Alex Kampa

Money, Credit Conversion and the legacy of Mitchell-Innes

A small collection of
articles and snippets about money
followed by a reprint of
two seminal articles by Alfred Mitchell-Innes

Godel Press

Godel Press 001

Alex Kampa

Money, Credit Conversion and the legacy of Mitchell-Innes

A small collection of
articles and snippets about money
followed by a reprint of
two seminal articles by Alfred Mitchell-Innes

Godel Press

First edition - v3

Godel Press, Luxembourg
www.godelpress.com

ISBN 978-99959-827-0-6

Contents

Alex Kampa is the research director of New Money Hub, a think tank that is developing a decentralised money platform based on peer-to-peer credit relationships. He is interested in monetary theory, stable economic systems and crypto-finance technology. His e-mail address is ak@newmoneyhub.com.

Foreword to the 1st edition

For well over a year now, I had been toying with the idea of publishing an inexpensive reprint of Mitchell-Innes's seminal articles on money, which were published in the *Banking Law Journal* in 1913 and 1914. They deserve to be more widely known and a pocket book is still the best way of working with a text - mainly because it can be annotated, carried around and has a kind of permanence that a printout does not. Although these articles have already been reprinted in Randall Wray's excellent "Credit and State Theories of Money", that book, both by its physical format and its price, is clearly aimed at a different audience.

In the meantime, I had written an article entitled "The Credit Conversion Theory of Money" which focuses on one particular aspect of credit theory, namely how debt is converted to money. I believe that there might be some merit to this approach and am using credit conversion as one of the central concepts in the functional design of the New Money Hub platform that is currently being developed.

So in the end I decided to collect some of my writings and "snippets" on money, and publish them together with the essays of Mitchell-Innes.

Luxembourg, 22 December 2016

Backing of money (1)

There is, in the end, only one possible backing of money, and that is human work. All the mechanisms of banking and finance tend to hide this basic fact.

Backing of money (2)

Money originating from private sector debt is backed by a promise to work, to provide goods and services. We call this "productive money."

Money originating from public sector debt is backed by a promise to tax. We call this "unproductive money" if issued in excess. As Mitchell-Innes noted, it creates an illusion of wealth: "the more government money there is in circulation, the poorer we are."

Money primitives

The three "primitive" monetary operations are the following:

1. *Issuance* — this is when a money token (in whatever form) is transferred from its issuer to another party, it is the moment when money is created.

2. *Transfer* — when money is transferred between two parties, none of which is its issuer.

3. *Cancellation* * — when the money token returns to the issuer, thereby ceasing to be money, but possibly retaining some intrinsic value, as with a coin.

To that we can add a fourth operation, which is the exchange of tokens:

4. *Exchange* — a simultaneous transfer of money between two parties.

That is all there is, and there is no mystery in it.

* also called money destruction or money deletion

Capitalism

When I was a child, we once lived in a house that was directly overlooking a small wood processing plant. As most of the work was done outside, we had a good view of the comings and goings of the owner and his workers.

The owner lived in a large house next to the plant and drove a Mercedes-Benz sedan. We thought that he was quite rich.

My father had seen him at the local bank a few times, always early in the morning. He eventually noticed that this was a regular pattern: the plant owner would walk to the bank every morning, just after it opened. My father was convinced that the owner was keen to verify how much his bank balance had increased overnight, and that this behaviour was typical for a capitalist.

Years later, I heard that the wood-processing plant had gone out of business.

Later still, I came to understand that a capitalist was often enough not someone who had money, but someone who had taken on debt to finance his enterprise. Then came my own eye opening moment: maybe the factory owner was not always proudly walking to the bank to check how much money he had! It might sometimes have been an anxious walk to see if his clients had finally paid their bills, so that he in turn could pay his workers and suppliers, or be able to meet a looming debt payment.

On monetary communism

In the context of a simmering global debt crisis, various ideas on monetary reform are circulating, among them the so-called debt-free money theories. For example, in a March 2015 report commissioned by the Prime Minister of Iceland, Frosti Sigurjónsson advocates the introduction of a Sovereign Money System, in which "the amount of money in the economy is controlled directly by the Central Bank, preventing private banks from expanding it."

During the 20th century, we have learned that centrally directed economies do not perform well compared to market economies. It is only in market economies, with the proper social constraints, that human creativity and productivity can develop fully. How, then, can we think that a centrally directed money supply will solve our problems?

Our planet is an immense reservoir of natural resources, real estate and human productivity. It is against this collateral that money is issued—an issuance that is an expression of human will. Any individual, any corporation naturally wishes to decide freely how much credit they want to issue, within the constraints of the collateral available to them and of their individual creditworthiness. And it is precisely because credit thus issued is an emanation of human willpower, and carries in itself the readiness to work and to produce, that it is the natural foundation for sound money.

Any attempts to deny this basic fact and to institute what amounts to monetary communism are bound to fail.

Helicopter money: the question not asked

In a recent newspaper article (FT, 4 August 2016, "A tweak to helicopter money will help the economy take off"), Robert Skidelsky argues for a new economic strategy for Britain. The first element would be a £46bn "helicopter money" package with a twist: every one of the 46m British citizens on the electoral register would receive a smart card with £1,000 on it, with the unspent balance to be reduced gradually every week. He calls this "Gesell money", after Silvio Gesell, and notes that "the tax on hoarding Gesell money would boost its multiplier effect."

In parallel, a £50 billion public infrastructure programme would be launched, one that would give preference to British firms. How this could be done while Britain is still in the EU is not explained.

Because "adding to the national debt by issuing government bonds for an infrastructure programme is likely to unsettle the financial markets", Mr. Skidelsky recommends that the government borrow from the central bank instead: "This will increase the government's deficit, but not the national debt, since a loan by the central bank to the government is not intended to be repaid. Thus the government acquires an asset but no corresponding liability."

By the way, if by borrowing almost £100bn the government acquires an asset but no corresponding liability, then why not borrow £500bn instead? Any why not more?

There remains one question not asked: why would the govern-

ment not simply raise the money via taxation? It's the tried and tested method, and might even help alleviate the high and growing wealth disparity in Britain.

Government fiat: how much is too much? A practical solution

A monetary system in which government money and bank money are clearly separated, with the market deciding their relative value, is a practical solution to gauging reasonable levels of government indebtedness.

The question

We start with the observation that a government can issue significant amounts of fiat money with legal tender status in anticipation of tax revenues, without necessarily having a negative impact on commerce and the money system. But we also know that excessive issuance has, at various times in history, led to bouts of inflation and even hyperinflation.

So the question is: how much is too much?

If a government proposes to issue fiat money in the amount of a year's expected tax receipts, even fiscal conservatives will probably agree with that. After all, if we postulate a system in which the only issuer of legal tender money is the government, then in order to provide the private sector with enough legal tender to pay its taxes, the government would indeed have to issue at least one year's worth of tax receipts every year. But if the issuance of a year's worth of tax receipts is necessary, would twice that amount not be reasonable? And how about three times, four times, or even ten times?

Some proponents of Modern Monetary Theory (MMT) insist that the government can issue whatever volume is needed. Tymoigne and Wray, quoted in the Wikipedia entry on MMT,

speak of an "unlimited capacity to pay" without ill effects . How could such statements be justified? Let's assume we agree that (as I believe to be true) a government can also set the interest rate on the money it issues. Now if the government sets its interest rate to 0% or below, then the net present value of its future tax receipts is virtually unlimited, which would then offset the "unlimited capacity" cited above.

Note that in the late Middle Ages, governments often issued coins and then "cried them down" - a kind of indirect taxation which had the same effect as a (sometimes quite high) negative interest rate.

That being said, the taxing capacity of a government is always limited by the actual amount of goods and services available in the economy. No monetary accounting legerdemain can overcome this limitation.

So common sense and historical precedent suggest that the government should limit the volume of issuance. However, different schools of monetary theory are likely to provide widely diverging ranges as to what that volume might be.

A possible answer:
decoupling government money from bank money

A simple and practical solution to this dilemma is to clearly separate government money and bank money, and to let the market decide their relative value.

Under normal circumstances, with both monies expressed in the same unit of account, government money and bank money would be more or less equivalent. With sound public finances, government money might be at a slight premium, from which the government could profit by setting negative interest rates. With a moderate budget deficit, the premium might become a small discount.

But in times of excessive government spending, the discount

would be likely to widen, therefore providing a strong signal to the government that a change of policy is necessary. This would also provide a clear and direct feedback to all citizens.

Note that if there is a central bank, the government money would have to be completely distinct and dissociated from central bank money. Incidentally, I agree with Mitchell-Innes that central banks are not necessary for a stable monetary system, and would thus not be necessary for the solution proposed here.

Bitcoin as conceptual art

There are some things of which near-perfect copies can be made, and yet the value of these copies will be negligible compared to the value of the original.

One example are those artifacts whose value is determined mainly by provenance and history, for example well-known works of art. The copy of one of Van Gogh's sunflower paintings, no matter how well executed it might be, will never be worth more than a very small fraction of the original. Another example are things whose value stems from a network effect. Compared to the market value of Facebook, its various imitators are worth trifling amounts.

Bitcoin also belongs to this category, as none of its clones even remotely approaches 1% of bitcoin's market capitalisation. It derives its value as much from being a work of art as it does from the network effect it has managed to create.

Fountain

In 1917, Marcel Duchamp purchased a white urinal at the J.L. Mott Iron Works showroom on Fifth Avenue in Manhattan. He wrote "R. Mutt 1917" on it, gave it the title Fountain and submitted it for the first annual exhibition of the Society of Independent Artists*. The submission was rejected, the Fountain was never exhibited and was subsequently lost – probably discarded as garbage. Only a single black-and-white photo-

* in another version, Duchamp did not even create the work, but only assisted in submitting it to the exhibition

graph remains of the original. Years later, between 1950 and 1964, Duchamp authorised a total of 16 replicas, one of which sold for $1.7 million in 1999. There was no noticeable effect on the market price of other urinals.

In 2004, Duchamp's Fountain was voted "the most influential modern art work of all time" by 500 British art experts*, coming ahead of works by Picasso and Andy Warhol.

The reason for this is simple: Fountain was revolutionary as it marked the birth of conceptual art.

Bitcoin

In 2008, a paper entitled "Bitcoin: A Peer-to-Peer Electronic Cash System" was published under the pseudonym Satoshi Nakamoto. The paper describes the concept for a decentralized digital currency, without central authority and without the necessity of mutual trust between users. The invention was released as open source software in January 2009.

People quickly saw that Nakamoto had created something that no-one had done before. They admired the strange beauty of the concept and decided that it was very valuable.

Thus Bitcoin became the greatest work of conceptual art of the 21st century, its importance arguably comparable to Duchamp's Fountain. And with an overall value exceeding EUR 10 billion (December 2016), it is certainly one of the most expensive works of art in history.

Bitcoin is also history's greatest experiment in performance art, creating a huge network effect. Many thousands of people run untold millions of powerful processors and spend terawatts of energy per year in the process. Billions have been invested in bitcoin-related startups. No day goes by without a bitcoin meetup in one of the world's major cities and bitcoin-

* http://news.bbc.co.uk/2/hi/entertainment/4059997.stm

and blockchain-related articles are flooding the media.

Finally, Bitcoin is the first massively subdivisible artwork in history. Before Bitcoin, only very few people could afford to own the original of a major work of art, as buying a small piece of a Van Gogh or a Picasso is obviously not possible. But with over 16 million bitcoins already issued as of late 2016, and each bitcoin divisible into 100 million satoshi, there are more than 200,000 satoshi for every inhabitant of our planet. And because a single cent will buy over 1,000 satoshi, everyone can easily obtain an actual piece of Bitcoin.

Money and Tense

One day in the spring of 2015, when he was about eight years old, my son had received a few coins as a reward for helping out in the house. He though about it for a while before exclaiming: “Now I understand! This money represents the work that I just did!”

A few weeks later, during a heated discussion about bitcoin, its nature and its value, someone told me that surely bitcoins must be worth something, given the cost of mining them.

The idea that something gets its value from the work or the energy that has been put into it clearly has some merit - but it is applicable to neither money nor bitcoin.

Of money and the future

Money is a type of debt, but in most languages the word “debt” has a rather negative connotation. Maybe we should call it a promise rather than a debt.

When considering a promise, the mind immediately projects itself into the future. A promise is forward-looking: it is never about the past, always about the future. Of course, the promise was made in the past and there might have been a past event that triggered the promise. Yet the fact remains that the word “promise” itself evokes the future in a way that “debt” does not, or at least not in the same way.

When money is paid for work, that money represents a promise of future work. With the money I receive for my work, I

will be able to command the work of others, either directly by purchasing services, or indirectly by purchasing goods.

Computing power tokens

The original Bitcoin article by S. Nakamoto quotes an earlier article written in 1998 by Wei Dai, "b-money", which describes b-money creation as follows:

> "1. The creation of money. Anyone can create money by broadcasting the solution to a previously unsolved computational problem. The only conditions are that it must be easy to determine how much computing effort it took to solve the problem and the solution must otherwise have no value, either practical or intellectual. The number of monetary units created is equal to the cost of the computing effort in terms of a standard basket of commodities. For example if a problem takes 100 hours to solve on the computer that solves it most economically, and it takes 3 standard baskets to purchase 100 hours of computing time on that computer on the open market, then upon the broadcast of the solution to that problem everyone credits the broadcaster's account by 3 units."

The key part is "The number of monetary units created is equal to the cost of the computing effort." In other words, b-money tokens represent a proof that a certain amount of computing power was expended. Note that producing more computers would then increase the money creation potential of this system, in which, by the way, no money destruction or cancellation was foreseen. Some mechanism for limiting issuance, which is a key feature of bitcoin, is probably missing from the paper.

Presumably, the condition "the solution must otherwise have no value, either practical or intellectual" was added to emphasize the fact that b-money would have no intrinsic value whatsoever. And yet the author clearly seemed to believe that a community of people could give such a money value and, as

absurd as that may have sounded at the time, bitcoin's success has seemingly validated Wei Dai's view.

But only seemingly, because in reality the value of bitcoin is only tangentially related to computing time or power.

Bitcoin and energy

While it is true that a great deal of electrical energy is expended for every bitcoin, that energy cannot be recovered. Therefore, bitcoin has no intrinsic value.

A fixed number* of coins are created every 10 minutes on average, independently of the overall computing power (hashing power) used by the bitcoin miners. The difficulty is adjusted roughly every two weeks: when the network's hashing power increases, the mining difficulty increases, and vice versa, so that the mining of a block again takes 10 minutes on average. In other words, the number of bitcoins issued is more or less known in advance† and largely independent of the hashing power.

Still, the price of bitcoin has some link to the energy used to mine it, certainly more so than the price of a Picasso painting has to the price of canvas. The link is the following: the cost of the network's hashing power will tend to follow the value of bitcoins issued - while generally being somewhat lower to allow for a suitable profit margin. When the price of bitcoin goes up, existing miners increase their profit margins, which will tend to attract competitors, thus increasing network hashing power and reducing overall profitability.

