of wares. Gesell imagines a situation where the government had simply purchased wares with the new issue all this time which they would now be in a position to sell and then there would be no discrepancy between supply and demand (but of course they could not have done this as wares don't keep). However, all they have to sell are debts that earn very low

interest as capital accumulation has been continuing and loans have been issued at decreasing interest rates. (114b)

Gesell now gets to the difference in the property we require for a medium of exchange and store of value. Using the example of tea and gold, both will serve equally well as a medium of exchange if they are universally accepted in payment but to store value over a period of time longer than tea will keep, gold is infinitely more valuable! The point is, as a store of value you will value gold more than what you can buy with it as a medium of exchange. It cannot therefore serve both purposes well. (115a)

The large hoards have destabilised the system leaving it open to speculation. Any sign of rising prices will bring speculators to the scene much faster than the State can act to withdraw money. Merchants who form expectations that prices will rise have large hoards that they have access to by offering interest. This brings the demand back to the market fulfilling the expectations. Once this process starts, there is no stopping it until all the hoards are brought into circulation. (115b)

7 On the zero lower bound constraint

We can see clearly from the previous section that the Natural Economic Order is of great relevance to the present financial circumstances that are plaguing many economies around the world. However, this is not for the reasons that are being discussed in the literature.[22] The focus has been on how negative interest rates to break the zero lower bound constraint relate to Gesell's idea for stamping money and the discussion has been on the mechanisms by which negative rates can be implemented. As we saw in the last section, Gesell's proposals for a fiat currency required a shrinking currency to avoid ending up in the situation we are in! We have been following a process that relates closely to the one Gesell described for a fiat currency that doesn't shrink. The only aspect that is different from the description above is

[22] See Ilgmann and Menner (2011) for a review.

that the collapse of the monetary system will come when interest rates are very low. What Gesell did not consider was the possibility of going all the way to zero! Japan in fact has been at zero since the early 90s without a collapse but they have instead remained *trapped*. Finding a way to continue monetary expansion will only continue the process of building up the gap between wares and the latent demand for them. With uncertainty and zero interest rates, there is for now an insatiable demand for money which is being created by expansionary monetary policy.

There is something unique about the present day in the proportion of wealth that is being held in the form of claims. It will be helpful for us to use a distinction that Soddy (1933) makes between wealth and virtual wealth. Wealth is the product of harnessing the Sun's energy to do useful work and is subject to physical laws. Virtual wealth however is a claim to this wealth that is supported by convention and law. We can think of a fiat currency as a debt that the community has to itself. Those who hold the currency have a claim on the wealth that the community holds. They are choosing to hold it as a claim rather than as the physical wealth itself. We can then add to this private debt that is created through the banking system extending credit. The banks are creating claims against the community's wealth but this is backed by private debt.

Now if we apply this to Gesell's description above, when the government intervenes to prevent prices falling, they are issuing fiat money that is continually being hoarded. It is not circulating through the exchange system so the gap in demand is simply being filled by new issue. This is just increasing the claims against the wealth of the community and it is being willingly held because of the low interest rate. On top of this there is all the private debt that is in the system and as interest rates fall the private credit contracts and so all this is simply being converted to public credit - the endogenously created money is being converted to fiat money. For Gesell the wealth is in the wares that are produced and so we have increasing claims on the wares and while there is faith in the currency, this virtual wealth can go on expanding and interest rates falling. Taking them past zero is just allowing the ratio between virtual

wealth and wealth[23] to grow further before the inevitable collapse.

Although Gesell focusses on a fiat currency, he does address endogenously created money and sees that this only magnifies the problem - the expansion of endogenous money will eventually have to be converted to fiat money to prevent prices from falling. The process that Gesell describes at least has the correct investment taking place. The new issue clears the loanable funds market at the interest rate that would arise if money was not hoarded and this is achieved by the issuing office maintaining a steady price level. However, we have also seen Gesell describe that during a boom phase, credit creation adds fuel to the inflationary process and we can think of this as the banking system offering a money rate of interest below the natural rate giving rise to a Wicksellian cumumlative process with too much investment through forced savings.[24] The source of the problem is the contradiction between money as a medium of exchange and a store of value and creating more money when money is being hoarded to solve this problem is not a solution at all. History has taught us that it will always end the same way.

> The peasant again uses paper-money as he used the French assignats - to paper his cowshed. (NEO 114)

8 On Keynes' reforms

Beyond contriving and managing a medium of exchange that isn't a store of value, the key to a stable economic system, Gesell sees very little role for the State,

> The conditions upon which money can be lent are the private affair of the savers, with which the State has no concern. The State, to which

[23] We can perhaps call this the credulity ratio.

[24] We can add a word from Hayek, here who focussed on such a process in his debate with Keynes. In Prices and Production (Hayek (1931)), he demonstrates that the problem isn't just too much investment but at an interest rate below the natural rate we get the *wrong* investment.

> money is purely a medium of exchange, says to the saver: You have sold more wares than you have bought and you are consequently in possession of a surplus of money. This surplus must in all circumstances be brought back to the market and exchanged for wares. (*NEO* 112)

We see here that the loan rate of interest is of no concern to the State, this will be set by markets and will decline as capital is accumulated. In fact, using its position to manipulate interest rates will only distort the system

> The State misunderstood the function of money when it advanced the employers the money refused them by the savers. The State misused its power; and money wreaks a sharp and sudden vengeance for every misuse to which the State subjects it. (*NEO* 114)

Dillard (1940) explores the similarities between Gesell's and Keynes' political and social philosophy, particularly on individualism. However, when it comes to a solution to the same problem, a constraint on the rate of interest, Keynes sees a much larger role for the State

> Let us assume, further, that State action enters in as a balancing factor to provide that the growth of capital equipment shall be such as to approach saturation point at a rate which does not put a disproportionate burden on the standard of life of the present generation.
>
> On such assumptions I should guess that a properly run community equipped with modern technical resources, of which the population is not increasing rapidly, ought to be able to bring down the marginal efficiency of capital in equilibrium approximately to zero within a single generation (*GT* 193)

Keynes, with the inevitable unemployment equilibrium, is seeing the problem more as a failure of the market mechanism and sees State intervention as the only long term solution. It is telling the way he describes the Natural Economic Order

> The purpose of the book as a whole may be described as the establishment of an anti-Marxian socialism, a reaction against laissez-faire built on theoretical foundations totally unlike those of Marx in being based on a repudiation instead of on an acceptance of the classical hypotheses, and on an unfettering of competition instead of its abolition. I believe that the future will learn more from the spirit of Gesell than from that of Marx. (*GT* 316)

A reaction against laissez-faire is not accurate at all. We have seen that for Gesell the only role for the State is to manage the currency and the very title of his book indicates the general laissez-faire philosophy, particularly on free markets. We do see Keynes associating with the unfettering of competition but it is Keynes himself who is reacting against laissez-faire.

However, this investment is coming with the aid of newly created money which is not sustainable in the long run. Following Gesell's warning, we are building up claims against wares which can not be satisfied and when the illusion is broken there will be a reckoning where large numbers realise that they are not nearly as wealthy as they believed or as Gesell put it

> A reform of this kind would be short-lived and would bring the possibility of the greatest fraud ever practised upon mankind. (*NEO* 115)

We can all perhaps agree that if Gesell is right about the process, he is wrong about the time frame, the present process is approaching 50 years! The substantial point is that if the source of the problem is a constraint on the market system rather than anything inherently wrong with the market mechanism then the solution is to remove the constraint. In addition to the monetary flaw in this kind of intervention, it also comes with moving towards collective ownership, contrary to Keynes' ideals on individualism. As Dillard[25] puts it

[25] Dillard (1940) page 272

> In the absence of some additional measure to reduce the preference for liquidity, private wealth holders will shift their holdings from industrial securities to money assets on an ever increasing scale. In this case the socialisation of investment would mean little else than a gradual transition to what is assumed to be unnecessary, namely, the state ownership of the means of production.

We will allow Keynes[26] a response

> Naturally I am interested not only in the diagnosis, but also in the cure; and many pages of my book are devoted to the latter. But I consider that my suggestions for a cure, which, avowedly, are not worked out completely, are on a different plane from the diagnosis. They are not meant to be definitive; they are subject to all sorts of special assumptions and are necessarily related to the particular conditions of the time. But my main reasons for departing from the traditional theory go much deeper than this. They are of a highly general character and are meant to be definitive.

But we will give Gesell[27] the last word on this

> The choice lies between private control and State control of economic life; there is no third possibility. Those who refuse to make this choice may, to inspire confidence, invent for the order they propose attractive names such as co-operation or guild-socialism, or nationalisation, but the fact cannot be disguised that all these amount to the same thing, the same abominable rule of officials, the death of personal freedom, personal responsibility and independence.

[26] Keynes (1937) page 221

[27] Gesell (1929) page 4

9 Liquidity Preference or Basic Interest?

We have seen that the two concepts are closely related. Keynes considers the determinants to hold wealth as money once the decision to save has been made. Gesell does not make this distinction and is more generally considering holding money rather than using it for transactions. Investing it simply passes the money to someone else to use. There is a sense in which Gesell is getting at the root with basic interest as the liquidity premium arises through its value in the exchange process. However, the great contribution of the General Theory is the way in which uncertainty is entwined into the whole theory. It is not just the more explicit treatment of liquidity preference that adds to Gesell's theory but a deeper understanding of the complexities of the economic process. Once the loan rate comes down to basic interest there is a reduction in effective demand due to hoarding, starting a deflationary process. In the hands of Keynes, the increased uncertainty and faltering expectations give strength to his psychological factors with the liquidity schedule shifting up and the MEC schedule shifting down and all this feeding back into the level of uncertainty and formation of expectations.[28]

Basic interest then includes all this in a less developed way. It however adds something. It may be helpful to imagine an exchange system without money, based simply on a convention of credits and debits that are used to allow us to exchange our goods and services. If we start our economy with everyone in a neutral position and run it we see credits arising where individuals have sold more than they have bought and likewise debits where they have bought more than they have sold. The totals will of course sum to zero. The purpose of these credits and debits is to smooth over exchange and if the process can ensure that each individual averages zero over a period of time then there can be no problem of deficient demand - Say's law applies.

[28] Add to this the conventional nature of beliefs and we appreciate the intractability of the economic system. Keynes catches a glimpse of this in the General Theory but then reverts to the familiar tools of equilibrium to understand it.

The problem arises if there is no such mechanism as the credits are an attractive store of value. If someone's credits are allowed to build up then this is imposing debits on everyone else. The manifestation of this is that some are simply not able to sell to clear their debits because of deficient demand - Say's law fails. Money then can be thought of as exactly such a system with everyone starting off at some level of credit. Once we have a money convention, money becomes the most liquid asset because of its use in the exchange process and this makes it an attractive store of wealth. What we see from this example is that it is not hoarding that is a problem for exchange in the market system but changes in hoards and it is this that breaks Say's law. What Gesell is able to see so clearly with the basic interest concept is the contradiction between being a good medium of exchange which preserves Say's law and a good store of value which invalidates it. The tax on money is then a way of implementing the averaging out of credits and debits for each individual over a period of time. Basic interest arises if this is not done through exploitation of the value of money in the exchange process. At the individual level Gesell sees this in the opportunism in bilateral trading and at a higher level in a tacit financial monopoly on the means of exchange.

It is the stabilisation of the velocity of circulation that allows for effective control of the price level. Gesell recognises that this is made more difficult by bank credit through, as he sees it, an increased velocity of fiat money but doesn't address this with the introduction of free money. For control of the price level to be complete, the privilege of creating the community's medium of exchange must belong exclusively to the State.[29] Banks then act as intermediaries taking in savings and loaning them out. If we imagine a competitive industry, we can see them as the loanable funds market, delivering the *natural* rate of interest and also spreading risk for savers. Those not wishing to consume now will then be able to lend at the natural rate and we have the coordination of investment and savings through the interest rate. A problem

[29] Although Gesell suggests that free money will drive out substitutes.

with an elastic supply of endogenous money through bank credit is that it is subject to swings in sentiments. The credit created when there is optimism is not clearing a loanable funds market but rather taking command of the community's resources through forced savings. This is the basis of a misallocation that becomes apparent later in Hayek (1931). The problem is that the price mechanism is not being used to coordinate economic activity. Also, with savings determining investment, individuals will have to make longer term decisions about how long they are willing to commit savings, allowing for a greater transmission of information on savers' preferences and the security of longer term loans for firms. This is perhaps putting a lot of faith in the rationality and optimality of individual decisions and we may contrast it with the kind of investment that inflationary bank credit makes possible in Schumpeter (1934). We will in fact use this book to end with a critical comment on perhaps the most extreme assumption that both Gesell and Keynes are making in their theory of interest - a future with no scarcity of capital. The crucial assumption they make is that we don't discount the future.[30] Schumpeter also dismisses time preference as a determinant of the interest rate but has a more dynamic, ever changing picture of the economic system. Let's keep faith with the price mechanism and imagine we have set up a Gesellian system where banks simply act as intermediaries. Grafting a Schumpeterian system onto this, in periods of rapid innovation the demand for loans will rise, raising the interest rate while entrepreneurs are able to make profits. Even in periods of relative stasis, there will be limits to competition with profits driving a positive but possibly small rate of interest. Building on Keynes' picture of a complex system, preferences are in a constant state of flux, technologies are ever changing and relative values can not be understood in an equilibrium framework. To the extent that opportunities for profit persist, the rentier will survive, perhaps on life support.[31]

[30] Their theories however are more general and as we did in section 4 we can imagine a steady state with a positive interest rate determined by time preference which is below basic interest/liquidity premium. All the arguments of a constrained system then follow.

[31] I would like to thank Donald Rutherford for instilling in my heart a little sympathy for the

References

[1] Allais, M. (1977) The so called Allais' Paradox and Rational Decisions under Uncertainty, in Allais and Hagen, 1979, Expected Utility Hypotheses and the Allais Paradox., pp. 437-699

[2] Darity, W. (1995). Keynes' Political Philosophy: The Gesell Connection. Eastern Economic Journal, 21(1), pp. 27–41.

[3] Dillard, D. D. (1940). Proudhon, Gesell and Keynes: An investigation of some 'Anti-Marxian socialist' antecedents of Keynes' general theory of employment, interest and money. St. Georgen, Hackbarth (Diss.–Univ. of California). Reproduced (1997) Roemheld, L. (ed.).

[4] Dillard, D. D. (1942a). Silvio Gesell's Monetary Theory of Social Reform. American Economic Review, 32(2), 348–352.

[5] Dillard, D. D. (1942b). Keynes and Proudhon. Journal of Economic History, 2(1), 63–76.

[6] Dillard, D. D. (1946). The Pragmatic Basis of Keynes's Political Economy, The Journal of Economic History, 6(2), 121-152.

[7] Dillard, D. D. (1948). The Economics of John Maynard Keynes. The Theory of a Monetary Economy, London, Crosby Lockwood.

[8] Gesell, S. (1929). The Natural Economic Order, Silvio Gesell, Translated by Philip Pye, Peter Owen Ltd (1958). https://www.naturalmoney.org/NaturalEconomicOrder.pdf

[9] Hayek, F. (1931). Prices and Production. George Routledge & Sons, LTD., London

plight of the poor rentier under a Gesellian system.