---

* 12.5 in in late 2016. It will decline over time via successive halvings

† although one can imagine some extreme scenarios, such as a sharp drop in hashing power leading to very long periods between blocks - imagine for example China making bitcoin mining illegal overnight. The network difficulty changes only every 2016 blocks, so such a "slow block period" could, in the absence of a suitable hard fork, last for quite a while.

To conclude, the value of bitcoin is not in any way caused or impacted by the energy expenditure of the bitcoin network. Instead, it is the value of bitcoin that drives energy expenditure.

A question in passing

Is there a way to prove that someone has access to a certain amount of IDLE computing power over a certain period of time?

Of the value of a thing

If your baker offered to sell you a two-week old loaf of bread, saying "it's made with top grade flour and was hand-knead by our best baker", would you pay as much for it as for a freshly baked one? The fact is that at the end of the day the market value of a loaf of bread and other baked goods drops precipitously. Bakers have a range of responses to this, such as reducing prices late in the day, donating to charity kitchens, or even selling stale goods to the elderly who might not notice.

There is of course a relationship between the production cost of a thing and its market value, but it holds only before the thing is produced. The baker will not bake bread if he knows that he cannot sell it at a profit. The cost of production must be lower than the expected future market value (even though sometimes, for specific reasons, goods are produced at a loss for more or less long periods of time). It is a basic principle of economics.

However, once the thing is actually produced, the cost of production becomes irrelevant. Only the present market value counts, and that present value generally does not take into account the past.

If the thing has been made using valuable materials and components, for example gold in an expensive watch, this will of course provide a lower limit to the market value: the recovery value. This is the value of such materials, less the cost of

extracting them. It also, at any moment in time, reflects the present situation, not the past.

There is one class of things that is very much affected by the past, but in a different sense. A two-week old loaf of bread is worth nothing, but a well-preserved one baked a thousand years ago would probably be valuable to some museum. Historical artefacts, antiques and works of art take their present value from the history that is attached to them, and from the people who created and/or used them. These are objects in which history is the main value component. Incidentally, I tend to think that at least part of bitcoin's value is of that nature.

The Credit Conversion Theory of Money

The Credit Conversion Theory of Money is a restatement of Alfred Mitchell-Innes' Credit Theory of Money, with a focus on the process whereby money is created, and on the differences between various monies.

The Credit Theory of Money

The Credit Theory of Money as expressed by Alfred Mitchell-Innes is simply that

> *credit and credit alone is money* *

In Mitchell-Innes's writing the word "credit", which is a claim on a debt, has a number of implicit features. These only become clear after a careful reading of his texts.

The main one of these features is that credit is something that must be generally accepted, it denotes a general purchasing power. Credit also needs to be transferable, negotiable and fungible in order to circulate. That being said, Mitchell- Innes does write about subtle differences between different types of credit. For example, writing about the U.S.A. of 1914, he notes that "there are in any given place many different dollars in use."† What he meant by that will be explained below.

As these concepts are not explained in detail, but are presented as obvious, it makes the word "credit" imbued with a kind of

---

* What is Money?, page 392

† The Credit Theory of Money, page 154

"magical" meaning which it does not necessarily have in other economic literature.

Restating the Credit Theory

In order to be more explicit, we propose to re-state the credit theory as follows:

> *Money is a particular kind of debt: a transferable and generally accepted debt instrument which can be used for repaying any debts*

Equivalently, we could say: "Money is a particular kind of credit: a transferable and generally accepted credit instrument which can be used for repaying any debts." The two statements are equivalent because the holder of money is a creditor, so in his eyes money is a credit. But underlying that credit is of course a debt, as seen from the point of view of the debtor. For now, we will stick with the first version of the definition, simply because it seems a bit clearer - although that is of course subjective.

The term "transferable" is taken to encompass all of the usual characteristics of money that we know from daily experience, including in particular fungibility and negotiability. Lack of precision in the definition reflects the fact that, historically, money was not always as convenient as it is today. For example, a tally may have circulated as a form of money, but there was obviously no mechanism to split a tally in two. As to coins, they were often issued in large denominations not suitable for small transactions.

The term "generally accepted" refers to the community of people within which the money is accepted for payment and for discharging debts. In the case of tokens issued by a tradesman, this community could be a small town. On the other end of the scale, money issued by a government or a central bank is accepted throughout a country or even a group of countries. Today, in the age of the Internet, we can image money used by

groups that are not primarily defined by geography.*

Finally, the term "instrument" is used to suggest a certain degree of standardisation. For example, when the Exchequer raised tallies in medieval England, the nominal amounts were not at all standardised but represented the value of goods and services purchased on a given occasion. However, these tallies were all recognisably Exchequer tallies, and their value was expressed in the standard units of pound / shilling / pence.

The Credit Conversion Theory of Money

While all money is debt, it is obvious that not all debt is money. Some types of debt, that are not money to begin with, are converted to money. This is done via a process which we call "credit conversion", and more specifically "monetary credit conversion." A credit conversion of a debt which does not result in money could then be called "non-monetary credit conversion."

We can therefore define money as follows:

> *Money is a debt which has undergone a monetary credit conversion, thereby making it a transferable and generally accepted debt instrument which can be used for repaying any debts*

This definition in no way contradicts the succinct definition of Mitchell-Innes: "credit and credit alone is money." It simply focuses on one aspect of money that, while being fundamental, is often misunderstood. It is also the aspect that is, on a purely technical level, the key aspect of any monetary system: credit conversion.

---

* we will not deal with questions such as: does the community in questions have to be a certain size? do we require a certain volume of transactions? In order to avoid a sorites paradox, arbitrary values could be defined. Also the concept of "money" could be subdivided into "local money", "regional money", "community money" etc

The role of banks

The importance of banks in our societies is obvious, and the main role of banks is precisely credit conversion, which is why banks are called "credit institutions." By making loans, banks take the credit of individuals and companies and convert it into bank credit, or bank money, for a fee. That is the essential role of banks.

The reason we can speak of bank credit as being money is that, by definition, banks are institutions whose credit is money. Even though the credit of one bank may be valued differently than the credit of another, both are money. And when a bank's credit declines so far that it is no longer money, then it ceases to be a bank.

Other institutions also have a money-equivalent credit, the most prominent of these, but by no means the only one, being the central government. Some of these institutions may even, to some greater or lesser degree, engage in credit conversion. However, the particularity of banks lies in the fact that credit conversion is their main business.

Of course, banks have always had other roles, such as wealth mangers, accountants and payment facilitators. Indeed, in some cases a so-called "private bank" may act almost exclusively as asset manager, with the only credit business being Lombard loans - and even that activity will often be subcontracted to a larger bank. For the sake of clarity, we will use the term "bank" only for institutions that actually engage in monetary credit conversion, independently of their actual denomination.

Debt encompasses government liabilities

Our definition of debt encompasses government liabilities. There is therefore no fundamental difference between money issued by a government, and money issued by other persons or corporations - although there may of course differences defined by law. There is, however, one specificity of govern-

ment money, and that is the nature of the liability. The liability underlying the government's money is to redeem that money via taxation, and to accept said money in payment of taxes.

Credit conversion before the emergence of central banks

Let's go back in time a few centuries and consider a well-respected tradesman in a small town. He will have credit relationships with most of his local suppliers, meaning that he will not need money except to settle balances during the seasonal debt clearing events. To pay some suppliers, and to give change to his customers, he may choose to issue tokens. If he has sufficient credit within his community, his tokens will circulate in the local economy as money, together with all kinds of other coins and tokens.

However, to pay certain out-of-town suppliers, his own credit and tokens are not accepted and he will either use his balance at the local bank, or take out a loan at that bank. He can then pay with a draft on that bank. When taking out a loan, the bank will require a payment in the form of interest: that is one type of "credit conversion fee."

When the tradesman travels to the capital to purchase some specialised piece of equipment, the draft on the local bank is no longer enough. He will have to obtain a draft on a money-center bank from his local bank. For that, he will almost certainly have to pay a fee. That is another type of credit conversion fee.

We have thus seen that a credit conversion fee can be a one-time fee, as when a draft is discounted, or expressed as an interest rate, as when a loan is made.

Mitchell-Innes provides the following example, as seen from the point of view of a banker: *

> " Let us suppose that I take to my banker in, say, New Or-

* The Credit Theory of Money, page 154

> leans, a number of sight drafts of the same nominal value, one on the Sub-Treasury, one on another well-known bank in the city, one on an obscure tradesman in the suburbs, one on a well-known bank in New York, and one on a reputable merchant in Chicago. For the draft on the Sub-Treasury and for that on the bank in the city, my banker will probably give me a credit for exactly the nominal value, but the others will all be exchanged at different prices. For the draft on the New York bank I might get more than the stated amount, for that of the New York merchant, I should probably get less, while for that on the obscure tradesman, my banker would probably give nothing without my endorsement, and even then I should receive less than the nominal amount. All these documents represent different dollars of debt, which the banker buys for whatever he thinks they may be worth to him. The banker whose dollars we buy, estimates all these other dollars in terms of his own. "

This example shows that the "credit conversion fee" can be both positive (a cost) and negative (a revenue).

Monetary credit conversion in developed countries today

Today, credit issued by a modern central bank can be converted to money via a simple bookkeeping operation, or by printing banknotes or minting coins. What this means is that any central bank credit denominated in that central bank's own currency is either already money, or is quasi-money which can be converted to money at any time. This is because in many countries central bank credit is the highest credit available, by definition. *

* this was not always so, cf. for example The Credit Theory of Money, page 153: "In France not so long ago, not only were there many different monetary units, all called by the same name of livre, but these livres – or such of them as were used by the government – were again often classified into forte monnaie and faible monnaie, the government money being faible."

When a bank makes a loan and books a credit in a customer's account, that credit also becomes money. What happens is that the bank customer's debt, which is not money, is being converted to a bank credit, which is money. The same mechanism is applied when a bank discounts a draft on an individual or a corporation.

Now in almost all developed countries, these are the only two ways that money gets created. Note that if the money created ends up in an account of an individual, and the account balance is below the limit for the local depositor guarantee, then for all intents and purposes that money is as good as central bank money. Even if the account is not covered by a deposit guarantee, it is clear that the bank customer expects that the money he holds at his bank is EXACTLY equal to money held in another bank. In other words, if the customer has #1,000 in his account with Bank A, he can transfer that money to an account at Bank B and receive a credit of exactly #1,000 at Bank B, often with no or only very minimal transfer costs.

Compared to former times, the difference in credit rating of banks can therefore no longer be seen in the difference in price of their money. But the difference can still be seen in the level of interest rates they offer for their deposits: a weak bank will have to offer higher interest rates than a strong one. Indeed, spiking deposit rates often precede bank failures.

Money and banking: a short primer

The following is partly based on the text of a presentation made in June 2015 at a crypto-finance workshop held in Luxembourg.

The origin of money

Humans are social animals. We have evolved living in small bands, sometimes fighting, but mostly cooperating and helping each other: there was no choice, it was simply a matter of survival. From the very beginning, life as a human was a constant give and take. As long as the social unit was small enough, this could be done in a completely informal way.

When we became sedentary, the size of our social groups increased. We started to live in villages. Within the extended family, the previously informal give and take remained, but for transactions with others, people began to keep track of their obligations.

People saw the need to measure these obligations more precisely. For this reason, record-keeping was invented. Gradually, a common unit of value, or unit of account, was agreed upon.

In some cases, this unit of value represented valuable goods, for example grain and silver in Mesopotamia and salt in parts of Africa. In other cases, the unit of value was something quite arbitrary. For example, cowrie shells were used in parts of

Africa and in China. Cowries are decorative but have not much practical value.

When we have a unit of value, an obligation can be described precisely. Saying "he owes me two goats and a large jug of wine" is somewhat vague. Every goat is different, and this year's wine was excellent, while next year the wine may taste like vinegar. It is much more precise to say "I owe him 3 shekels of silver", or "he owes me 5 and 3/4 measures of grain."

So once there was a standard unit of value, and (more or less vague) obligations were gradually replaced by (precisely quantified) debt, what we call money emerged naturally. How this happened exactly is not documented. Apart from social convention, religious and political aspects probably played a role. Temples require offerings, rulers needed to tax their subjects and both of these require both instruments of payment and precise accounting.

Ancient temples played important roles in the money system of their time. In ancient Rome, coins were minted in the temple of Juno Moneta, the protectress of funds. And as reported in the New Testament, when Jesus went to overthrow the tables of moneychangers, it was in the Temple of God.

Now to the question of why the unit of account does not appear to matter. Why does a string of cowries do the job as well as a weight of grain or silver?

The first reason is that, at that time, most money was virtual money which existed as accounting credits and debits. For example, about 4,000 years ago in Mesopotamia, most debts were denominated in silver, but silver rarely changed hands. What changed hands was grain, animals, commodities, and various manufactured products. Everything was accounted for in terms of its equivalent in silver or grain, without metal or grain actually changing hands for most transactions.

There is also a second reason, and a very important one at

that, albeit one with considerably less historical evidence. This reason is as follows - in ancient times people saw the economy as circular, as part of a repeating, natural cycle. After one cycle, when the debits and credits were tallied, the result was expected to be more or less zero. If that is the expectation, then the intrinsic value of the unit of account used does not hold much importance. Only small residual payments would have to be made in the currency itself, and ways could be found to avoid even that – for example, an extra service rendered or a gift made. One can understand how this kind of thinking would exist in small, cohesive groups.

Barter did exist, but it was something that was done with strangers with whom having mutual obligations did not make sense as the relationship and proximity was fleeting. When developing mutual trust is not an option, then barter is a reasonable solution. Note that the idea that money somehow originated from barter has been rather definitely discredited.

As for coins, they came much later and were often not used for everyday purchases. For example, Carthage built an empire and an advanced banking system without any coins. When coins were finally issued, they were produced in denominations far too large for everyday transactions. Of course the Carthaginians knew about coins, the Greeks, the Romans and others used them, yet for a long time they did not seem to find them necessary.

The Credit Theory of Money

Mention should now be given to the man who was probably the first to provide a concise and truly modern definition of money. His name is Alfred Mitchell-Innes, a British diplomat who published two essays in *The Banking Law Journal*, in 1913 and 1914. Mitchell-Innes basically concluded:

> "credit and credit alone is money"

Here is a slightly more explicit definition of what money is and

what it means:

> Money is a particular kind of debt instrument: an anonymised, generally accepted debt certificate which can be used for repaying debts.

The acceptance can be tacit, or by force - that force often being government constraint. Note that the idea of general acceptance was implicit in the term "credit" as used by Mitchell-Innes.

The fact that money is debt can easily be seen on any bank's balance sheet, where deposits are listed on the liabilities side.

Money tokens

Physical representations of money, such as banknotes or coins, are known as money tokens. Such tokens generally represent an interest-free loan to issuer. Again, this can easily be seen on any central bank's balance sheet, where banknotes and coins issued appear as liabilities.