[10] Ilgmann, C (2015). Silvio Gesell: "A strange, unduly neglected" monetary theorist. Journal of Post Keynesian Economics 38(4)

[11] Ilgmann,C and Menner, M (2011). Negative Nominal Interest Rates: History and Current Proposals. International Economics and Economic Policy 8(4):383-405

[12] Keynes, J. M. (1936). The General Theory of Employment, Interest and Money, Cham: Springer International Publishing (2018)

[13] Keynes J.M. (1937) The General Theory of Employment. Q J Econ 51(2):209–223

[14] Onken, W. (2000). The Political Economy of Silvio Gesell: A Century of Activism. American Journal of Economics and Sociology, 59(4), 609–622.

[15] Preparata, G. G. (2002). On the art of innuendo: J. M. Keynes's Plagiarism of Silvio Gesell's Monetary Economics, Research in Political Economy, 20, 217-253.

[16] Preparata, G.G., and Elliot, J.E. "Free-Economics: The Visions of Reformer Silvio Gesell." International Journal of Social Economics, 2004, 31 (10), 923–954.

[17] Russell, B (1917) Mysticism and logic and other essays London : George Allen & Unwin

[18] Joseph A. Schumpeter, J. (1934) The Theory of Economic Development, Cambridge: Harvard University Press

[19] Soddy, Frederick (1933) Wealth, Virtual Wealth, and Debt. Britons Publishing Company

10 Supplementary material

10.1 The Natural Economic Order

(59) The failure is not due to the difficulty of the subject, but to the fact that capital-interest (interest on loans as well as interest on real capital) is the child or by-product of our traditional form of money and can therefore be scientifically explained only with the help of a theory of money. Money and interest, to superficial observers inseparable friends, have also a close inner connection, a connection in theory. **A theory of interest can only be deduced from a theory of money.**

But theorists upon interest have always, for the reasons given above, neglected the study of money. **Marx, for example, can never have given the theory of money five minutes attention - witness his three large volumes upon interest (capital). Proudhon underrated money less and came nearest to solving the problem of interest.**

(67) *The Fact:* Paper-money, such is the contention, is impossible, since money can exchange only its own "intrinsic value", its "value as a substance", and paper-money has no "value as a substance". **In striking contradiction to this contention stands the plain fact that the enormous present-day exchange of products is effected throughout the world almost exclusively with paper-money or with banknotes only partly covered by gold.** One can travel around the world in any degree of latitude and spend or receive nothing but paper-money. Germany, England and Turkey are, as far as I know, the only civilised countries today with a preponderatingly metallic circulation; elsewhere gold coins are met with only exceptionally.

(69) Relying on these facts, therefore, we deny that it is the promise

of conversion that gives life to banknotes and ordinary papermoney. We assert that forces must exist elsewhere in commerce which play the part at present erroneously assigned to the metal reserve (so-called covering), or to the promise of conversion. **These forces, hidden for the moment, which turn a promise to pay (banknote) into capital, and force the creditor to pay interest to the debtor, are, we maintain, strong enough by themselves to assure the functioning of money in the market.**

(70) But those of us who are unable to grasp this ghostly property of commodities called value, and who therefore regard the exchange of commodities as an action, and the commodities and state of the market as accessories of this action, will be able to discover no other motive for such action **than the desire common to all owners of commodities, to give as little as possible and to receive as much as possible**. In every exchange, from wage-negotiations to dealings in stocks, we observe that both parties seek information about the state of the market. Sellers try to find out whether buyers urgently require their commodities, and they are especially anxious to conceal the fact that they are compelled to sell immediately. In short, we soon convince ourselves that the principles of usury are the principles of commerce in general, that the difference between commerce and usury is a difference in degree, not a difference in kind. The merchant, the workman, the stock-broker have the same aim, namely to exploit the state of the market, that is, the public at large.

(73) Because the division of labour has great advantages.

Because the division of labour creates wares, that is, commodities useful to their producers only as objects of exchange.

Because at a certain stage in the development of the division of labour, the exchange of wares becomes impossible without a medium of exchange.

Because a medium of exchange, from its very nature, is only possible

as State money, or at least social money.

Because the State, according to our hypothesis, has provided no other money than paper-money.

Because all possessors of wares are faced with the alternative either of accepting the paper-money provided by the State or else of abandoning the division of labour. And finally:

Because the holders of this paper-money do not surrender it for nothing when they see that the producers are in difficulties and must offer their wares for this paper.

(91) Evidently wherever there is need of a medium of exchange; wherever the division of labour throws upon the market wares which, for their exchange, require a medium of exchange, that is, money.

And who demands money ? Evidently the farmer bringing his produce to market, the merchant selling his wares across the counter, the workman offering his services and asking money for the product of his labour. Where the supply of wares is largest, the demand for the medium of exchange is largest; where the supply of wares increases, the demand for money, for the medium of exchange, increases. If there are no wares to be exchanged, the demand for money disappears. Primitive production and barter mean absence of demand for money.

We must therefore distinguish sharply between the merchant offering a farmer calico in his shop and the same merchant an hour later visiting the bank to discount a bill. With his calico in his shop the merchant creates demand for the medium of exchange; with the bill of exchange at his bank he creates no demand for money, since a bill of exchange is not a ware. We speak here of rate of interest. This is simply desire for money, not demand.

....We thus separate the demand for money from human desires. from the state of the market, from business projects, dealings, speculations and

so forth; we rescue it from the enveloping fog of "value" and enthrone it upon the mountain of wares which the division of labour throws upon the market - visible to all, palpable, measurable.

We distinguish this demand for money from desire for money. **Upon another mountain, not of wares but of bills of exchange, deeds of mortgage, bonds, government securities, insurance-policies and so forth we place the inscription: "Desire for money". Upon the first mountain we write "Prices" and upon the second "Rates of interest".** Anyone who, in the course of the following inquiry, thinks of desire for money when I write demand for money had better lay aside this book. It was not written for him.

(100) **One of these apparently trivial facts, which has, up to the present, been totally overlooked, is that the nature of our traditional money allows demand (the offer of money) to be delayed from one day, one week, one month, one year to another. Whereas supply (the offer of wares) cannot be postponed a day without causing its possessor losses of every kind.** The French war-indemnity of 180 million marks of gold stored in the fortress of Spandau has not entered the market once in 40 years, yet any expense caused the German government by this so-called war-chest has come from without, not from within the Julius tower. The amount and quality of the gold has remained the same. Not a pfennig has been lost through loss of material. The soldier on guard protects the gold, not from moth and rust, but from thieves. He knows that as long as the locks remain intact no harm can come to the treasure piled within.

In contrast to this, a real war-chest, the so-called "wheat of the Swiss Confederation" stored at Berne, suffers annually a loss of 10% of its material, apart from the cost of guarding and storage. (Without counting interest, which the owners of the Spandau treasure also lose).

The wares which compose supply decay, lose weight and quality, decrease continually in price in comparison with fresh wares.

Rust, damp, decay, heat, cold, breakage, mice, moths, flies, spiders, dust, wind, lightning, hail and earthquakes, epidemics, accidents, floods and thieves wage war continuously and successfully upon the quantity and quality of wares. Few wares fail to exhibit the results of this warfare a few days or months after their production. And it is precisely the most essential wares, food and clothing, that are least able to withstand these enemies.

(101) **The only way in which an owner of wares can protect himself against such losses is to sell them. He is compelled by the nature of his property to offer it for sale.** If he resists this compulsion he is punished, and the punishment is carried out by his property, by the wares in his possession.

It must also be remembered that new wares are continually flowing into the market. A cow must be milked daily, a man without possessions is daily compelled by hunger to work. The offer of wares must therefore become larger and more urgent if sale is delayed. As a rule the most favourable time for the sale of a product is the moment it leaves the factory. The longer sale is delayed, the less favourable the market conditions.