With this in mind, when a banknote is burned, a loan is being forgiven. In general, the central bank in question will not know this. It may only be able to account for this as profit once it takes the banknotes out of circulation and finds out that some have not been tendered for exchange.

Given the size of public deficits, banknote burnings on a large scale should be encouraged by all central banks. Strangely, however, burning banknotes is prohibited by law in certain countries, including the United States.

Coins

Coins are particular types of money tokens, in that they have an intrinsic value, which is the market value of the metal from which they are formed, also known as the metal or melt value of the coin. This makes them an interesting hybrid, between (credit)money and a commodity.

If the face value of the coin is significantly higher than its intrinsic value, the coin is worth its face value and is simply money. This is normally the case for any coin being minted. However, the metal content can be considered an insurance, or a put option in case of default or repricing by the issuer. This is why, when coins of different metal values circulate, people will tend to keep those with the highest, and spend those with the lowest metal value. Thus, only the coins with the lowest metal value will tend to circulate, resulting in what is called Gresham's Law, "bad money drives out good."

When the melt value and face value are close to each other, the coin's market value can be slightly higher than either melt or face value - using option pricing theory a theoretical value can be derived. This creates an incentive to hoard, rather than use it for payment at face value.

Finally, if the melt value of the coin is significantly higher than its face value, the coin will, for all practical purposes, be simply a piece of metal, and will cease to function as money. Note that this discussion is mostly irrelevant for small denomination coins: while the metal in some U.S. and Canadian copper pennies is worth more than their face value, it is not considered economical to melt them down.

Apart from that, we should note that old or rare coins often have a numismatic value that can be much higher than either their metal value or, in cases where the coin is still legal tender, the face value.

Gold and precious metals

Since the earliest times, gold and/or silver were used to mint coins. The value of the coins was almost always higher (often much higher) than their metal value. Yet, the more valuable the coin, the higher the metal value usually was. It was a way to mark their value. Luxury watches provide a useful analogy: the casings of very expensive watches are usually made of precious metals, even if the value of that metal only constitutes a few

percent of their overall price.

Gold was always a valuable metal, and often used as a unit of value. Between the 18th and 20th centuries, various countries at various times adopted a "gold standard", putting gold at the center of their monetary system. It is important to note that the gold standard was a modern idea that was attempted only during a rather brief period of our 4,000+ years of monetary history. Even when a gold standard was in force in such countries as the UK or the USA, only a relatively small part of bank money was actually covered by gold - the majority was, as always, credit.

Types of money

Today, there usually is only one legal currency in every country, although there are some countries where secondary currencies play a more or less important role. One such example is the WIR currency in Switzerland. In many countries with weak currencies, stronger currencies such as the U.S. dollar are used alongside the national currency. And at least one sovereign country, East Timor, does not have its own currency.

Historically, there were often multiple monies in circulation. Until modern times, kings and princes, cities, local rulers, monasteries, various institutions, factories, and even shops issued money. Some of this money was generally accepted only in a specific area, sometimes a small one, such as a village or town.

Money cannot be owned

One can own a vehicle, a piece of furniture, an artifact or a plot of land, but one cannot own money. That is because money is ultimately a contract and one cannot own a contract. A holder of money is party to a contractual agreement, which requires trust in the issuer.

Conversely, anything that can be owned cannot be money. One

can own an ounce of gold or a bitcoin without having to trust another person or institution. The only trust required is in the continuing functioning of markets, and, in the case of bitcoin, of the Internet and bitcoin miners.

The word "currency" could be used to specifically identify payment instruments that resemble money, but are not money. Of course, in common usage all this is intermingled, because when buying and selling, people do not care about the nature of the payment instrument, the only thing that matters is its acceptance.

Money requires an issuer

Money always requires an issuer. Implicit to the issuer is the idea of the issuer's obligation.

Let's consider an economy where the unit of value is a shekel of silver – shekel being a unit of weight.

A coin weighing one shekel, and which someone would have stamped with his mark and the mention "1 shekel" would not really be money. Even the fact that this coin might circulate as if it were money, this would still not make it such - because all of its value derives from the metal itself.

Now suppose that the mark was that of a well know silversmith, giving holders of that coin some assurance as to the purity and weight of the coin, and the coin started to circulate at a premium. Then that would have introduced a credit element to this coin, making it slightly money-like. Note that, given the cost of minting, the silversmith would only have issued these coins if he was confident that he could sell them at a premium.

But if a well-known temple issued coins containing only one-tenth of a silver shekel, but with the temple's distinguishing mark and the mention "1 shekel", and if one could at any time go to the temple and buy from it goods for the equivalent of 1 shekel, and these coins found wide acceptance among the

population, then that would indeed be money.

And if a well-known merchant would issue small pieces of leather, stamped with a special mark, and these tokens were accepted as payment in his community, and he would accept these tokens as payment for his goods, that would also be money – although maybe of lesser geographical reach and maybe trading at a discount to the temple's money.

Money creation

In order to create money, the equivalent amount of debt has to be created.

Money creation on a small scale occurs, for example, when a shop, instead of giving legal tender as change, issues the shop's own tokens. As long as these tokens are generally accepted in the local economy, they are money. The tokens represent a debt of the shop. This type of money issuance is, of course, rare nowadays. Today, money creation is mainly done by banks.

The word "creation" is somewhat misleading, because what banks do is to transform specific, illiquid debt into generic, fungible, generally accepted debt, i.e. money. So it would be more correct to say that banks transform, rather than create.

The banks take IOUs of physical persons and corporations, up to a limit they consider prudent, put their stamp of approval on it, and issue money on the back of it. In other words, the bank substitutes its own credit for the IOU issuer's credit.

In order to do this, banks need to know their customers, their business and their capacity to produce useful goods and services. This is the central and indispensable function of banks.

It is important to note that in this system, banks have a relatively passive role. A bank can refuse a loan, but has few instruments to prod a potential borrower into action. The issuance of money is initiated by the borrowers who decide whether

they want to borrow or now. The corporation decides whether to build a new factory or to wait until next year, the consumer decides whether to buy a new car or keep the old one. Of course there is generally virtually insatiable demande for loans from poor credits, as we have seen prior to the sub-prime crisis, but unless banks act recklessly and lower their credit standards, the active party is the borrower, not the bank.

Other function of banks

Money creation is the banking system's main function; it represents the "primary market" of money so to speak.

However, banks also have another function, and that is the record-keeping of balances and transfers in the money system – the "secondary market" of money. That record-keeping function is much more visible to the general public. Most people take out banks loans relatively rarely, but make frequent use of their bank accounts for making payments.

Money destruction

If money gets created by debt issuance, then, logically, it gets destroyed or cancelled when a debt gets repaid.

Revisiting the shop that issued tokens, when a customer comes and pays for his purchase with the shop's own tokens, the debt gets repaid and the money is destroyed. In the hands of the shop owner, his own tokens cease to be money. In the same way, a banknote in the vault of the ECB is not money. It is just a worthless piece of paper, similar to an unsigned contract.

The money destruction in the banking system is a bit harder to pinpoint precisely, because the system is much more complex, but the principle remains simple: When we go to the baker and buy a loaf of bread, we purchase a consumable directly from the producer. The baker may owe money to a bank, part of the proceeds from the sale may go to his employees who will then be able to make a loan payment, etc. We cannot know it exact-

ly, but it is extremely likely that at least part of that payment will eventually be used for repaying a debt, and therefore result in the reduction of the total amount of money in circulation. Of course, when speaking of money in circulation, the inter-bank debits and credits, meaning the nostro and vostro accounts, and equivalent, should not be counted.

When a person sells a used car to another, no money gets destroyed. Money does change hands, but the overall sum of debits and credits in the system does not change. This would be different if the used car was sold by a used car dealer, as the sale price would include the dealer's margin and therefore would probably involve some money cancellation.

When the borrower cannot repay the debt, and defaults, money also gets destroyed.

Money can also be destroyed via debt forgiveness. This was actually a significant feature of the ancient Babylonian financial system, when private debts were cancelled at regular intervals, for example when a new king acceded to the throne.

Another method for money destruction, via recalling coins, will be described below.

Interest rates

In the context of credit money, the interest rate corresponds to a credit conversion fee plus a risk premium. In the standard scenario, an individual or a company take out a bank loan, therewith converting their (lower) credit into bank credit, which we call money. For this they pay a pro rata temporis fee which is called interest.

In the context of a commodity loan, for example a gold loan, the risk premium may be mitigated by the fact that the lender no longer has a storage/insurance fee to pay.

Throughout history, interest rates have generally been positive,

which intuitively makes sense.

The strange question of interest that can never be repaid

One idea that is surprisingly widespread is that in case of positive interest rates, there is no money in the system to pay for the interest, and thus the amount of money must necessarily increase for ever, unless there is a default.

To show that there is no reason why positive interest rates must automatically lead to monetary expansion, it suffices to show a simple example, such as the following:

> *The widget maker*
>
> The widget-maker borrows #100 from the bank at 10% interest
>
> The #100 allow him to buy some materials and live comfortably for a year.
>
> At the end of the year, all the money is spent but he has produced 12 beautiful and useful widgets.
>
> He sells 11 widgets in the market at #10 each, repays his loan from the proceeds and is left with one widget for himself.
>
> Meanwhile the bank, having made a profit, pays a dividend of #10 to its owner who, by the way, had just bought a beautiful and useful widget in the market from the widget maker.
>
> Everyone is happy and the game can start anew….

One can imagine many variations of this scenario, for example with the bank paying interest on its deposits - after all the money spent by the widget-maker would appear as a credit in someone else's account. Note that it is sometimes useful, when constructing such scenarios, to consider the entire banking system as one bank.

What the example demonstrates is that under normal circumstances, the interest can simply be resorbed by human produc-

tivity. The widget-maker has created value, as recognised by the market, that exceeds the principal of his loan plus interest, even leaving something left over for him - his profit margin.

That being said, of course the amount of money in circulation has had the tendency to increase exponentially in the modern era, time and time again, but the reason for this are not positive interest rates.

One reason is that there is a category of borrowers who are not under too much pressure to redeem their debits: governments. We have seen a substantial increase of government debt in developed countries since the 1980s, in addition public debts of emerging economies such as China have also reached very high levels in recent years.

Another reason is the leveraging of the private sector to levels which would have been considered imprudent before. By implicitly guaranteeing "too-big-to-fail" banking and insurance firms, as well as deposit insurance schemes, governments have contributed significantly to this trend. And in China, much of the credit expansion was state-sponsored.

In addition, we have seen trends such as securitisation, which was at the root of the sub-prime crisis, and the emergence of "shadow banking" systems in China.

The Impact of Positive Interest Rates

Positive interest rates can become a source of instability as shown in the scenario following.

The Story of Radu, Gadu and Badu

Radu, Gadu and Badu are the only inhabitants of a small planet with 3 mines, one producing each of red, green and blue. Each inhabitant owns one mine, from which he can extract as many units of colour as necessary, limited only by the amount of work he is willing to put in. Radu, Gadu and Badu each need at least 1 unit of each colour every day, but might from time to time consume

more.

To keep the system fair, they decide to set up an automated clearing system, and also decide that any debit balance will be charged 10% per day, with that interest paid to the creditor. This is intended to serve as an incentive for prompt repayment of debt. Additionally, any of the three who accrues more than 10 units in debt will be obliged to forfeit his mine.

Soon after agreeing to these rules, Gadu and Badu throw a party, during which they consume 2 units of each colour, resulting in both being in debt to Radu by one unit each. Radu, however, continues to consume only 1 unit every day. Realising that the interest due increases quickly, Gadu and Badu plead with Radu to also consume a bit more, in order to counteract some of the outstanding debt. Radu steadfastly refuses.

On the 25th day after the party, both Gadu and Badu have debt exceeding 10 units each and their mines are seized by Radu.

Now that Radu owns all 3 mines, he forces Gadu and Badu to do all the mining, giving them only the bare minimum to survive. He himself takes to consuming prodigious quantities of colour.

Soon enough, Gadu and Badu join together, beat up Radu and make him work all 3 mines alone.

Eventually, Gadu and Badu take pity on Radu, and Badu suggests: "Let's just go back to how it was before, but let's program the clearing system to deduct 10% from all credit and debit balances every day".

And they lived happily ever after.

What this story highlights is one of the sources of tension in the present money system: the sometimes different objectives of the debtor and the creditor. The debtor generally wants to repay his debt as soon as possible. To make this happen, the creditor (or more precisely, the class of all creditors) has to accept the goods and services that the debtor has to offer.

But what if the creditor refuses to consume? The debtor cannot

force the creditor to buy, which is the only regular way to reduce the creditor's credit balance and reduce the debtor's debit balance.

Instead, the creditor may want to keep his credits accumulating, thus creating exactly the kind of unstable situation described in the Radu, Gadu and Badu story.

We end up with a small class of very rich creditors who, simply by not consuming, do not allow the great mass of debtors to discharge their debts. This situation may seem familiar.

Demurrage and negative interest rates

It so happens that negative interest rates do put some pressure on creditors, a pressure which does not exist in environments with positive interest rates. Negative interest rates as we see them in certain countries today do not affect cash, which can still be hoarded. In order to put real pressure on creditors, money demurrage would have to be introduced - a continuous depreciation of all ready money including cash. One of the prominent proponents of demurrage was Silvio Gesell.

Note that in certain parts of Europe, there have been periods in history where cash carried negative interest. In Germany, from around 1130 until 1520, bracteates were commonly used. These coins were called back on a regular basis, often once or twice a year, each time losing 10% to 25% of their value. These coins tended to circulate rapidly and were used as a medium of exchange, not as a store of value.

In France, before state taxation was introduced, kings also regularly depreciated their coins. This was called "muer monnaie", or "crying down" coins. This was accepted by the population, who grumbled only when the king did it too often. Note that merchants mostly used bank money, which was not affected by the king's crying down of his coins.

Abstract units of account

In France, for centuries, there existed in parallel units of account which were stable and independent of the king's money. For example, the banks in Paris had the "livre parisis" (Paris pound) as the unit of account, which was stable over the short term but might change in relation to the "livre tournois" (Tours pound). The king may issue tokens worth 1 livre parisis and later devalue them to 0.70, but this would not affect the livre parisis.

In the early 17th century, the livre tournois became the main accounting currency in France even though no coins were issued. The currency existed purely as an accounting measure.

To illustrate this concept, imagine a group of Europeans stranded on a desert island with no money at all. If they wanted to jump-start an economy, they would probably have no problems using the euro as a unit of account. They would all have a sense of what a euro is. A euro-based economy could thus be created without any actual euros whatsoever.

Store of value or medium of exchange?

Today, money is viewed as a store of value by a majority of the population. For that reason, we live in a world where everyone wants money. That is of course not possible, because for every unit of money in circulation there must be an equivalent debt or obligation. This is quite a fundamental contradiction in our money system.

There is one way in which everyone can have money. We just need to find someone who is willing to make massive amounts of debts, so that we can all be creditors.

In recent years, our governments have apparently agreed to take on this role. By taking on enormous amounts of debt, in order to stave off defaults that are a normal and healthy, if unpleasant, side-effect of the economic cycle, governments have

created enormous amounts of money.

The problem is that, instead of making every one of us a little bit richer, that money has allowed a few to remain, or become, colossally rich, and has not changed much for the majority.

The other problem is that, one way or another, the money crated by the governments will someday have to be repaid by us, meaning it's like the left hand borrowing from the right and feeling rich as a result. Even if a government decides to default on its debts, it is still equivalent to the money being repaid by another group of creditors.

One characteristic of government borrowing is that there is no strong pressure to repay quickly. As mentioned before, a normal borrower tries to repay the loan as quickly as possible, by providing goods and services to the economy. Governments do not feel the same pressure.

One can say that government debt has a tendency of being less "productive" than private debt. Productivity is what allows for debt repayment and thus money destruction. If the debtors as a whole are not productive enough, then money will not be destroyed fast enough and the money mass will grow, which is what we are experiencing today.

Alfred Mitchell-Innes and the Credit Theory of Money

Alfred Mitchell-Innes (1864-1950) was a British diplomat and author. Among others, he served as financial advisor to the King of Siam, was Under-Secretary of State for Finance in Egypt, Counselor at the British Embassy in Washington, D.C. and Minister to Uruguay.

Credit Theory of Money

In 1913, while in Washington, Mitchell-Innes published an essay in *The Banking Law Journal* entitled "What is Money?" That paper seems to have attracted some attention at the time, and J. M. Keynes wrote a review of it in *The Economic Journal* in which, by the way, he calls the credit theory a "familiar fallacy" not even worth discussing, but has kinder words for Mitchell-Innes's historical research. In 1914, Mitchell-Innes published a second paper, "The Credit Theory of Money", which clarifies some of the ideas of the first paper and provides responses to various critics.

In his essays, Mitchell-Innes debunks the metallic theory of money and the idea that barter preceded money, shows that money existed long before coins were introduced and simply states: "credit and credit alone is money."

Mitchell-Innes forgotten and (partly) rediscovered

Despite the fact that Keynes's *Treatise of Money* seems to contain some of Mitchell-Innes's ideas, Keynes apparently never cites him his works. The work of Mitchell-Innes lay mostly forgotten until the mid 1990s.

The two essays from 1913 and 1914 were reprinted in 2004 in *Credit and State Theories of Money* edited by L. Randall Wray. There, Wray writes (page 223):

> "I believe the 1913 and 1914 articles by Innes stand as the best pair of articles on the nature of money written in the twentieth century"

In his bestselling *Debt, the first 5,000 years*, published in 2011, David Graeber writes:

> "By the early decades of the twentieth century, all the pieces were in place to rewrite the history of money. The groundwork was laid by Mitchell-Innes."

After noting that

> " .. our standard account of monetary history is precisely backwards. We did not begin with money, and then eventually develop credit systems. It happened precisely the other way around. What we call virtual money came first."

Graeber concludes:

> "It's not that any economist has ever refuted Mitchell-Innes. They simply ignored him. Textbooks did not change their story - even if all the evidence made clear that the story was simply wrong."

More than a century after Mitchell-Innes published his essays, the belief that barter preceded money is still extremely widespread even among economics graduates.

A thoroughly modern approach

Mitchell-Innes's theory is not complete because it does not deal with interest rates. His articles can (rightly) be criticised for lack of references.

Overall, however, his theory rings true. It is consistent and

forcefully stated. More than a century after their publication, Mitchell-Innes's ideas remain thoroughly modern and entirely relevant to modern monetary theory.

Apart from debunking the story that money originated from barter, Mitchell-Innes showed that money preceded coins, that the physical form of money is of no importance, that the metal content of coins was irrelevant through most of history - even if there was, in general, a relationship between a coin's value and the value of its metal content

He explained that the metallic standard was a modern invention not known in Antiquity or the Middle Ages, that "commerce ... has never had anything to do with the precious metals, and if every piece of gold and silver now in the world were to disappear, it would go on just as before and no other effect would be produced than the loss of so much valuable property."

He saw that by hoarding gold and maintaining a gold standard, central banks were in fact keeping gold at an inflated price, resulting in excessive issuance of money and declining currency.

He sensed, without being able to prove it conclusively, that in modern times the excessive issuance of government money results in a general depreciation of money.

He wrote that "future ages will laugh at their forefathers of the nineteenth and twentieth centuries, who gravely bought gold to imprison in dungeons in the belief that they were thereby obeying a high economic law and increasing the wealth and prosperity of the world."

He understood that "just like any private individual, the government pays by giving acknowledgments of indebtedness" and that government money acquires value by taxation.

Writing about government money, he rejects the idea that "the more coins there are in circulation, the more 'money' there is,

and therefore the richer we are" and writes:

> "The fact, however, is that the more government money there is in circulation, the poorer we are."

He saw that "the clearing houses of old were the great periodical fairs", that the monetary unit is purely imaginary, saw the distinction between monetary unit and money and noted how, even when the king altered the value of his coins, this did not affect prices.

He stated that legal tender laws are not of material importance, and can indeed have unintended negative consequences in the form of banking panics. He did not agree with the widespread belief that there is "some peculiar virtue in a central bank" and wrote as follows about bank reserves:

> "In fact, and this cannot be too clearly and emphatically stated, these reserves of lawful money have ... no more importance than any other of the bank assets."

Writings on criminal justice

Mitchell-Innes also had a long-lasting interest in the criminal justice system. In his essay 'Love and The Law: a study of Oriental justice', published in 1913, he compared the Western and Eastern approaches to justice, focusing in particular on the lack of compassion of the Western system. He formulated a version of Gresham's law of currency as applied to law : "the merciless drive out the merciful".

What is Money?

By A. Mitchell-Innes

The following is a reprint of an essay originally published in the May 1913 issue of *The Banking Law Journal*, pages 377-408. Numbers such as //378// denote page numbers.

The fundamental theories on which the modern science of political economy is based are these:

That under primitive conditions men lived and live by barter;

That as life becomes more complex barter no longer suffices as a method of exchanging commodities, and by common consent one particular commodity is fixed on which is generally acceptable, and which therefore, everyone will take in exchange for the things he produces or the services he renders and which each in turn can equally pass on to others in exchange for whatever he may want;

That this commodity thus becomes a "medium of exchange and measure of value."

That a sale is the exchange of a commodity for this intermediate commodity which is called "money;"

That many different commodities have at various times and places served as this medium of exchange,—cattle, iron, salt, shells, dried cod, tobacco, sugar, nails, etc.;

That gradually the metals, gold, silver, copper, and more especially the first two, came to be regarded as being by their inherent qualities more suitable for this purpose than any other commodities and these metals early became by common consent the only medium of exchange;

That a certain fixed weight of one of these metals of a known fineness became a standard of value, and to guarantee this weight and quality it became incumbent on governments to issue pieces of metal stamped with their peculiar sign, the forging of which was punishable with severe penalties;

That Emperors, Kings, Princes and their advisers vied with each other in the middle ages in swindling the people by debasing their coins, so that those who thought that they were obtaining a certain weight of gold or silver for their produce were, in reality, getting less, and that this situation produced serious evils among which were a depreciation of the value of money and a consequent rise of prices in proportion as the coinage became more and more debased in quality or light in weight;

That to economize the use of the metals and to prevent their constant transport a machinery called "credit" has grown up in modern days, by means of which, instead of handing over a certain weight of metal at each transaction, a promise to do so is given, which under favorable circumstances has the same value as the metal itself. Credit is called a substitute for gold.

So universal is the belief in these theories among economists that they have grown to be considered almost as axioms which hardly require proof, and nothing is more noticeable in economic works than the scant //378// historical evidence on which they rest, and the absence of critical examination of their worth.

Broadly speaking these doctrines may be said to rest on the word of Adam Smith, backed up by a few passages from Homer and Aristotle and the writings of travelers in primitive lands.

But modern research in the domain of commercial history and numismatics, and especially recent discoveries in Babylonia, have brought to light a mass of evidence which was not available to the earlier economists, and in the light of which it may be positively stated that none of these theories rest on a solid basis of historical proof—that in fact they are false.

To start, with Adam Smith's error as to the two most generally quoted instances of the use of commodities as money in modern times, namely that of nails in a Scotch village and that of dried cod in Newfoundland, have already been exposed, the one in Playfair's edition of the Wealth of Nations as long ago as 1805 and the other in an Essay on Currency and Banking by Thomas Smith, published in Philadelphia, in 1832; and it is curious how, in the face of the evidently correct explanation given by those authors, Adam Smith's mistake has been perpetuated.

In the Scotch village the dealers sold materials and food to the nail makers, and bought from them the finished nails the value of which was charged off against the debt.

The use of money was as well known to the fishers who frequented the coasts and banks of Newfoundland as it is to us, but no metal currency was used simply because it was not wanted. In the early days of the Newfoundland fishing industry there was no permanent European population; the fishers went there for the fishing season only, and those who were not fishers were traders who bought the dried fish and sold to the fishers their daily supplies. The latter sold their catch to the traders at the market price in pounds, shillings and pence, and obtained in return a credit on their books, with which they paid for their supplies. Balances due by the traders were paid for by drafts on England or France. A moment's reflection shows that a staple commodity could not be used as money, because ex hypothesi, the medium of exchange is equally receivable by all members of the community. Thus if the fishers paid for their supplies in cod, the traders would equally have to pay for their

cod in cod, an obvious absurdity.

In both these instances in which Adam Smith believes that he has discovered a tangible currency, he has, in fact, merely found—credit.

Then again as regards the various colonial laws, making corn, tobacco, etc., receivable in payment of debt and taxes, these commodities were never a medium of exchange in the economic sense of a commodity, in terms of which the value of all other things is measured. They were to be taken at their market price in money. Nor is there, as far as I know, any warrant for the assumption usually made that the commodities thus made receivable were a general medium of exchange in any sense of the words. The laws merely put into the hands of debtors a method //379// of liberating themselves in case of necessity, in the absence of other more usual means. But it is not to be supposed that such a necessity was of frequent occurrence, except, perhaps in country districts far from a town and without easy means of communication.

The misunderstanding that has arisen on this subject is due to the difficulty of realizing that the use of money does not necessarily imply the physical presence of a metallic currency, nor even the existence of a metallic standard of value. We are so accustomed to a system in which the dollar or the sovereign of a definite weight of gold corresponds to a dollar or a pound of money that we cannot easily believe that there could exist a pound without a sovereign or a dollar without a gold or silver dollar of a definite known weight. But throughout the whole range of history, not only is there no evidence of the existence of a metallic standard of value to which the commercial monetary denomination, the "money of account" as it is usually called, corresponds, but there is overwhelming evidence that there never was a monetary unit which depended on the value of coin or on a weight of metal; that there never was, until quite modern days, any fixed relationship between the monetary unit and any metal; that, in fact, there never was such a

thing as a metallic standard of value. It is impossible within the compass of an article like this to present the voluminous evidence on which this statement is based; all that can be done is to offer a summary of the writer's conclusions drawn from a study extending over several years, referring the reader who wishes to pursue the subject further to the detailed work which the writer hopes before long to publish.

The earliest known coins of the western world are those of ancient Greece, the oldest of which, belonging to the settlements on the coast of Asia Minor, date from the sixth or seventh centuries B.C. Some are of gold, some of silver, others are of bronze, while the oldest of all are of an alloy of the gold and silver, known as electrum. So numerous are the variations in size and weight of these coins that hardly any two are alike, and none bear any indication of value. Many learned writers, Barclay Head, Lenormant, Vazquez Queipo, Babelon, have essayed to classify these coins so as to discover the standard of value of the different Greek States; but the system adopted by each is different; the weights given by them are merely the mean weight calculated from a number of coins, the weights of which more or less approximate to that mean; and there are many coins which cannot be made to fit into any of the systems, while the weights of the supposed fractional coins do not correspond to those of the units in the system to which they are held to belong. As to the electrum coins, which are the oldest coins known to us, their composition varies in the most extraordinary way. While some contain more than 60 per cent of gold, others known to be of the same origin contain more than 60 per cent of silver, and between these extremes, there is every degree of alloy, so that they could not possibly have a fixed intrinsic value. All //380// writers are agreed that the bronze coins of ancient Greece are tokens, the value of which does not depend on their weight.

All that is definitely known is that, while the various Greek States used the same money denominations, stater, drachma, etc., the value of these units differed greatly in different States,

and their relative value was not constant,—in modern parlance the exchange between the different States varied at different periods. Then is, in fact, no historical evidence in ancient Greece on which a theory of a metallic standard can be based.

The ancient coins of Rome, unlike these of Greece, had their distinctive marks of value, and the most striking thing about them is the extreme irregularity of their weight. The oldest coins are the As and its fractions, and there has always been tradition that the As, which was divided into 12 ounces, was originally a pound-weight of copper. But the Roman pound weighed about 327½ grammes and Mommsen, the great historian of the Roman mint, pointed out that not only did none of the extant coins (and there were very many) approach this weight, but that they were besides heavily alloyed with lead; so that even the heaviest of them, which were also the earliest, did not contain more than two-thirds of a pound of copper, while the fractional coins were based on an As still lighter. As early as the third century B.C. the As had fallen to not more than four ounces and by the end of the second century B.C. it weighed no more than half an ounce or less.

Within the last few years a new theory has been developed by Dr. Haeberlin, according to whom the original weight of the As was based not on the Roman pound but on what he calls the "Oscan" pound, weighing only about 273 grammes; and he seeks to prove the theory by taking the average of a large number of coins of the different denominations. He certainly arrives at a mean weight pretty closely approximating his supposed standard, but let us look at the coins from which he obtains his averages. The Asses which ought to weigh a pound, vary in fact from 208 grammes to 312 grammes with every shade of weight between these two extremes. The Half-Asses, which ought to weigh 136.5 grammes weigh from 94 grammes to 173 grammes; the Thirds-of-an-As, which ought to weigh 91 grammes, weigh from 66 grammes to 113 grammes, and the Sixth-of-an-As, weigh from 32 grammes to 62 grammes, and so on for the rest. This, however, is not the only difficulty in

accepting Haeberlin's theory, which is inherently too improbable and rests on too scant historical evidence to be credible. An average standard based on coins showing such wide variations is inconceivable; though coins may and do circulate at a nominal rate greater than their intrinsic value as bullion they cannot circulate at a rate below their intrinsic value. They would, in this case, as later history abundantly proves, be at once melted and used as bullion. And what would be the use of a standard coin-weight which showed such extraordinary variations? What would be the use of a yard-measure which might be sometimes two foot six and sometimes //381// three foot six, at the whim of the maker; or of a pint which might sometimes be but two-thirds of a pint and sometimes a pint and a half?

I have not space here to go into the ingenious hypothesis by which Haeberlin explains the subsequent reduction of the As, at first to one-half the Oscan pound and then gradually sinking as time went on; both of our historians are agreed that from about B.C. 268 the copper coins were mere tokens and that both heavy and light coins circulated indiscriminately.