(103) A and B, separated by space and time, wish to exchange their wares, flour and pig-iron, and for this purpose need the money in C's possession. C can at once effect the exchange with his money, or he can delay, hinder or forbid the exchange; for his money gives him the freedom of choosing the time at which it shall take place. **Is it not obvious that C will demand payment for this power, and that A and B must grant it in the form of a tribute on their flour and pig-iron.** If they refuse this tribute to money, money withdraws from the market. A and B must then retire without completing the sale and undertake the heavy

cost of returning home with their unsold products. They will then suffer equally as producers and consumers; as producers because their wares deteriorate, and as consumers because they must do without the goods to obtain which they brought their products to market. If instead of gold, C owned any other product, tea, powder, salt, cattle or Free-Money, the characteristics of these media of exchange would deprive him of the power of postponing his demand; he would no longer be able to levy a tribute on other products.

Usually, therefore, that is, commercially, the present form of money acts as intermediary for the exchange of wares only on condition that it receives a tribute. If the market is a road for the exchange of wares, money is a toll-gate built across the road and opened only upon payment of the toll. The toll, profit, tribute. interest or whatever we choose to call it, is the condition upon which wares are exchanged. No tribute, no exchange.

(104) **An actual fall of prices is not necessary to cause the flight of money from the market. If there is a general opinion that prices will fall (no matter whether the opinion is true or false), demand hesitates, less money is offered, and for this reason what was expected or feared becomes an actual fact.**

Is not this sentence a revelation ? Does it not give us a clearer explanation of the nature of commercial crises than is contained in any of the many-volumed explanations of the matter ? From this sentence we learn why a Black Friday, a crisis scattering death and destruction, often comes like a bolt from the blue.

Demand withdraws, conceals itself, because it is insufficient to effect the exchange of wares at the present price-level ! Supply exceeds demand, therefore demand must disappear entirely. A merchant writes an order for cotton. He hears that the production of cotton has increased and consigns

the order to his waste-paper basket! Is that not comic?

But production continues to throw new masses of wares upon the market, so the stock of wares increases if sales are interrupted - just as the water-level of a river rises when the sluices are closed.

Supply therefore becomes larger and more urgent because demand hesitates, and demand hesitates simply because supply is too large in proportion to demand.

Here again there is no mistake, no misprint. The phenomenon of a commercial crisis, so ridiculous to the onlooker, must have a ridiculous cause. **Demand becomes smaller because it is already too small, and supply becomes larger because it is already too large.**

(105) But the comedy develops into a tragedy. Demand and supply determine price; that is, the ratio in which money and wares are exchanged. The more wares are offered for exchange, the greater is the demand for money. Wares reaching the consumer by way of credit or barter are lost to the demand for money. **Prices, therefore, rise when credit sales increase, since the quantity of wares offered in exchange for money decreases by the amount of these credit sales, and since demand and supply - the ratio in which money and wares are exchanged - determine price.**

Conversely, prices must fall when credit sales decrease, since reaching the buyer through these side channels again create and for money.

The offer of wares for money therefore increases in proportion to the decrease of credit sales.

(112a) The simple reform of the note-issue, here described as inadequate, proposes to empower the State to issue or withdraw paper-money in quantities to be determined by the general level of prices. The State is to estimate the demand for money solely by the average price of the wares.

The quantity of money in circulation is to be increased when prices fall, and to be decreased when prices rise. Money is not to be redeemable in gold or any other particular product; for redemption the holder of money is directed to the market. But in every other respect this paper-money is to be indistinguishable from ordinary paper-money; it may be used or misused for saving, or as a reserve for speculation. Demand is left in possession of all the privileges it possesses over supply. Demand is to remain what it is today, an action willed by the holder of money, and therefore the plaything of money-magnates.

Nevertheless the reform professes to eliminate the recurring periods of over-production and unemployment, to make economic crises impossible and to suppress interest on capital.

(112b) For money exists to facilitate exchange, and here capitalists, speculators and money-savers are permitted to use money for purposes foreign to the exchange of wares. Money was made to help the producer of wares to exchange his products for the products of other producers. **Money is a medium of exchange and nothing more.** Money makes exchange possible, and exchange is complete only when two producers have exchanged their products. When a producer has sold his product for money, exchange is not yet complete; someone is in the market waiting for him. The purpose of money demands that the sale of a product for money shall immediately be followed by the purchase of a product with money, to complete the exchange. Anyone hesitating with his purchase leaves exchange incomplete and interrupts a sale for another producer. This is a misuse of money. Without purchase there can be no sale, therefore, if money is to fulfil its purpose, purchase must follow step for step on the heels of sale.

We are told that the man who has sold his products for money and does not set free his money by further purchases of products is ready to

lend his money if offered interest. But this condition cannot in justice be permitted. **The man must lend his money unconditionally, or be compelled to purchase wares, or to re-purchase his own products. No private individual can be allowed to make conditions of any kind about the circulation of money. Those who have money have the right of immediately purchasing wares, and no other right.** A right to interest is incompatible with the conception of money, for this right would resemble a tax upon the exchange of wares for the benefit of private individuals and sanctioned by the power of the State. The right to interest is the right to interrupt the exchange of wares by holding back money, to embarrass the owners of wares waiting for this money, and to exploit their embarrassment for the purpose of extorting interest. The conditions upon which money can be lent are the private affair of the savers, with which the State has no concern. **The State, to which money is purely a medium of exchange, says to the saver: You have sold more wares than you have bought and you are consequently in possession of a surplus of money. This surplus must in all circumstances be brought back to the market and exchanged for wares.** Money is not a feather-bed. it is a moment's halting place by the road-side. **If you have no personal need of wares you can buy bills of exchange, promissory notes, mortgage-deeds and so forth from persons who are in need of wares and have no money. The conditions upon which you can buy bills of exchange are your affair**; only on one point the State insists upon absolute obedience; that your money shall immediately be brought back to the market.

(123) The holder must keep the notes at their face value by attaching to them the currency stamps mentioned above. A ten-cent stamp, for example, must be attached every Wednesday to the $100 note illustrated (Figure 4), which is shown as it will appear during the week August 4th -

11th, 31 ten-cent stamps ($3.10) having been attached to it, on the dated spaces provided for the purpose, by its various holders, one stamp for each week since the beginning of the year. **In the course of the year 52 ten-cent stamps must be attached to the $100 note, or, in other words, it depreciates 5.2% annually at the expense of its holders.**

(123) Everyone of course tries to avoid the expense of stamping the notes by passing them on - by purchasing something, by paying debts, by engaging labour, or by depositing the notes in the bank, which must at once find borrowers for the money, if necessary by reducing the rate of interest on its loans. **In this way the circulation of money is subjected to pressure.**

The purpose of Free-Money is to break the unfair privilege enjoyed by money. This unfair privilege is solely due to the fact that the traditional form of money has one immense advantage over all other goods, namely that it is indestructible. The products of our labour cause considerable expense for storage and caretaking, and even this expense can only retard, but cannot prevent their gradual decay. The possessor of money, by the very nature of the money-material (precious metal or paper) is exempt from such loss. in commerce, therefore, the capitalist (possessor of money) can always afford to wait, whereas the possessors of merchandise are always hurried. So if the negotiations about the price break down, the resulting loss invariably falls on the possessor of goods, that is, ultimately, on the worker (in the widest sense).

(135) This remarkable change in the behaviour of buyers has made commercial establishments to a large extent superfluous; for when buyers provide themselves with goods for some time ahead and no longer insist on immediate delivery, the merchant does not need to stock the goods. He keeps a sample collection and his customers give him their orders. The

merchant collects orders and delivers the goods direct from the railway station when they arrive. In this way he can of course sell them cheaper.