Up to this time the As had been the fixed monetary unit, however much the coins may have varied; but from now on the situation is complicated by the introduction of several units or "monies of account," which are used at the same time*, the Sesterce or Numus, represented by a silver coin identical in value with the old As Aeris Gravis or Libral As, as it was sometimes called; a new As worth two-fifths of the old As, and the Denarius worth ten of the new Asses and therefore four Libral Asses, and represented, like the Sesterce, by a silver coin.

The coining of the Sesterce was soon abandoned and it only reappeared fitfully much later on as a token coin of bronze or brass. But as the official unit of account it continued till the reign of the Emperor Diocletian in the third century of our era,

* The same phenomenon of more than one monetary unit at the same time is common in later ages.

and we thus get the remarkable fact that for many hundreds of years the unit of account remained unaltered independently of the coinage which passed through many vicissitudes.

As a general rule, though there were exceptions, the silver Denarii remained of good metal until the time of Nero who put about ten per cent of alloy in them. Under subsequent Emperors the amount of alloy constantly increased till the coins were either of copper with a small amount of silver, or were made of a copper core between two thin plates of silver, or were mere copper coins distinguishable from the other copper coins only by the devices stamped on them; but they continued to be called silver.

Whether or not the silver Denarius was intrinsically worth its nominal value or not is a matter of speculation, but fifty years later, according to Mommsen, the legal value of the coin was one-third greater than its real value, and a gold coin was for the first time introduced rated at far above its intrinsic value.

In spite of the degradation of the coin, however, the Denarius, as a money of account, maintained its primitive relation to the Sesterce, and it remained the unit long after the Sesterce had disappeared.

Gold coins were but little used till the time of the Empire, and though, as a general rule, the quality of the metal remained good, the average weight decreased as time went on, and the variations in their weight, even in the same reign, were quite as remarkable as in the others. For example in the reign of Aurelian the gold coins weighed from //382// three-and-a-half grammes to nine grammes, and in that of Gallienus from four-fifths of a gramme to about six-and-three-quarters grammes, without any difference greater than half a gramme between any one coin and that nearest it in weight.

There can hardly be stronger evidence than we here get that the monetary standard was a thing entirely apart from the weight of the coins or the material of which they were com-

posed. These varied constantly, while the money unit remained the same for centuries.

An important thing to remember in reference to Roman money is that, while the debased coins were undoubtedly tokens, there is no question of their representing a certain weight of gold or silver. The public had no right to obtain gold or silver in exchange for the coins. They were all equally legal tender, and it was an offense to refuse them; and there is good historical evidence to show that though the government endeavored to fix an official value for gold, it was only obtainable at a premium.

The coins of ancient Gaul and Britain are very various both in types and in composition, and as they were modelled on the coins in circulation in Greece, Sicily and Spain, it may be presumed that they were issued by foreign, probably Jewish, merchants, though some appear to have been issued by tribal chieftains. Anyhow, there was no metallic standard and though many of the coins are classed by collectors as gold or silver, owing to their being imitated from foreign gold or silver coins, the so-called gold coins, more often than not, contain but a small proportion of gold, and the silver coins but little silver. Gold, silver, lead and tin all enter into their composition. None of them bear any mark of value, so that their classification is pure guess-work, and there can be no reasonable doubt but that they were tokens.

Under the Frankish Kings, who reigned for three hundred years (A.D. 457-751), the use of coins was much developed, and they are of great variety both as to type and alloy. The monetary unit was the Sol or Sou, and it is generally held that the coins represented either the Sou or the Triens, the third part of a Sou, though, for the purposes of accounts the Sou was divided into twelve Denarii. They are of all shades of alloy of gold with silver, from almost pure gold to almost pure silver, while some of the silver coins bear traces of gilding. They were issued by the kings themselves or various of their administrators, by

ecclesiastical institutions, by the administrators of towns, castles, camps, or by merchants, bankers, jewellers, etc. There was, in fact, during the whole of this period, complete liberty of issuing coins without any form of official supervision. Throughout this time there was not a single law on the currency, and yet we do not hear of any confusion arising out of this liberty.

There can be no doubt that all the coins were tokens and that the weight or composition was not regarded as a matter of importance. What was important was the name or distinguishing mark of the issuer, which is never absent.

//383// I have made this rapid survey of early coinages to show that from the beginning of the rise of the art of coining metal, there is no evidence of a metallic standard of value, but later history, especially that of France up to the Revolution, demonstrates with such singular clearness the fact that no such standard ever existed, that it may be said without exaggeration that no scientific theory has ever been put forward which was more completely lacking in foundation. If, in this article, I confine myself almost exclusively to French history, it is not that other histories contain anything which could disprove my contention,—indeed all that is known to me of English, German, Italian, Mohammedan and Chinese history amply support it,—but the characteristic phenomena of the monetary situation are strongly marked in France, and the old records contain more abundant evidence than seems to be the case in other countries. Moreover, French historians have devoted more attention to this branch of history than, so far as I know, those of other countries. We thus get from French history a peculiarly clear and connected account of the monetary unit and its connection with commerce on the one hand and the coinage on the other. But the principles of money and the methods of commerce are identical the world over, and whatever history we choose for our study, we shall be carried to the same conclusions.

The modern monetary history of France may be held to date

from the accession of the Carolingian dynasty at the end of the eighth century. The Sou and the Denarius or Denier its twelfth part, continued to be used for money computation, and there was added a larger denomination, the Livre, divided into twenty Sous, which became the highest unit, and these denominations subsisted right up to the Revolution in 1879. The English pound, divided into twenty shillings and 240 pence corresponds to the Livre and its divisions, from which the British system seems to be derived.

Le Blanc, the seventeenth century historian of the French coinage avers, and later authorities have followed him, that the livre of money was originally a pound-weight of silver, just as English historians have maintained that the English money pound was a pound of silver. He supports his contention by a few quotations, which do not necessarily bear the meaning he gives them, and there is no direct evidence in favor of the statement. In the first place there never was a coin equivalent to a livre, nor till long after Carolingian times was there one equivalent to a sou*. The only Royal coin at that time, so far as we know, was the denier, and its value, if it had a fixed value, is unknown. The word denier, when applied to coin, just as the English penny, frequently means merely a coin in general, without reference to its value, and coins of many different values were called by these names. Moreover, the deniers of that time vary in weight and to some extent in alloy, and we //384// know positively from a contemporary document that the term livre as applied to a commercial weight, was not identified with any single weight but was merely the name of a unit which varied in different communities. The fact is that the wish to prove the identity between a livre of money and a livre of weight is father to the thought. We know nothing on the subject, and when some time later we do obtain a certain knowledge, the livre and the pound of money were by no means the equivalent of a livre or a pound weight of Silver. What we do know for

* The Gras Tournois of the thirteenth century. It did not, however, long remain of the value of a sou.

certain is that the Sol and the Denier in France and the Shilling and the Penny in England were the units of account long before the Livre and the Pound came into use, and could not have been related to a weight of silver.

There are only two things which we know for certain about the Carolingian coins. The first is that the coinage brought a profit to the issuer. When a king granted a charter to one of his vassals to mint coins, it is expressly stated that he is granted that right with the profits and emoluments arising therefrom. The second thing is that there was considerable difficulty at different times in getting the public to accept the coins, and one of the kings devised a punishment to fit the crime of refusing one of his coins. The coin which had been refused was heated red-hot and pressed onto the forehead of the culprit, "the veins being uninjured so that the man shall not perish, but shall show his punishment to those who see him." There can be no profit from minting coins of their full value in metal, but rather a loss, and it is impossible to think that such disagreeable punishments would have been necessary to force the public to accept such coins, so that it is practically certain that they must have been below their face value and therefore were tokens, just as were those of earlier days. It must be said, however, that there is evidence to show that the kings of this dynasty were careful both of the weight and the purity of their coins, and this fact has given color to the theory that their value depended on their weight and purity. We find, however, the same pride of accuracy with the Roman mints; and also in later days when the coinage was of base metal, the directions to the masters of the mints as to the weight, alloy and design were just as careful, although the value of the coin could not thereby be affected. Accuracy was important more to enable the public to distinguish between a true and a counterfeit coin than for any other reason.

From the time of the rise of the Capetian dynasty in A.D. 987, our knowledge of the coinage and of other methods employed in making payments becomes constantly clearer. The research-

es of modern French historians have put into our possession a wealth of information, the knowledge of which is absolutely essential to a proper understanding of monetary problems, but which has unfortunately been ignored by economists, with the result that their statements are based on a false view of the historical facts, and it is only by a distortion of those facts that the belief in the existence of a metallic standard has been possible.

//385// Throughout the feudal period the right of coinage belonged not alone to the king but was also an appanage of feudal overlordship, so that in France there were beside the royal monies, eighty different coinages, issued by barons and ecclesiastics, each entirely independent of the other, and differing as to weights, denominations, alloys and types. There were, at the same time, more than twenty different monetary systems. Each system had as its unit the livre, with its subdivisions, the sol and the denier, but the value of the livre varied in different parts of the country and each different livre had its distinguishing title, such as livre parisis, livre tournois, livre estevenante, etc. And not only did the value of each one of these twenty or more livres differ from all the others, but the relationship between them varied from time to time. Thus the livre de tern was in the first half of the thirteenth century worth approximately the same as the livre tournois; but in 1265 it was worth 1.4 of the tournois, in 1409 it was worth 1.5 of a tournois, and from 1531 till its disappearance, it was worth two tournois. At the beginning of the thirteenth century the livre tournois was worth 0.68 of a livre parisis, while fifty years later it was worth 0.8 of a parisis; i.e., five tournois equalled four parisis, at which rate they appear to have remained fixed. These two units were both in common use in official accounts.

From the time of Hugues Capet down to that of Louis XIV (1638) almost the entire coinage was of base metal containing for the most part less than one-half of silver, and for at least two centuries previous to the accession of Saint Louis in A. D. 1226, there was probably not a coin of good silver in the whole kingdom.

We now come to the most characteristic feature of the finance or feudal France and the one which has apparently given rise to the unfounded accusations of historians regarding the debasement of the coinage. The coins were not marked with a face value, and were known by various names, such as Gros Tournois, Blanc à la Couronne, Petit Parisis, etc. They were issued at arbitrary values, and when the king was in want of money, he "mua sa monnaie," as the phrase was, that is to say, he decreed a reduction of the nominal value of the coins. This was a perfectly well recognized method of taxation acquiesced in by the people, who only complained when the process was repeated too often, just as they complained of any other system of taxation which the king abused. How this system of taxation worked will be explained later on. The important thing to bear in mind for the present is the fact—abundantly proved by modern researches—that the alterations in the value of the coins did not affect prices.

Some kings, especially Philippe le Bel and Jean le Bon, whose constant wars kept their treasuries permanently depleted, were perpetually "crying down" the coinage in this way and issuing new coins of different types, which in their turn were cried down, till the system became a serious abuse. Under these circumstances the coins had no stable value, and they were bought and sold at market prices which sometimes //386// fluctuated daily, and generally with great frequency. The coins were always issued at a nominal value in excess of their intrinsic value, and the amount of the excess constantly varied. The nominal value of the gold coins bore no fixed ratio to that of the silver coins, so that historians who have tried to calculate the ratio subsisting between gold and silver have been led to surprising results; sometimes the ratio being 14 or 15 to 1 or more, and at other times the value of the gold apparently being hardly if at all superior to that of silver.

The fact is that the official values were purely arbitrary and had nothing to do with the intrinsic value of the coins. Indeed when the kings desired to reduce their coins to the least

possible nominal value they issued edicts that they should only be taken at their bullion value. At times there were so many edicts in force referring to changes in the value of the coins, that none but an expert could tell what the values of the various coins of different issues were, and they became a highly speculative commodity. The monetary units, the livre, sol and denier, are perfectly distinct from the coins and the variations in the value of the latter did not affect the former, though, as will be seen, the circumstances which led up to the abuse of the system of "mutations" caused the depreciation of the monetary unit.

But the general idea that the kings wilfully debased their coinage, in the sense of reducing their weight and fineness is without foundation. On the contrary towards the end of the thirteenth century, the feeling grew up that financial stability depended somehow on the uniformity of the coinage, and this idea took firm root after the publication of a treatise by one Nicole Oresme (famous in his time), written to prove the importance of a properly adjusted system of coinage issued if not at its intrinsic value, at least at a rate not greatly exceeding that value, the gold and silver coins each in their proper ratio; and he attached especial importance to their maintenance at a fixed price.

The reign of Saint Louis (1226-1270), a wise and prudent financier, had been a time of great prosperity, and amid the trouble of succeeding reigns, the purchasing power of money decreased with extraordinary rapidity. The money had, as people said, become "faible," and they clamored for the "forte monnaie" of the regretted Saint Louis. The price of silver as paid by the mints, rose greatly, and with every new issue of money the coins had to be rated higher than before; and the Advisers of the Kings, influenced, no doubt, by the teaching of Oresme, believed that in the rise of the price of silver lay the real secret of the rise of prices in general. When, therefore, the prevailing distress could no longer be ignored, attempts were made from time to time to bring back "forte monnaie," by

officially reducing the price of silver and by issuing new coins at a lower rating compared with the amount of silver in them, and by lowering the nominal value of the existing coins in like proportion.

But prices still moved upwards, and a "cours volontaire," a voluntary //387// rating, was given by the public to the coins, above their official value. In vain Kings expressed their royal displeasure in edicts which declared that they had re-introduced "forte monnaie" and in which they peremptorily commanded that prices in the markets should be reduced and that their coins should only circulate at their official value. The disobedient merchants were threatened with severe penalties; but the more the kings threatened, the worse became the confusion. The markets were deserted.

Impotent to carry out their well-meant but mistaken measures, the kings had to cancel their edicts, or to acquiesce in their remaining a dead letter.

The most famous of these attempts to return to "forte monnaie," by means of a reduction of the price of silver, was that introduced by Charles the Fifth, the pupil in financial matters, of Nicole Oresme. With the most praiseworthy obstinacy he stuck to his point, persuaded that he could force the recalcitrant metals to return to their old prices. As the coins disappeared from circulation, owing to their bullion value being higher than their nominal value, the king manfully sacrificed his silver plate to the mint as well as that of his subjects, and persuaded the Pope to excommunicate the neighboring princes who counterfeited his coins, or at least manufactured coins of less value for circulation in France. He kept up the struggle for the sixteen years of his reign, but the attempt was a failure and was abandoned at his death amid the rejoicing of the people. It is a curious* fact that it was generally the attempts at reform of the currency

* Curious that is to say, to those who hold to the metallic theory of money. In fact it is quite simple, though I have not here space to explain it.

that raised the greatest protests of the people. Indeed one such attempt was the cause of the outbreak of a serious revolt in Paris, which had to be suppressed with great rigor.

The system of wilful "mutations" of the money, for the purpose of taxation, was not confined to France, but was common throughout Germany, while the other phenomena which we meet with in the French currency are present in all the great commercial countries and cities. The issue of coins at an arbitrary value above their intrinsic value; the want of stability in their value; the strenuous endeavors of the governments to prevent by law the rise of the price of the precious metals and to stop the people from giving a price of their own to the coins higher or lower than those fixed by the government; the failure of these attempts; the endeavor to prevent the circulation of foreign coins lighter for their value than the local money; the belief that there was some secret evil agency at work to confound the good intentions of the government and to cause the mysterious disappearance of the good coins issued by the government, so that there was always a dearth of money; the futile search for the evil doers, and equally futile watch kept on the ports to prevent the export of coins or bullion, —the history not only of France, but of England, the German States, Hamburg, Amsterdam and Venice //388// is full of such incidents. In all these countries and cities, the monetary unit was distinct from the coins, (even when they bore the same name,) and the latter varied in terms of the former independently of any legislation, in accordance possibly with the apparently ceaseless fluctuations in the price of the precious metals. In Amsterdam and in Hamburg in the eighteenth century, an exchange list was published at short intervals, and affixed in the Bourse, giving the current value of the coins in circulation in the City, both foreign and domestic, in terms of the monetary unit—the Florin in Amsterdam and the Thaler in Hamburg, both of them purely imaginary units. The value of these coins fluctuated almost daily, nor did their value depend solely on their weight and fineness. Coins of similar weight and fineness circulated at different prices, according to the country to which they

belonged.

It must be remembered that, until recent years there was no idea that in France or England there was one standard coin, all the others being subsidiary tokens representing a certain part of the standard. Quite the contrary; all were equally good or bad, all were equally good tender according to the law. Just as in Roman times, there was no obligation to give gold or silver for the over-valued coins, and none was ever given. The only reason why the intrinsic value of some of the coins ever equalled or exceeded their nominal value was because of the constant rise of the price of precious metals, or (what produced the same result) the continuous fall in the value of the monetary unit.

Though it would be hard to imagine a greater contrast than that between the condition of feudal France and that of North America in the eighteenth century, yet it is interesting to observe the close analogy in some respects between the monetary situation in olden France and that of the new world in colonial days and in the early days of the United States. There the Pound behaved just as the Livre had done in France. It was the monetary unit in all the colonies and subsequently for a time in all the States, but its value was not everywhere the same. Thus in 1782 the silver dollar was worth five shillings in Georgia, eight shillings in New York, six shillings in the New England States, and thirty-two shillings and sixpence in South Carolina.

But there were no coins bearing a fixed relation to any of these various pounds and, in consequence, when Alexander Hamilton wrote his report on the establishment of a mint, he declared that, while it was easy to state what was the unit of account, it was “not equally easy to pronounce what is considered as the unit in the coins.” There being, as he said, no formal regulation on the point it could only be inferred from usage; and he came to the conclusion that on the whole the coin best entitled to the character of the unit was the Spanish dollar. But the arguments which he gave in favor of the dollar

lost, as he himself said, much of their weight owing to the fact that "that species of coin has never had any settled or standard value according to weight or fineness; but has been permitted to circulate by tale without regard to either." Embarrassed by this //389// circumstance, and finding in fact that gold was the less fluctuating metal of the two, Hamilton had difficulty in deciding to which of the precious metals the monetary unit of the United States should in future be "annexed" and he finally concluded to give the preference to neither, but to establish a bi-metallic system, which, however, in practice was found to be unsuccessful.

One of the popular fallacies in connection with commerce is that in modern days a money-saving device has been introduced called credit and that, before this device was known, all purchases were paid for in cash, in other words in coins. A careful investigation shows that the precise reverse is true. In olden days coins played a far smaller part in commerce than they do to-day. Indeed so small was the quantity of coins, that they did not even suffice for the needs of the Royal household and estates which regularly used tokens of various kinds for the purpose of making small payments. So unimportant indeed was the coinage that sometimes Kings did not hesitate to call it all in for re-minting and re-issue and still commerce went on just the same.

The modern practice of selling coins to the public seems to have been quite unknown in old days. The metal was bought by the Mint and the coins were issued by the King in payment of the expenses of the Government, largely I gather from contemporary documents, for the payment of the King's soldiers. One of the most difficult things to understand is the extraordinary differences in the price which was paid for the precious metal by the French Mint, even on the same day. The fact that the price often, if not always, bore no relation to the market value of the metal has been remarked on by writers; but there is nothing in any record to show on what it was based. The probable explanation is that the purchase and sale of gold and silver

was in the hands of a very few great bankers who were large creditors of the Treasury and the purchase of the metals by the Mint involved a financial transaction by which part payment of the debt was made in the guise of an exorbitant price for the metal.

From long before the fourteenth century in England and France (and I think, in all countries), there were in common use large quantities of private metal tokens against which the governments made constant war with little success. It was not indeed till well on in the nineteenth century that their use was suppressed in England and the United States. We are so accustomed to our present system of a government monopoly of coinage that we have come to regard it as one of the prime functions of government, and we firmly hold the doctrine that some catastrophe would occur if this monopoly were not maintained. History does not bear out this contention; and the reasons which led the medieval governments to make repeated attempts to establish their monopoly was in France at any rate not altogether parental care for the good of their subjects, but partly because they hoped by suppressing private tokens which were convenient and seemed generally (though not always) to have enjoyed the full confidence of the public, that the people would be forced //390// by the necessity of having some instrument for retail commerce to make more general use of the government coins which from frequent "mutations" were not always popular, and partly because it was believed that the circulation of a large quantity of base tokens somehow tended to raise the price of the precious metals, or rather, perhaps, to lower the value of the coinage; just as economists to-day teach that the value of our token coinage is only maintained by strictly limiting its output.

The reason why in modern days the use of private tokens has disappeared is more due to natural causes, than to the more efficient enforcement of the law. Owing to improved finance coins have acquired a stability they used not to have, and the public has come to have confidence in them. Owing to the

enormous growth of government initiative these tokens have come to have a circulation which no private tokens could enjoy, and they have thus supplanted the latter in the public estimation, and those who want tokens for small amounts are content to buy them from the government.

Now if it is true that coins had no stable value, that for centuries at a time there was no gold or silver coinage, but only coins of base metal of various alloys, that changes in the coinage did not affect prices, that the coinage never played any considerable part in commerce, that the monetary unit was distinct from the coinage and that the price of gold and silver fluctuated constantly in terms of that unit (and these propositions are so abundantly proved by historical evidence that there is no doubt of their truth), then it is clear that the precious metals could not have been a standard of value nor could they have been the medium of exchange. That is to say that the theory that a sale is the exchange of a commodity for a definite weight of a universally acceptable metal will not bear investigation, and we must seek for another explanation of the nature of a sale and purchase and of the nature of money, which undoubtedly is the thing for which the commodities are exchanged.

If we assume that in pre-historic ages man lived by barter, what is the development that would naturally have taken place, whereby he grew to his present knowledge of the methods of commerce? The situation is thus explained by Adam Smith:

> "But when the division of labor first began to take place, this power of exchanging must frequently have been very much clogged and embarrassed in its operations. One man, we shall suppose, has more of a certain commodity than he himself has occasion for, while another has less. The former consequently would be glad to dispose of, and the latter to purchase, a part of this superfluity. But if this latter should chance to have nothing that the former stands in need of, no exchange can be made between them. The butcher has more meat in his shop than he himself can consume, and

> the brewer and the baker would each of them be willing to purchase a part of it. But they have nothing to offer in exchange, except the different productions of their respective trades, and the butcher is already provided with all the bread and beer which he has immediate occasion for. No change can in this case be made between them. He cannot offer to be their merchant nor they his customers; and they are //391// all of them thus mutually less serviceable to one another. In order to avoid the inconveniency of such situations, every prudent man in every period of society, after the first establishment of the division of labor, must naturally have endeavored to manage his affairs in such a manner, as to have at all times by him, besides the peculiar produce of his own industry, a certain quantity of some one commodity or other, such as he imagined that few people would be likely to refuse in exchange for the produce of their industry."
>
> "Many different commodities, it is probable, were successively both thought of and employed for this purpose.... In all countries, however, men seem at last to have been determined by irresistible reasons to give the preference, for this employment, to metals above every other commodity."

Adam Smith's position depends on the truth of the proposition that, if the baker or the brewer wants meat from the butcher, but has (the latter being sufficiently provided with bread and beer) nothing to offer in exchange, no exchange can be made between them. If this were true, the doctrine of a medium of exchange would, perhaps, be correct. But is it true?

Assuming the baker and the brewer to be honest men, and honesty is no modern virtue, the butcher could take from them an acknowledgment that they had bought from him so much meat, and all we have to assume is that the community would recognize the obligation of the baker and the brewer to redeem these acknowledgments in bread or beer at the relative values current in the village market, whenever they might be

presented to them, and we at once have a good and sufficient currency. A sale, according to this theory, is not the exchange of a commodity for some intermediate commodity called the "medium of exchange," but the exchange of a commodity for a credit.

There is absolutely no reason for assuming the existence of so clumsy a device as a medium of exchange when so simple a system would do all that was required. What we have to prove is not a strange general agreement to accept gold and silver, but a general sense of the sanctity of an obligation. In other words, the present theory is based on the antiquity of the law of debt.

We are here fortunately on solid historical ground. From the earliest days of which we have historical records, we are in the presence of a law of debt, and when we shall find, as we surely shall, records of ages still earlier than that of the great king Hamurabi, who compiled his code of the laws of Babylonia 2000 years B.C., we shall, I doubt not, still find traces of the same law. The sanctity of an obligation is, indeed, the foundation of all societies not only in all times, but at all stages of civilization; and the idea that to those whom we are accustomed to call savages, credit is unknown and only barter is used, is without foundation. From the merchant of China to the Redskin of America; from the Arab of the desert to the Hottentot of South Africa or the Maori of New Zealand, debts and credits are equally familiar to all, and the breaking of the pledged word, or the refusal to carry put an obligation is held equally disgraceful.

//392// It is here necessary to explain the primitive and the only true commercial or economic meaning of the word "credit." It is simply the correlative of debt. What A owes to B is A's debt to B and B's credit on A. A is B's debtor and B is A's creditor. The words "credit" and "debt" express a legal relationship between two parties, and they express the same legal relationship seen from two opposite sides. A will speak of this relationship as a debt, while B will speak of it as a credit. As I shall have frequent

occasion to use these two words, it is necessary that the reader should familiarize himself with this conception which, though simple enough to the banker or financial expert, is apt to be confusing to the ordinary reader, owing to the many derivative meanings which are associated with the word "credit." Whether, therefore, in the following pages, the word credit or debt is used, the thing spoken of is precisely the same in both cases, the one or the other word being used according as the situation is being looked at from the point of view of the creditor or of the debtor.

A first class credit is the most valuable kind of property. Having no corporeal existence, it has no weight and takes no room. It can easily be transferred, often without any formality whatever. It is movable at will from place to place by a simple order with nothing but the cost of a letter or a telegram. It can be immediately used to supply any material want, and it can be guarded against destruction and theft at little expense. It is the most easily handled of all forms of property and is one of the most permanent. It lives with the debtor and shares his fortunes, and when he dies, it passes to the heirs of his estate. As long as the estate exists, the obligation continues,* and under favorable circumstances and in a healthy state of commerce there seems to be no reason why it should ever suffer deterioration.

Credit is the purchasing power so often mentioned in economic works as being one of the principal attributes of money, and, as I shall try to show, credit and credit alone is money. Credit and not gold or silver is the one property which all men seek, the acquisition of which is the aim and object of all commerce.

The word "credit" is generally technically defined as being the right to demand and sue for payment of a debt, and this no doubt is the legal aspect of a credit today; while we are so ac-

* In modern days statutes of limitation have been passed subjecting the permanence of credits to certain limitations. But they do not affect the principle. On the contrary, they confirm it.

customed to paying a multitude of small purchases in coin that we have come to adopt the idea, fostered by the laws of legal tender, that the right to payment of a debt means the right to payment in coin or its equivalent. And further, owing to our modern systems of coinage, we have been led to the notion that payment in coin means payment in a certain weight of gold.

Before we can understand the principles of commerce we must wholly divest our minds of this false idea. The root meaning of the verb "to pay" is that of "to appease," "to pacify," "to satisfy," and while a //393// debtor must be in a position to satisfy his creditor, the really important characteristic of a credit is not the right which it gives to "payment" of a debt, but the right that it confers on the holder to liberate himself from debt by its means—a right recognized by all societies. By buying we become debtors and by selling we become creditors, and being all both buyers and sellers we are all debtors and creditors. As debtor we can compel our creditor to cancel our obligation to him by handing to him his own acknowledgment of a debt to an equivalent amount which he, in his turn, has incurred. For example, A having bought goods from B to the value of $100, is B's debtor for that amount. A can rid himself of his obligation to B by selling to C goods of an equivalent value and taking from him in payment an acknowledgment of debt which he (C, that is to say) has received from B. By presenting this acknowledgment to B, A can compel him to cancel the debt due to him. A has used the credit which he has procured to release himself from his debt. It is his privilege.

This is the primitive law of commerce. The constant creation of credits and debts, and their extinction by being cancelled against one another, forms the whole mechanism of commerce and it is so simple that there is no one who cannot understand it.

Credit and debt have nothing and never have had anything to do with gold and silver. There is not and there never has been, so far as I am aware, a law compelling a debtor to pay

his debt in gold or silver, or in any other commodity; nor so far as I know, has there ever been a law compelling a creditor to receive payment of a debt in gold or silver bullion, and the instances in colonial days of legislation compelling creditors to accept payment in tobacco and other commodities were exceptional and due to the stress of peculiar circumstances. Legislatures may of course, and do, use their sovereign power to prescribe a particular method by which debts may be paid, but we must be chary of accepting statute laws on currency, coinage or legal tender, as illustrations of the principles of commerce.

The value of a credit depends not on the existence of any gold or silver or other property behind it, but solely on the "solvency" of the debtor, and that depends solely on whether, when the debt becomes due, he in his turn has sufficient credits on others to set off against his debts. If the debtor neither possesses nor can acquire credits which can be offset against his debts, then the possession of those debts is of no value to the creditors who own them. It is by selling, I repeat, and by selling alone—whether it be by the sale of property or the sale of the use of our talents or of our land—that we acquire the credits by which we liberate ourselves from debt, and it is by his selling power that a prudent banker estimates his client's value as a debtor.

Debts due at a certain moment can only be cancelled by being offset against credits which become available at that moment; that is to say that a creditor cannot be compelled to accept in payment of a debt due to him an acknowledgment of indebtedness which he himself has given //394// and which only falls due at a later time. Hence it follows that a man is only solvent if he has immediately available credits at least equal to the amount of his debts immediately due and presented for payment. If, therefore, the sum of his immediate debts exceeds the sum of his immediate credits, the real value of these debts to his creditors will fall to an amount which will make them equal to the amount of his credits. This is one of the most important

principles of commerce.

Another important point to remember is that when a seller has delivered the commodity bought and has accepted an acknowledgment of debt from the purchaser, the transaction is complete, the payment of the purchase is final; and the new relationship which arises between the seller and the purchaser, the creditor and the debtor, is distinct from the sale and purchase.