The disappearance of shops, where formerly everything could be obtained for immediate use, forces even the most dilatory buyers to consider in advance what goods they may need, so as to secure them at the right time by an early order. Thus Free-Money has brought us at length to the point where the estimate of the need for goods is not made by merchants but by the buyers themselves - to the very great advantage of all concerned. Curiously enough, it was the merchant who formerly estimated the consumers' needs in advance, so as to be able to give his orders; and it is clear that he often miscalculated. The consumer now estimates his own needs, and as he obviously knows his own needs and means better than the merchant knows them, errors are less frequent.

(137) And now this wretched Free-Money ! Before parting with his securities the investor must ask himself what he is going to do with the money he obtains for them. **For this money no longer allows him to pause and consider; he cannot take it home with him and tranquilly wait.** Money has become a mere halt by the wayside. So people ask: "What will become of the yield of these securities ? You say the outlook for them is bad, and we believe you, but is the outlook any better for the money you give us in exchange ? What are we to buy with the money? We do not care to purchase Government securities, since others have forestalled us and forced up their price. Are we to sell our securities at a loss, simply to buy others at an exorbitant price, that is, again as a loss ? If we lose in buying Government securities, we may as well lose on our own securities. We prefer to wait a while before we sell".

That is the new attitude of the public, and it ruins our business. This confounded waiting ! Through it the first impression of our news wears off, the bewilderment passes away and another party has time to spread

reassuring news, exposing our exaggerations and lies; and so the game is up. For it is the first impression that tells and must be exploited. Duping the public has become a difficult business.

My working capital, moreover, is invested in this carrion money and rots away in my safe. **To carry out my stroke at the right moment I am forced to keep a reserve of money. If I count this reserve after a lapse of time, I find that it has already suffered a considerable depreciation. A regular and certain loss in return for a very uncertain chance of profit!**

(139) A socialist attributed my increased power of saving to a general reduction of "surplus value" which,keeping pace with the decline of the rate of interest, has affected all capital (tenements, railways, factories, etc.). The manager of a consumers' co-operative society explained that with Free-Money commercial costs have fallen from an average of 40% to barely 10%, so that for this reason alone I economise 30% on my purchases. And a social reformer attributed my increased saving capacity to the removal of economic disturbances. They may all three be right. The fact is that instead of $100 I now save over $1000 and live more comfortably than before. And for many people Free-Money has made saving for the first time possible.

(139) Out of my income of $1000 I was able to save $100 a year. At 4% compound interest that would produce $1236 in ten years. Since the elimination of interest my wages have doubled, so instead of $100 I can now save $1100 a year, or $11,000 in ten years.

(144) Anyone in possession of Free-Money is forced to pass it on, no matter whether that means a loss or a profit. Free-Money commands; it brooks no delay, it breaks all fetters. The speculator or financier who in attack or defence attempts to hinder the circulation of money is struck down by it. **With the force of an explosive it bursts open all stores**

of money, from the cellars of the great banks to the humble money-box of some stable-boy, liberating itself and rushing to the market. Hence the name "Free- Money". Whoever sells goods for Free-Money must immediately purchase goods again. And purchase of goods means sale of goods, and sales of goods mean employment.

(145) Before making a purchase the merchant considered the state of the market, trade prospects and home and foreign politics. If he thought that others shared his belief that a general rise of prices was imminent, he hastened to buy, so as to participate in the looked-for rise with as large a stock of goods as possible. If he was not mistaken, if he had many fellow believers, so that many did buy, that alone was reason enough for the expected to happen, namely a rise of prices - no matter what the reasons of higher prices, everybody possessing a money reserve will buy, and when all money reserves are employed for purchases, prices must rise.

This case supplies proof of the doctrine that he who believeth shall be saved.

The reverse was of course true when there was a general belief in a fall of prices. When a merchant believed that his fellow merchants believed that prices would fall, he tried to dispose of his stock of goods; on the one hand by forcing their sale, if need be through a reduction of prices. and on the other hand by delaying his orders until a more propitious moment. But as his fellow believers acted in the same manner this again was the sole reason for bringing about the thing they feared. Their belief had made fools of them. For under the gold standard everything happened that people believed. **Belief reigned supreme.** The belief in the coming of higher or lower prices was quite sufficient to make this belief a reality.

Beliefs, moods, weather reports determined whether money was or was not offered in exchange for goods, whether the workers played football or worked night-shifts and overtime. The offer of the whole monetary reserves

in exchange for goods depended on belief!

Free-Money has changed all this. Money does not now wait to inquire about the beliefs or moods of its possessor. It commands, it places orders of its own accord. But just because belief has been eliminated from commerce because faith, hope and love of profit no longer influence the circulation of money, demand is regularised. Mercantile hopes and fears are now simply personal matters without any effect on the market. **Labour and the demand for goods are no longer dragged at the heels of an arbitrary power, money; they are no longer subject to the will of the possessors of money, for money is now demand itself.**

(147) With the introduction of Free-Money our whole programme has been fulfilled. The goal towards which we had been groping has been reached. What we had hoped to attain by means of complicated, vaguely-conceived institutions such as exchange-banks and co-operative societies, namely a perfect exchange of goods, has been realised in the very simplest and easiest way through Free-Money.

....Proudhon did indeed suspect that there was something wrong about metal money; for did he not call gold **"a bar to the market, a sentinel guarding the gates of the market with orders to let no one pass".** But he never tried to find out exactly what was wrong with money, although this was the point at which his investigations should have started. It was his failure to do so that led him astray. In raising labour, or the result of labour, the commodity, to the level of ready money (that is, gold) Proudhon thought he had discovered the solution of the social problem. But why was it necessary to "raise" goods to a higher level, what was there in gold (then money) that placed it above the level of labour ?

Here, in this idea of raising goods to the level of gold, lay Proudhon's error. He should have inverted the proposition and

said: "We wish money and goods to circulate on the same level, so that money shall never be preferred to goods; goods thus becoming money, and money goods. Let us therefore debase money to the level of goods. We cannot alter the qualities of goods and endow them with the advantages inherent in gold as a commodity. We cannot make dynamite harmless, or prevent glass from breaking, or iron from rusting, or furs from being eaten by moths. Goods invariably have natural defects; they decay, they are subject to the destructive agencies of nature - gold alone is exempt. **In addition to this, gold has the privilege of being money and, as money, of being universally saleable; and it can be conveyed from one place to another without appreciable expense. How, therefore, can we possibly raise goods to the level of gold ?**

But the opposite procedure is easy: Money is adaptable; we can do with it as we please, since it is indispensable. Let us degrade it to the level of goods, let us give it qualities that win counterbalance the evil qualities of goods".

By the introduction of Free-Money this logical idea has now been put in practice, and the result proves how much truth and just observation is contained in Proudhon's pithy phrases, and how narrowly he missed the solution of the problem.

(151) How did the instruments of production (machinery, ships, raw materials and so forth) come into existence ? Does a man still make his own instruments of production out of raw materials found on his own land ? Possibly that may happen exceptionally now and then, but the general rule is that the instruments of production have to be bought and paid for with a sum of money. The foundation capital of all enterprises of any magnitude is a sum of money which is entered on the first page of the ledger. **Now if this money paid for instruments of production**

is intrinsically capital, if the owners of the money, by merely locking it up can prevent the creation of an enterprise, it is clear that they will not advance any money for enterprises which yield no interest. If I can obtain 5% on my money from the purchase and sale of commodities. I am obviously not going to be satisfied with less in the manufacture of them. If I can collect ore at the surface I shall not dig a pitshaft.