For many centuries, how many we do not know, the principal instrument of commerce was neither the coin nor the private token, but the tally,* (Lat. talea. Fr. taille. Ger. Kerbholz), a stick of squared hazel-wood, notched in a certain manner to indicate the amount of the purchase or debt. The name of the debtor and the date of the transaction were written on two opposite sides of the stick, which was then split down the middle in such a way that the notches were cut in half, and the name and date appeared on both pieces of the tally. The split was stopped by a cross-cut about an inch from the base of the stick, so that one of the pieces was shorter than the other. One piece, called the "stock," † was issued to the seller or creditor, while the other, called the "stub" or "counter-stock," was kept by the buyer or debtor. Both halves were thus a complete record of the credit and debt and the debtor was protected by his stub from the fraudulent imitation of or tampering with his tally.

The labors of modern archaeologists have brought to light numbers of objects of extreme antiquity, which may with confidence be pronounced to be ancient tallies, or instruments of a precisely similar nature; so that we can hardly doubt that commerce from the most primitive times was carried on by means of credit, and not with any "medium of exchange."

In the treasure hoards of Italy there have been found many

* Their use was not entirely abandoned till the beginning of the nineteenth century.

† Hence the modern term "stock" as meaning "capital."

pieces of copper generally heavily alloyed with iron. The earliest of these, which date from between 1000 and 2000 years B.C., a thousand years before the introduction of coins, are called aes rude and are either shapeless ingots or are cast into circular discs or oblong cakes. The later pieces, called aes signatum, are all cast into cakes or tablets and bear various devices. These pieces of metal are known to have been used as money, and their use was continued some considerable time after the introduction of coins.

The characteristic thing about the aes rude and the aes signatum is that, with rare exceptions, all of the pieces have been purposely broken at the time of manufacture while the metal was still hot and brittle or //395// "short," as it is technically called. A chisel was placed on the metal and struck a light blow. The chisel was then removed and the metal was easily broken through with a hammer blow, one piece being usually much smaller than the other. There can be no reasonable doubt but that these were ancient tallies, the broken metal affording the debtor the same protection as did the split hazel stick in later days.

The condition of the early Roman coinage shows that the practice of breaking off a piece of the coins— thus amply proving their token character—was common down to the time when the casting of the coins was superseded by the more perfect method of striking them.

In Taranto, the ancient Greek colony of Tarentum, a hoard has lately been found in which were a number of cakes of silver (whether pure or base metal is not stated), stamped with a mark similar to that found on early Greek coins. All of them have a piece purposely broken off. There were also found thin discs, with pieces cut or torn off so as to leave an irregularly serrated edge.

In hoards in Germany a few bars of an alloy of silver have been found, of the same age as the Italian copper cakes. While some

of these are whole, others have a piece hacked off one end.

Among recent discoveries in ancient Babylonia, far the most common commercial documents which have been found are what are called "contract tablets" or "shubati tablets"—the word shubati, which is present on nearly all of them, meaning "received." These tablets, the oldest of which were in use from 2000 to 3000 years B.C., are of baked or sun-dried clay, resembling in shape and size the ordinary cake of toilet soap, and very similar to the Italian copper cakes. The greater number are simple records of transactions in terms of "she," which is understood by archaeologists to be grain of some sort.

They bear the following indications:—

The quantity of grain.

The word "shubati" or received.

The name of the person from whom received.

The name of the person by whom received.

The date.

The seal of the receiver or, when the King is the receiver, that of his "scribe" or "servant."

From the frequency with which these tablets have been met with, from the durability of the material of which they are made, from the care with which they were preserved in temples which are known to have served as banks, and more especially from the nature of the inscriptions, it may be judged that they correspond to the medieval tally and to the modern bill of exchange; that is to say, that they are simple acknowledgments of indebtedness given to the seller by the buyer in payment of a purchase, and that they were the common instrument of commerce.

But perhaps a still more convincing proof of their nature is

to be found in the fact that some of the tablets are entirely enclosed in tight-fitting clay envelopes or "cases," as they are called, which have to be broken off //396// before the tablet itself can be inspected. On these "case tablets," as they are called, the inscription is found on the case, and it is repeated on the inclosed tablet, with two notable omissions. The name and seal of the receiver are not found inside. It is self-evident that the repetition of the essential features of the transaction on the inner tablet which could only be touched by destroying the case, was, just as in the other instances, for the protection of the debtor against the danger of his tablet being fraudulently tampered with, if it fell into dishonest hands. The particular significance of these "case tablets" lies in the fact that they were obviously not intended as mere records to remain in the possession of the debtor, but that they were signed and sealed documents, and were issued to the creditor, and no doubt passed from hand to hand like tallies and bills of exchange. When the debt was paid, we are told that it was customary to break the tablet.

We know, of course, hardly anything about the commerce of those far-off days, but what we do know is that great commerce was carried on and that the transfer of credit from hand to hand and from place to place was as well known to the Babylonians as it is to us. We have the accounts of great merchant or banking firms taking part in state finance and state tax collection, just as the great Genoese and Florentine bankers did in the middle ages, and as our banks do to-day.

In China, also, in times as remote as those of the Babylonian Empire, we find banks and instruments of credit long before any coins existed, and throughout practically the whole of Chinese history, so far as I have been able to learn, the coins have always been mere tokens.

There is no question but that credit is far older than cash.

From this excursion into the history of far remote ages, I now

return to the consideration of business methods in days nearer to our own, and yet extending far enough back to convince the most sceptical reader of the antiquity of credit.

Tallies were transferable, negotiable instruments, just like bills of exchange, bank-notes or coins. Private tokens (in England and the American colonies, at least) were chiefly used for quite small sums—a penny or a half-penny—and were issued by tradesmen and merchants of all kinds. As a general statement it is true to say that all commerce was for many centuries carried on entirely with tallies. By their means all purchases of goods, all loans of money were made, and all debts cleared.

The clearing houses of old were the great periodical fairs, whither went merchants great and small, bringing with them their tallies, to settle their mutual debts and credits. "Justiciaries" were set over the fairs to hear and determine all commercial disputes, and to "prove the tallies according to the commercial law, if the plaintiff desires this." The greatest of these fairs in England was that of St. Giles in Winchester, while the most famous probably in all Europe were those of Champagne and Brie in France, to which came merchants and bankers from all countries. Exchange booths were established and debts and credits were cleared to enormous amounts without the use of a single coin.

//397// The origin of the fairs of which I have spoken is lost in the mists of antiquity. Most of the charters of which we have record, granting to feudal lords the right to hold a fair, stipulate for the maintenance of the ancient customs of the fairs, thus showing that they dated from before the charter which merely legalized the position of the lord or granted him a monopoly. So important were these fairs that the person and property of merchants traveling to them was everywhere held sacred. During war, safe conducts were granted to them by the princes through whose territory they had to pass and severe punishment was inflicted for violence offered to them on the road. It was a very general practice in drawing up contracts,

to make debts payable at one or other of the fairs, and the general clearance at which the debts were paid was called the pagamentum. Nor was the custom of holding fairs confined to medieval Europe. They were held in ancient Greece under the name of panegyris and in Rome they were called nundinae, a name which in the middle ages was also frequently used. They are known to have been held in Mesopotamia and in India. In Mexico they are recorded by the historians of the conquest, and not many years ago at the fairs of Egypt, customs might have been seen which were known to Herodotus.

At some fairs no other business was done except the settlement of debts and credits, but in most a brisk retail trade was carried on. Little by little as governments developed their postal systems and powerful banking corporations grew up, the value of fairs as clearing houses dwindled, and they ceased to be frequented for that purpose, long remaining as nothing but festive gatherings until at last there linger but few, and those a mere shadow of their golden greatness.

The relation between religion and finance is significant. It is in the temples of Babylonia that most if not all of the commercial documents have been found. The temple of Jerusalem was in part a financial or banking institution, so also was the temple of Apollo at Delphi. The fairs of Europe were held in front of the churches, and were called by the names of the Saints, on or around whose festival they were held. In Amsterdam the Bourse was established in front of or, in bad weather, in one of the churches.

They were a strange jumble, these old fairs, of finance and trading and religion and orgy, the latter often being inextricably mixed up with the church ceremonies to the no small scandal of devout priests, alarmed lest the wrath of the Saint should be visited on the community for the shocking desecration of his holy name.

There is little doubt to my mind that the religious festival and

the settlement of debts were the origin of all fairs and that the commerce which was there carried on was a later development. If this is true, the connection between religion and the payment of debts is an additional indication if any were needed, of the extreme antiquity of credit.

The method by which governments carry on their finance by means of debts and credits is particularly interesting. Just like any private individual, the government pays by giving acknowledgments of //398// indebtedness—drafts on the Royal Treasury, or on some other branch of the government or on the government bank. This is well seen in medieval England, where the regular method used by the government for paying a creditor was by "raising a tally" on the Customs or on some other revenue-getting department, that is to say by giving to the creditor as an acknowledgment of indebtedness a wooden tally. The Exchequer accounts are full of entries such as the following:—"To Thomas de Bello Campo, Earl of Warwick, by divers tallies raised this day, containing 500 marks delivered to the same Earl." "To. . . . . by one tally raised this day in the name of the Collectors of the small customs in the Port of London containing £40." The system was not finally abandoned till the beginning of the nineteenth century.

I have already explained how such acknowledgments acquire a value in the case of private persons. We are all engaged in buying and selling, we manufacture commodities for sale, we cultivate the ground and sell the produce, we sell the labor of our hands or the work of our intelligence or the use of our property, and the only way in which we can be paid for the services we thus render is by receiving back from our purchasers the tallies which we ourselves have given in payment of like services which we have received from others.

But a government produces nothing for sale, and owns little or no property; of what value, then, are these tallies to the creditors of the government? They acquire their value in this way. The government by law obliges certain selected persons

to become its debtors. It declares that so-and-so, who imports goods from abroad, shall owe the government so much on all that he imports, or that so-and-so, who owns land, shall owe to the government so much per acre. This procedure is called levying a tax, and the persons thus forced into the position of debtors to the government must in theory seek out the holders of the tallies or other instrument acknowledging a debt due by the government, and acquire from them the tallies by selling to them some commodity or in doing them some service, in exchange for which they may be induced to part with their tallies. When these are returned to the government treasury, the taxes are paid. How literally true this is can be seen by examining the accounts of the sheriffs in England in olden days. They were the collectors of inland taxes, and had to bring their revenues to London periodically. The bulk of their collections always consisted of exchequer tallies, and though, of course, there was often a certain quantity of coin, just as often there was none at all, the whole consisting of tallies.

The general belief that the Exchequer was a place where gold or silver was received, stored and paid out is wholly false. Practically the entire business of the English Exchequer consisted in the issuing and receiving of tallies, in comparing the tallies and the counter-tallies, the stock and the stub, as the two parts of the tally were popularly called, in keeping the accounts of the government debtors and creditors, and in cancelling the tallies when returned to the Exchequer. It was, in fact, the great clearing house for government credits and debts.

//399// We can now understand the effect of the "mutations de la monnaie," which I have mentioned as being one of the financial expedients of medieval French kings. The coins which they issued were tokens of indebtedness with which they made small payments, such as the daily wages of their soldiers and sailors. When they arbitrarily reduced the official value of their tokens, they reduced by so much the value of the credits on the government which the holders of the coins possessed. It was simply a rough and ready method of taxation, which, being

spread over a large number of people, was not an unfair one, provided that it was not abused.

Taxpayers in olden days did not, of course, have in fact to search out the owners of the tallies any more than to have to-day to seek for the holders of drafts on the Bank of England. This was done through the bankers, who from the earliest days of history were always the financial agents of the governments. In Babylon it was the Sons of Egibi and the Sons of Marashu, in medieval Europe it was the Jewish and Florentine and Genoese bankers whose names figure in history.

There can be little doubt that banking was brought to Europe by the Jews of Babylonia, who spread over the Greek Colonies of the Asiatic coast, settled on the Grecian mainland and in the coast towns of northern Africa long before the Christian era. Westward they travelled and established themselves in the cities of Italy, Gaul and Spain either before or soon after the Christian era, and, though historians believe that they did not reach Britain till the time of the Roman conquest, it appears to me highly probable that the Jews of Gaul had their agents in the English coast towns over against Gaul, and that the early British coins were chiefly their work.

The monetary unit is merely an arbitrary denomination, by which commodities are measured in terms of credit, and which serves, therefore, as a more or less accurate measure of the value of all commodities. Pounds, shillings and pence are merely the a, b, c, of algebra, where a = 20 b = 240 c. What was the origin of the terms now in use is unknown. It may be that they once stood for a certain quantity or weight of some commodity. If it is so, it would make no difference to the fact that they do not now and have not for countless generations represented any commodity. Let us assume that the unit did once represent a commodity. Let us assume, for example, that in the beginning of things some merchant thought fit to keep his customers' accounts in terms of a certain weight of silver called a shekel, a term much used in antiquity. Silver was, of

course, a commodity like any other; there was no law of legal tender, and no one was entitled to pay his debts in silver, any more than any one was obliged to accept payment of his credits in silver. Debts and credits were set off against one another as they are to-day. Let us assume that a hundred bushels of corn and a shekel of silver were of the same value. Then so long as the price of the two did not vary, all would be well; a man bringing to the merchant a shekel's weight of silver or a hundred bushels of corn would equally receive in his books a credit of one shekel. But supposing that for some reason the value of //400// silver fell, so that a hundred bushels of corn would now exchange not for a shekel of silver but for a shekel and a tenth. What would then happen? Would all the creditors of the merchant suddenly lose because their credit was written down as shekels of silver, and the debtors of the merchant gain in the same proportion, although their transactions may have had nothing whatever to do with silver? Obviously not; it is hardly likely that the creditors would agree to lose a tenth of their money merely because the merchant had found it convenient to keep their accounts in shekel. This is what would happen: The owner of a shekel of silver, the price of which had fallen, would be informed by the merchant that silver had gone to a discount, and that in future he would only receive nine-tenths of a shekel of credit for each shekel of silver. A shekel of credit and a shekel weight of silver would no longer be the same; a monetary unit called a shekel would have arisen having no fixed relation to the weight of the metal the name of which it bore, and the debts and credits of the merchants and his customers would be unaffected by the change of the value of silver. A recent author gives an example of this when he mentions a case of accounts being kept in beaver-skins. The beaver-skin of account remained fixed, and was equivalent to two shillings, while the real skin varied in value, one real skin being worth several imaginary skins of account.

All our modern legislation fixing the price of gold is merely a survival of the late-medieval theory that the disastrous variability of the monetary unit had some mysterious connection

with the price of the precious metals, and that, if only that price could be controlled and made invariable, the monetary unit also would remain fixed. It is hard for us to realize the situation of those times. The people often saw the prices of the necessaries of life rise with great rapidity, so that from day to day no one knew what his income might be worth in commodities. At the same time, they saw the precious metals rising, and coins made of a high grade of gold or silver going to a premium, while those that circulated at their former value were reduced in weight by clipping. They saw an evident connection between these phenomena, and very naturally attributed the fall in the value of money to the rise of the value of the metals and the consequent deplorable condition of the coinage. They mistook effect for cause, and we have inherited their error. Many attempts were made to regulate the price of the precious metals, but until the nineteenth century, always unsuccessfully.