Hence it follows that the number of houses built is limited by the fact that rents must remain high enough to include the interest-tribute that money can exact. If by chance more houses have been built, if the supply is greater than the demand, rent of course falls and the houses do not yield the interest required. **Whereupon workers in the building trade are dismissed, and house-building is suspended until, through the increase of population, the demand for houses has increased to the point where rents again yield the full interest exacted by money. Only then can the building trade make a fresh start.**

(153) But then the savings bank will answer: We cannot leave our money idle, we cannot store it. **Free- Money forces us to lend it. We do not insist on 5, 4, or 3 %, we are willing to negotiate. If we let you have the money at 2, 1 or 0%, you can reduce your rents accordingly, whereupon those who were satisfied with one room will rent two, and those who had five will want ten. You will then be able to build more houses. There is real need of houses, it is only a matter of price. So take the money at 2% if 3% is now more than you can pay. Build away, reduce your rents; you cannot suffer any loss, for we shall provide you with correspondingly cheaper loan-money.** There is no fear that either you or we shall ever be short of money, for the more we reduce the rate

of interest and you reduce the rents, the larger will be the sums that the savers will put by and pass on to us. Nor is there any fear that this great quantity of money will force up prices, for every penny of it has Previously been withdrawn from circulation; the volume of money has remained unchanged. Those who saved the money produced and sold more goods than they consumed, so there is a surplus of goods corresponding to the amount of money which we supply to you.

Take the money, therefore, without anxiety. If the interest yielded by your houses falls, we shall follow suit with our money interest, even if interest should be thereby depressed to zero. For even with interest at 0% we are compelled to lend the money.

(155) All of them made the lending of money dependent on interest, and even had we levelled all incomes it would not have altered the fact that the money-saver, the man who produced and sold more goods than he consumed, would not have put his money surplus into circulation until he was assured his interest. Thus the activity of the savers necessarily brought about an excess of commodities, stagnation of the markets and unemployment as soon as commerce and industry ceased to yield interest. **The cause of the crisis lay in the fact that capitalists refused to invest their money unless they obtained interest, and that when the supply of houses, industrial plant and other instruments of production passed a certain limit, the rate of interest fell below the minimum yield necessary to pay the interest on the money invested in them.**

(also related to this on page 112) The fate of this reform would be determined by the behaviour of persons in a position to save. We must here recall our words about saving. A person who saves produces more wares than he purchases, and his surplus, bought by employers with money from the savings banks, is worked up into new real capital. But no one

parts with money-savings unless promised interest, and the employer can pay no interest if what he constructs does not bring in at least as much interest as is demanded for the use of savings. And if work upon the building of houses, factories, ships, etc. continues for a time, the interest on such things of course falls. The employer cannot then pay the interest demanded for the use of savings. **The money remains in the savings-banks, and as this is the money with which the surplus wares of the savers are bought, the sale of these wares is interrupted and prices fall. This means a crisis.**

(155) This point was not altogether overlooked; it was proposed to dissociate the currency from any kind of metal by abolition of the right of free coinage of silver and gold, so that the manufacture of money (not the supply of money) might be regulated; more money being manufactured when prices fell and less when prices rose. It was supposed that by this simple method the supply of money could always be adapted to the demand.

This proposal was never put into practice, which was lucky, for it would have proved a failure. **Its authors mistook a stock of money for a supply of money, believing as they did, that because a large stock of potatoes means an equally large supply of potatoes, it must be the same in the case of money.** But that is by no means true. The supply of potatoes or any other commodity corresponds exactly to the stock, since storage involves heavy expense. Had the traditional form of money resembled the general run of commodities, had it not been possible to hoard metal money without expense, the supply of money might reasonably have been estimated by the stock. But that, as we know, was not the case. The supply of money depended absolutely on the will of its owners. And not one penny was put in circulation commercially or financially as long as no interest could be obtained. No interest - no

money; even though the stock of money were increased a hundred-fold.

(156) Free-Money makes the supply of money independent of all conditions; the exact quantity of money that has been put in circulation by the State is supplied to the market. What had hitherto been taken for granted, namely, that the supply of money, like the supply of potatoes, must always be equal to the stock, has for the first time become a reality. The supply of money no longer runs an independent course; it has ceased to be an arbitrary act; it is not influenced by human volition. **The quantity theory now holds good, even in the simple form sometimes termed "crude".**

(156) Formerly, when a general fall of prices set in (already an indication that the supply of money was insufficient) money was withdrawn from the market (because with prices falling nobody buys or can buy goods commercially, without incurring the risk of losing on the outlay), **and in this way a general fall of prices frequently developed into a frantic universal scramble for ready money, which inevitably precipitated prices to the lowest depths. Whereas at present money is supplied in all conceivable circumstances.**

or inflation

(157) And with a general rise of prices, the index of an excessive supply of money, all private reserves of money sought a market, because everyone was anxious to participate in the generally expected further rise with as large as possible a stock of goods or of industrial shares. **This made the expected rise inevitable, forcing up prices to the very highest level attainable by the supply of all private reserves of money. Whereas at present prices cannot rise at all, because there are no longer any private reserves of money.**

(158) Free-Money has opened my eyes to all that; it has liberated me from my illusions about so-called "value", the very existence of Free-Money being a tangible refutation of all theories of value and of the very belief in value. And the belief in value being disposed of, the conception of "labour" went overboard, being wholly superfluous for an examination of economic laws. What is labour ? **Labour cannot be measured by the movements of the arms, or by the degree of fatigue, but solely by the produce of labour. James Watt in his grave does more work today than all the horses alive. it is not the labour, but the result of labour, the product, that matters.** The product is the thing bought and paid for, as is clearly demonstrated in the case of piece-work. And at bottom all labour is piece-work.

10.2 The General Theory

(86) But, apart from short-period changes in the level of income, it is also obvious that a higher absolute level of income will tend, as a rule, to widen the gap between income and consumption. For the satisfaction of the immediate primary needs of a man and his family is usually a stronger motive than the motives towards accumulation, which only acquire effective sway when a margin of comfort has been attained. **These reasons will lead, as a rule, to a greater proportion of income being saved as real income increases.**

(119) When a man buys an investment or capital-asset, he purchases the right to the series of prospective returns, which he expects to obtain from selling its output, after deducting the running expenses of obtaining that output, during the life of the asset. This series of annuities $Q_1, Q_2, \ldots Q_n$ it is convenient to call the prospective yield of the investment.

Over against the prospective yield of the investment we have the supply price of the capital-asset, meaning by this, not the market-price at which an asset of the type in question can actually be purchased in the market, but the price which would just induce a manufacturer newly to produce an additional unit of such assets, i.e. what is sometimes called its replacement cost. The relation between the prospective yield of a capital-asset and its supply price or replacement cost, i.e. the relation between the prospective yield of one more unit of that type of capital and the cost of producing that unit, furnishes us with the marginal efficiency of capital of that type. More precisely, I define the marginal efficiency of capital as being equal to **that rate of discount which would make the present value of the series of annuities given by the returns expected from the capital-asset during its life just equal to its supply price**. This

gives us the marginal efficiencies of particular types of capital-assets. The greatest of these marginal efficiencies can then be regarded as the marginal efficiency of capital in general.

(120) Now it is obvious that the actual rate of current investment will be pushed to the point where there is no longer any class of capital-asset of which the marginal efficiency exceeds the current rate of interest. In other words, **the rate of investment will be pushed to the point on the investment demand-schedule where the marginal efficiency of capital in general is equal to the market rate of interest.**

(121) It follows that the inducement to invest depends partly on the investment demand-schedule and partly on the rate of interest. Only at the conclusion of Book IV will it be possible to take a comprehensive view of the factors determining the rate of investment in their actual complexity. I would, however, **ask the reader to note at once that neither the knowledge of an asset's prospective yield nor the knowledge of the marginal efficiency of the asset enables us to deduce either the rate of interest or the present value of the asset.** We must ascertain the rate of interest from some other source, and only then can we value the asset by 'capitalising' its prospective yield.

(127) But where a system of borrowing and lending exists, by which I mean the granting of loans with a margin of real or personal security, a second type of risk is relevant which we may call the lender's risk. This may be due either to moral hazard, i.e. voluntary default or other means of escape, possibly lawful, from the fulfilment of the obligation, or to the possible insufficiency of the margin of security, i.e. involuntary default due to the disappointment of expectation. A third source of risk might be added, namely, a possible adverse change in the value of the monetary standard which renders a money-loan to this extent less secure than a real asset; though all or most of this should be already reflected, and therefore

absorbed, in the price of durable real assets.

Now the first type of risk is, in a sense, a real social cost, though susceptible to diminution by averaging as well as by an increased accuracy of foresight. **The second, however, is a pure addition to the cost of investment which would not exist if the borrower and lender were the same person.**

(146) But this decision having been made, there is a further decision which awaits him, namely, in what form he will hold the command over future consumption which he has reserved, whether out of his current income or from previous savings. Does he want to hold it in the form of immediate, liquid command (i.e. in money or its equivalent)? Or is he prepared to part with immediate command for a specified or indefinite period, leaving it to future market conditions to determine on what terms he can, if necessary, convert deferred command over specific goods into immediate command over goods in general? **In other words, what is the degree of his liquidity-preference—where an individual's liquidity-preference is given by a schedule of the amounts of his resources, valued in terms of money or of wage-units, which he will wish to retain in the form of money in different sets of circumstances?**

(147) Thus the rate of interest at any time, being the reward for parting with liquidity, is a measure of the unwillingness of those who possess money to part with their liquid control over it. **The rate of interest is not the 'price' which brings into equilibrium the demand for resources to invest with the readiness to abstain from present consumption. It is the 'price' which equilibrates the desire to hold wealth in the form of cash with the available quantity of cash**;—which implies that if the rate of interest were lower, i.e. if the reward for parting with cash were diminished, the aggregate amount of cash

which the public would wish to hold would exceed the available supply, and that if the rate of interest were raised, there would be a surplus of cash which no one would be willing to hold. If this explanation is correct, the quantity of money is the other factor, which, in conjunction with liquidity-preference, determines the actual rate of interest in given circumstances. Liquidity-preference is a potentiality or functional tendency, which fixes the quantity of money which the public will hold when the rate of interest is given; so that if r is the rate of interest, M the quantity of money and L the function of liquidity-preference, we have M = L(r). This is where, and how, the quantity of money enters into the economic scheme.

(148) This necessary condition is the existence of uncertainty as to the future of the rate of interest, i.e. as to the complex of rates of interest for varying maturities which will rule at future dates. For if the rates of interest ruling at all future times could be foreseen with certainty, all future rates of interest could be inferred from the present rates of interest for debts of different maturities, which would be adjusted to the knowledge of the future rates. .....**The actuarial profit or mathematical expectation of gain calculated in accordance with the existing probabilities**—if it can be so calculated, which is doubtful—**must be sufficient to compensate for the risk of disappointment.**

(149) There is, moreover, a further ground for liquidity-preference which results from the **existence of uncertainty as to the future of the rate of interest**, provided that there is an organised market for dealing in debts. **For different people will estimate the prospects differently** and anyone who differs from the predominant opinion as expressed in market quotations may have a good reason for keeping liquid resources in order to profit, if he is right, from its turning out in due course that the ${}_1d_r$'s were in a mistaken relationship to one another.

...The three divisions of liquidity-preference which we have distin-

guished above may be defined as depending on (i) **the transactions-motive**, i.e. the need of cash for the current transaction of personal and business exchanges; (ii) **the precautionary-motive**, i.e. the desire for security as to the future cash equivalent of a certain proportion of total resources; and (iii) **the speculative-motive**, i.e. the object of securing profit from knowing better than the market what the future will bring forth.

(151) We have now introduced money into our causal nexus for the first time, and we are able to catch a first glimpse of the way in which changes in the quantity of money work their way into the economic system. If, however, we are tempted to assert that money is the drink which stimulates the system to activity, we must remind ourselves that there may be several slips between the cup and the lip. For whilst an increase in the quantity of money may be expected, cet. par., to reduce the rate of interest, this will not happen if the **liquidity-preferences** of the public are increasing more than the quantity of money; and whilst a decline in the rate of interest may be expected, cet. par., to increase the volume of investment, this will not happen if the schedule of the **marginal efficiency of capital** is falling more rapidly than the rate of interest; and whilst an increase in the volume of investment may be expected, cet. par., to increase employment, this may not happen if the **propensity to consume** is falling off.

(162) The reader will readily appreciate that the problem here under discussion is a matter of the most fundamental theoretical significance and of overwhelming practical importance. For the economic principle, on which the practical advice of economists has been almost invariably based, has assumed, in effect, that, cet. par., a decrease in spending will tend to lower the rate of interest and an increase in investment to raise it. **But if what these two quantities determine is, not the**

rate of interest, but the aggregate volume of employment, then our outlook on the mechanism of the economic system will be profoundly changed. A decreased readiness to spend will be looked on in quite a different light if, instead of being regarded as a factor which will, cet. par., increase investment, it is seen as a factor which will, cet. par., diminish employment.

(188) It is much preferable to speak of capital as having a yield over the course of its life in excess of its original cost, than as being productive. For the only reason why an asset offers a prospect of yielding during its life services having an aggregate value greater than its initial supply price is because it is scarce; **and it is kept scarce because of the competition of the rate of interest on money. If capital becomes less scarce, the excess yield will diminish, without its having become less productive—at least in the physical sense.**

I sympathise, therefore, with the pre-classical doctrine that everything is produced by labour, aided by what used to be called art and is now called technique, by natural resources which are free or cost a rent according to their scarcity or abundance, and by the results of past labour, embodied in assets, which also command a price according to their scarcity or abundance. **It is preferable to regard labour, including, of course, the personal services of the entrepreneur and his assistants, as the sole factor of production, operating in a given environment of technique, natural resources, capital equipment and effective demand.**

(191) We have seen that capital has to be kept scarce enough in the long-period to have a marginal efficiency which is at least equal to the rate of interest for a period equal to the life of the capital, as determined by psychological and institutional conditions. **What would this involve for a society which finds itself so well equipped with capital that**

its marginal efficiency is zero and would be negative with any additional investment; yet possessing a monetary system, such that money will 'keep' and involves negligible costs of storage and safe custody, with the result that in practice interest cannot be negative; and, in conditions of full employment, disposed to save?

If, in such circumstances, we start from a position of full employment, entrepreneurs will necessarily make losses if they continue to offer employment on a scale which will utilise the whole of the existing stock of capital. **Hence the stock of capital and the level of employment will have to shrink until the community becomes so impoverished that the aggregate of saving has become zero,** the positive saving of some individuals or groups being offset by the negative saving of others. Thus for a society such as we have supposed, the position of equilibrium, under conditions of laissez-faire, will be one in which **employment is low enough and the standard of life sufficiently miserable to bring savings to zero.**

(193) Let us assume that steps are taken to ensure that the rate of interest is consistent with the rate of investment which corresponds to full employment. **Let us assume, further, that State action enters in as a balancing factor to provide that the growth of capital equipment shall be such as to approach saturation point** at a rate which does not put a disproportionate burden on the standard of life of the present generation.

On such assumptions I should guess that a properly run community equipped with modern technical resources, of which the population is not increasing rapidly, ought to be able to bring down the marginal efficiency of capital in equilibrium approximately to zero within a single generation; so that we should attain

the conditions of a quasi-stationary community where change and progress would result only from changes in technique, taste, population and institutions, with the products of capital selling at a price proportioned to the labour, etc., embodied in them on just the same principles as govern the prices of consumption-goods into which capital-charges enter in an insignificant degree.

(196) It follows from this that there is no reason why their rates of interest should be the same for different commodities,—why the wheat-rate of interest should be equal to the copper-rate of interest. For the relation between the 'spot' and 'future' contracts, as quoted in the market, is notoriously different for different commodities. This, we shall find, will lead us to the clue we are seeking. **For it may be that it is the greatest of the own-rates of interest (as we may call them) which rules the roost (because it is the greatest of these rates that the marginal efficiency of a capital-asset must attain if it is to be newly produced); and that there are reasons why it is the money-rate of interest which is often the greatest (because, as we shall find, certain forces, which operate to reduce the own-rates of interest of other assets, do not operate in the case of money).**

(196) It may be added that, just as there are differing commodity-rates of interest at any time, so also exchange dealers are familiar with the fact that the rate of interest is not even the same in terms of two different moneys, e.g. sterling and dollars. For here also the difference between the 'spot' and 'future' contracts for a foreign money in terms of sterling are not, as a rule, the same for different foreign moneys.

10.3 The Natural Economic Order Book 3 Chapter 13: Reform of the Note-Issue

(111) I deny this possibility and intend to prove in black and white that if the State controls the amount of money issued, but neglects to control its circulation, all the anomalies we have revealed in the functioning of the present form of money will continue to exist.

As long as money, regarded as a ware, is superior to wares in general, as long as savers prefer money to wares (their own products), as long as speculators can with impunity misuse money for manipulating the market, money will not mediate the exchange of wares without exacting a special tribute over and above the legitimate profit of commerce. But money should be "the key to open the gates of the market, not the bolt to close them"; it should be a road and not a toll-gate; it should assist and cheapen exchange, not impede and burden it. And it is clear that money cannot be simultaneously the medium of exchange and the medium of saving - simultaneously spur and brake.

In addition to State control of the quantity of money in circulation (only possible by means of a paper-money standard) I therefore propose a complete separation of the medium of exchange from the medium of saving. All the commodities of the world are at the disposal of those who wish to save, so why should they make their savings in the form of money ? Money was not made to be saved!

(112) But here the reformers of the note-issue intervene and say, Why did the crisis break out ? Because prices fell - and prices fell because money was scarce. Because of the lowered rate of interest on real capital, part of the stock of money was withdrawn from circulation. Good ! We leave the savers or the savings-banks in possession of the money, and let them hoard it; we shall replace it with new money. The State prints

money and advances it to the employers, if the money of capitalists and moneysavers is held back. If the rate of interest on real capital falls, the State also reduces the rate of interest on the money it issues. If employers can extract only 3, 2, 1% from their houses, factories, ships, the State supplies them with money at 3, 2, 1 %, or, if necessary, at 0 %.

(113) The surplus production of the savers is in this case not bought with their money, but with new money. For the moment this is unimportant; with the help of the new money the building of houses, factories and ships proceeds without interruption. It is true that employers receive less and less interest from these enterprises, since building is now uninterrupted, and the supply of ships, tenements, etc. is constantly increasing. But parallel with the decrease of the interest they receive is the fall in the rate of interest they have to pay the Bank of Issue. As employers they are therefore indifferent to the amount of interest they receive on the ships or houses, as it must all be handed over to their creditors. Work proceeds without interruption, and there is therefore no interruption in saving. Many still find it advantageous to lend their savings at the lower rate of interest; but others, especially the small savers who, in any case, obtain but a trivial amount of interest, will return to tie old custom of keeping their savings at home and renouncing interest - even if the fall in the rate of interest is only from 5% to 4% or 3%. The small sums thus hoarded would, added together, amount to many hundred million dollars. The State replaces this amount by the issue of new money. Crisis is thus averted and work proceeds upon houses, ships, factories, the interest upon which would steadily, and probably quickly, fall. But the fresh fall in the rate of interest will still further check the flow of savings into the savings-banks. Soon even the larger class of savers will begin to find it scarcely profitable to bring money to the savings-banks; they will certainly hesitate about bringing money wanted at short notice to a savingsbank

some distance away. Some persons will also consider their money safer in their own possession than under the control of strangers. All the forces preventing the re-entry of saved money into circulation, which were counterbalanced by the high rate of interest, will now be set free, and a stream of money, paper-money, will flow from the National Currency Office or Bank of Issue into millions of savings-boxes. The lithographic press of the National Currency Office will ceaselessly replace what is here withdrawn from the market. A mighty stream of paper-money, of demand due from day to day, will be lost to sight.

(114a) Billions of dollars are lent on mortgage. But if mortgages bring in no interest they will be foreclosed and the money hoarded. The State must replace these billions by new issues. Bills of exchange to a total of over 30 billions of marks circulate regularly in Germany and at the same time serve as a medium of exchange. But if interest disappears, no one will any longer discount a bill. Bills of exchange therefore become useless for trade purposes, and the State will have to issue an equivalent amount of money. Many hundreds of billions will be necessary. With a hundred lithographic presses printing $1000 notes day and night the State will hardly keep pace with the requirements of currency. Hundreds of billions of demand, due in the market from day to day, lying buried in the hoards !

But what if, for any reason, this demand came to life and appeared in the market ? Where would then be the corresponding supply of products ? If supply is lacking, prices rise, and rising prices cause differential profits. This prospect of gain entices money into the market ! The rise of prices, the prospect of differential profits, bursts open the savings-boxes and the billions of demand pour like an avalanche upon the market. "Sauve qui peut !" is the cry, and in the shipwreck the only lifeboats are the wares. Those who can buy wares are safe, so everybody buys wares. Demand

rises to thousands of billions, and as supply is of course lacking, prices shoot up. The rise of prices annihilates savings. The peasant again uses paper-money as he used the French assignats - to paper his cowshed.

(114b) The second contradiction lies in the fact that the State, when issuing money to employers, was itself not using the money as a medium of exchange. The money was not given for wares but for bills of exchange, mortgages and other securities. But money is a medium of exchange, and as such should be issued only against wares, that is, given out in accordance with its purpose. If the State had issued money only for wares (and if these wares had not in the meantime fallen into dust and decay), it would have no reason to fear the avalanche of demand caused by the return to circulation of the hoarded savings. As it is, the State holds only mortgages, promissory notes and bills of exchange which bear no interest, and with such instruments no ready money can be recalled.

The State misunderstood the function of money when it advanced the employers the money refused them by the savers. The State misused its power; and money wreaks a sharp and sudden vengeance for every misuse to which the State subjects it.

(115a) The State has here treated money for exchange and money for saving as equivalents; it has replaced the money withdrawn from the market in the form of savings, by purchasing bills of exchange, mortgages, and so forth. When the time comes for the State to exchange these things for savings, the impossibility of doing so becomes apparent.

This becomes still clearer if we think of two different kinds of money, say gold and tea, in circulation together. To those who use money as a medium of exchange it would be a matter of indifference which kind of money they received, as they would immediately pay it out again. But to those who wish to save money, it is by no means a matter of indifference whether they receive gold or tea, since gold is durable and tea spoils. A

person who wishes to save will not give $10 of gold for $10 of tea; indeed, if he reckons with long periods of time, he will not deem gold and tea equivalent at any ratio of exchange. For him gold and tea are simply quantities that cannot be compared.

(115b) Further, the State must act promptly. The slightest rise of prices would immediately bring speculators for a rise of prices upon the scene, and once they had pocketed their first gains from the differences in price-levels there would be no holding back the flood of paper-money. Any action by the State would then come too late. Let us picture the situation of the State. Ten billions are necessary for the regular exchange of wares, 100 billions have been issued and the difference hoarded as savings. If a fraction of the surplus 90 billions reaches the market, prices rise, and the moment prices rise, the rest of the 90 billions are flung upon the market. The sequence of events would be as follows: The merchants who believe prices are about to rise buy more than they immediately require. They obtain the money for these purchases by offering interest to the savers of money. These savings, coming into circulation, now make the rise of prices a reality. This stimulates new borrowing and new speculative purchases. So the process would proceed, step by step, until all the money from the savings-boxes had been drawn into circulation by the upward movement of prices.