The great cause of the monetary perturbations of the middle ages were not the rise of the price of the precious metals, but the fall of the value of the credit unit, owing to the ravages of war, pestilence and famine. We can hardly realize to-day the appalling condition to which these three causes reduced Europe time after time. An historian thus describes the condition of France in the fourteenth and fifteenth centuries:

> "The ravages of an English army on a hostile soil were terrible, the ravages of the French troops in their own country were not less terrible, the ravages of roving bands of half-disciplined soldiers, who were almost //401// robbers by instinct, were still more terrible, and behind all these, more terrible, if possible, than the English or French armies, or the "free companies," were the gangs of criminals let loose from prison to do all kinds of villainy, and the bands of infuriated peasants robbed of their homes, who sallied forth from the woods or caves which had sheltered them and burnt up what in their hasty marches the troops had left undestroyed. No regard for station, or age, or sex was

there—no difference was made between friend or foe. At no time in the whole history of France was misery so universal and prodigious. . . . From the Somme to the frontiers of Germany, a distance of three hundred miles, the whole country was a silent tangle of thorns and brushwood. The people had all perished or had fled for shelter to the town to escape the merciless outrages of armed men. They hardly found the shelter they sought; the towns suffered as the country districts suffered, the herds of wolves, driven through lack of food from the forests, sought their prey in the streets. . . . War outside the walls stimulated the fiercer war within; starvation clung close to the footsteps of war; strange forms of disease which the chroniclers of those times sum up in the names of 'black death' or 'plague' were born of hunger and overleapt the highest barriers, pierced the strongest walls and ran riot in the overcrowded cities. Two-thirds of the population of France, it has been computed, fell before the terrible self-infliction of war, pestilence and famine."

"The sufferings of the fifteenth century were hardly less terrible than those of the fourteenth and the picture given of England differs but little from that of France."

"Whilst the northern countries, up to the walls of Lancaster and the banks of Mersey on one side of England, and to the gates of York and the mouth of the Humber on the other, were being ravaged by the Scots, and whilst French, Flemish, Scottish and other pirates were burning the towns and killing the inhabitants of the East, the West and the South coasts of England, or carrying them off as slaves, two other enemies were let loose upon this country. Famine and pestilence, the fruits of war, destroyed what man failed to reach."

Again and again the country was swept by famines and plagues, and murrain mowed down flocks and herds. And it was not only in those early days that such terrible ravages occurred. The condition of Germany at the end of the Thirty Years' War (1618 to 1648) was little less pitiable than that of

England and France in the fourteenth century.

Purchases are paid for by sales, or in other words, debts are paid for by credits, and, as I have said before, the value of a credit depends on the debtor being also a creditor; in a situation such as that which I have described (though it must not be thought that there were no intervals of comparative prosperity), commerce was practically at a standstill, credits were of little value. At the same time the governments had accumulated great debts to maintain their armies and to carry on their continual war-like operations, and were unable to levy the taxes which should pay for them. It was impossible that, under such conditions, the value of credit (in other words the value of the monetary unit) should not fall. It is quite unnecessary to search for imaginary arbitrary depreciations of the coinage to explain the phenomenon.

The reader may here raise the objection that whatever may have been the practice in olden times and whatever may be the scientific theory, //402// we do in the present day in fact use gold for making payments besides using credit instruments. A dollar or a sovereign, he will say, are a certain weight of gold and we are legally entitled to pay our debts with them.

But what are the facts? Let us take the situation here in the United States. The government accepts all the gold of standard fineness and gives in exchange gold coins weight for weight, or paper certificates representing such coins. Now the general impression is that the only effect of transforming the gold into coins is to cut it into pieces of a certain weight and to stamp these pieces with the government mark guaranteeing their weight and fineness. But is this really all that has been done? By no means. What has really happened is that the government has put upon the pieces of gold a stamp which conveys the promise that they will be received by the government in payment of taxes or other debts due to it. By issuing a coin, the government has incurred a liability towards its possessor just as it would have done had it made a purchase,—has incurred,

that is to say, an obligation to provide a credit by taxation or otherwise for the redemption of the coin and thus enable its possessor to get value for his money.

In virtue of the stamp it bears, the gold has changed its character from that of a mere commodity to that of a token of indebtedness. In England the Bank of England buys the gold and gives in exchange coin, or bank-notes or a credit on its books. In the United States the gold is deposited with the Mint and the depositor receives either coin or paper certificates in exchange. The seller and the depositor alike receive a credit, the one on the official bank and the other direct on the government treasury. The effect is precisely the same in both cases. The coin, the paper certificates, the bank-notes and the credit on the books of the bank, are all identical in their nature, whatever the difference of form or of intrinsic value. A priceless gem or a worthless bit of paper may equally be a token of debt, so long as the receiver knows what it stands for and the giver acknowledges his obligation to take it back in payment of a debt due.

Money, then, is credit and nothing but credit. A's money is B's debt to him, and when B pays his debt, A's money disappears. This is the whole theory of money.

Debts and credits are perpetually trying to get into touch with one another, so that they may be written off against each other, and it is the business of the banker to bring them together. This is done in two ways: either by discounting bills, or by making loans. The first is the more old fashioned method and in Europe the bulk of the banking business consists in discounts while in the United States the more usual procedure is by way of loans.

The process of discounting bills is as follows: A sells goods to B, C and D, who thereby become A's debtors and give him their acknowledgments of indebtedness, which are technically called bills of exchange, or more shortly bills. That is to say A acquires

a credit on B, C and D. A buys goods from E, F and G and gives his bill to each in payment. That is to say E, F and G have acquired credits on A. If B, C and D could sell //403// goods to E, F and G and take in payment the bills given by A, they could then present these bills to A and by so doing release themselves from their debt. So long as trade takes place in a small circle, say in one village or in a small group of near-by villages, B, C and D might be able to get hold of the bills in the possession of E, F and G. But as soon as commerce widened out, and the various debtors and creditors lived far apart and were unacquainted with one another, it is obvious that without some system of centralizing debts and credits commerce would not go on. Then arose the merchant or banker, the latter being merely a more specialized variety of the former. The banker buys from A the bills held by him on B, C and D, and A now becomes the creditor of the banker, the latter in his turn becoming the creditor of B, C and D. A's credit on the banker is called his deposit and he is called a depositor. E, F and G also sell to the banker the bills which they hold on A, and when they become due the banker debits A with the amount thus cancelling his former credit. A's debts and credits have been "cleared," and his name drops out, leaving B, C and D as debtors to the bank and E, F and G as the corresponding creditors. Meanwhile B, C and D have been doing business and in payment of sales which they have made, they receive bills on H, I and K. When their original bills held by the banker become due, they sell to him the bills which H, I and K have given them, and which balance their debt. Thus their debts and credits are "cleared" in their turn, and their names drop out, leaving H, I and K as debtors and E, F and G as creditors of the bank and so on. The modern bill is the lineal descendant of the medieval tally, and the more ancient Babylonian clay tablet.

Now let us see how the same result is reached by means of a loan instead of by taking the purchaser's bill and selling it to the banker. In this case the banking operation, instead of following the sale and purchase, anticipates it. B, C and D before buying the goods they require make an agreement with

the banker by which he undertakes to become the debtor of A in their place, while they at the same time agree to become the debtors of the banker. Having made this agreement B, C and D make their purchases from A and instead of giving him their bills which he sells to the banker, they give him a bill direct on the banker. These bills of exchange on a banker are called cheques or drafts.

It is evident that the situation thus created is precisely the same which ever procedure is adopted, and the debts and credits are cleared in the same manner. There is a slight difference in the details of the mechanism, that is all.

There is thus a constant circulation of debts and credits through the medium of the banker who brings them together and clears them as the debts fall due. This is the whole science of banking as it was three thousand years before Christ, and as it is to-day. It is a common error among economic writers to suppose that a bank was originally a place of safe deposit for gold and silver, which the owner could take out as he required it. The idea is wholly erroneous and can be shown to be so from the study of the ancient banks.

//404// Whatever commercial or financial transaction we examine, whether it be the purchase of a penn'orth of vegetables in the market or the issue of a billion dollar loan by a government, we find in each and all of them the same principle involved; either an old credit is transferred or new ones are created, and a State or a banker or a peasant is prosperous or bankrupt according as the principle is observed or not, that debts, as they fall due, must be met by credits available, at the same moment.

The object of every good banker is to see that at the end of each day's operations, his debts to other bankers do not exceed his credits on those bankers, and in addition the amount of the "lawful money" or credits on the government in his possession. This requirement limits the amount of money he has to "lend."

He knows by experience pretty accurately the amount of the cheques he will have to present for payment to other bankers and the amount of those which will be presented for his payment, and he will refuse to buy bills or to lend money—that is to say, he will refuse to incur present obligations in return for future payments—if by so doing he is going to risk having more debts due by him on a certain day than he will have credits on that day to set against them. It must be remembered that a credit due for payment at a future time cannot be set off against a debt due to another banker immediately. Debts and credits to be set off against each other must be "due" at the same time.

Too much importance is popularly attached to what in England is called the cash in hand and in the United States the reserves, that is to say the amount of lawful money in the possession of the bank, and it is generally supposed that in the natural order of things, the lending power and the solvency of the bank depends on the amount of these reserves. In fact, and this cannot be too clearly and emphatically stated, these reserves of lawful money have, from the scientific point of view, no more importance than any other of the bank assets. They are merely credits like any others, and whether they are 25 per cent or 10 per cent or one per cent or a quarter per cent of the amount of the deposits, would not in the least affect the solvency of the bank, and it is unfortunate that the United States has by legislation given an importance to these reserves which they should never have possessed. Such legislation was, no doubt, due to the erroneous view that has grown up in modern days that a depositor has the right to have his deposit paid in gold or in "lawful money." I am not aware of any law expressly giving him such a right, and under normal conditions, at any rate, he would not have it. A depositor sells to his banker his right on someone else* and, properly speaking, his sole right so long as the banker is solvent, is to transfer his credit to someone else, should the latter choose to accept it. But the laws of legal tender which

* This contract was called in Roman law a "mutuum."

most countries* have adopted have produced indirect consequences which were not originally foreseen or intended. The purpose of such laws was not to make gold or silver a standard of payment but merely to require that creditors should not refuse payment //405// of their credit in coins issued by the government at the value officially put upon them, no matter of what metal they were made; and the reason for these laws was not at all to provide a legal means of paying a debt, but to keep up the value of the coins, which, as I have explained, were liable to constant fluctuation either by reason of the governments issuing them at one value and accepting them at another, or by reason of the insolvency of the governments owing to their excessive indebtedness.

We may leave to lawyers the discussion of what may be the legal effect of such laws; the practical effect in the mind of the public is all that concerns us. It is but natural that in countries in which, like England and America, the standard coin is a certain weight of gold, a law providing that creditors shall accept these coins or the equivalent notes in full satisfaction of their debts, and mentioning no other method of settling a debt, should breed in the public mind the idea that that is the only legal way of settling a debt and that, therefore, the creditor is entitled to demand gold coins.

The effect of this impression is peculiarly unfortunate. When suspicion arises in the minds of depositors, they immediately demand payment of their credit in coins or their equivalent namely a credit on the State bank, or "lawful money,"—a demand which cannot possibly be complied with, and the result is to augment the panic by the idea getting abroad that the bank is insolvent. Consequently at the beginning of a stringency, every bank tries to force its debtors to pay their debts in coin or credit on the government, and these debtors, in their turn, have to try to extract the same payment from their debt-

* China, a great commercial country, has no such law. It appears to be an European invention.

ors, and to protect themselves, are thus forced to curtail their expenditure as much as possible. When this situation becomes general, buying and selling are restricted within comparatively narrow limits, and, as it is only by buying that credits can be reduced and by selling that debts can be paid, it comes to pass that everybody is clamoring for payment of the debts due to them and no one can pay them, because no one can sell. Thus the panic runs in a vicious circle.

The abolition of the law of legal tender would help to mitigate such a situation by making everybody realize that, once he had become a depositor in a bank, he had sold his credit to that bank and was not entitled to demand payment in coin or government obligations. Under normal conditions a banker would keep only enough coins or credits on the government to satisfy those of his clients who want them, just as a boot-maker keeps a stock of boots of different varieties, sufficient for the normal conditions of his trade; and the banker can no more pay all his depositors in cash than the bootmaker could supply boots of one variety to all his customers if such a demand were suddenly to be made on him. If bankers keep a supply of cash more than is normally required, it is either because there is a law compelling them to do so, as in the United States, or because a large supply of cash gives confidence to the public in the solvency of the bank, owing to the idea that has grown up regarding the necessity for a "metallic basis" for loans; or again because, owing to //406// the prevalence of this idea, there may suddenly occur an abnormal demand for the payment of deposits in this form.

It would be hard, probably, to say to what extent laws of legal tender can be successful in maintaining the real or the apparent value of coins or notes. They do not appear to have been so in colonial days, and indeed Chief justice Chase, in his dissenting opinion in the famous legal tender cases of 1872, expressed the view that their effect was the reverse of what was intended; that, instead of keeping up the value of the government notes, the law actually tended to depress them. However this may be,

and I am not inclined to agree with Mr. Chase, it seems to me to be certain that such laws are unnecessary for the maintenance of the monetary unit in a country with properly conducted finances. "Receivability for debts due the government," to use Chief justice Chase's expression, relative to inconvertible notes, is the real support of the currency, not laws of legal tender.

But it may be argued that it is at least necessary that the government should provide some standard "money" which a creditor is bound to accept in payment of his debt in order to avoid disputes as to the nature of the satisfaction which he shall receive for the debt. But in practice no difficulty would be experienced on this score. When a creditor wants his debt paid, he usually means that he wants to change his debtor; that is to say he wants a credit on a banker, so that he can use it easily, or keep it unused with safety. He, therefore, insists that every private debtor shall, when the debt is due, transfer to him a credit on a reputable banker; and every solvent debtor can satisfy his creditor in this manner. No law is required; the whole business regulates itself automatically.

During the suspension of specie payments in England for more than twenty years, from 1797 in 1820, there was no gold coin in circulation, its place being taken by Bank of England notes which were not legal tender, and the value of which constantly varied in terms of gold. Yet no embarrassment was noticed on this score, and commerce went on just as before. China (and I believe other Asiatic countries) could hardly have continued its commerce without such a law, if it had been of material importance.

On no banking question does there exist more confusion of ideas than on the subject of the nature of a banknote. It is generally supposed to be a substitute for gold and, therefore, it is deemed to be necessary to the safety of the notes that their issue should be strictly controlled. In the United States the issue of bank notes is said to be "based on" government debt, and in

England they are said to be "based on" gold. Their value is believed to depend on the fact that they are convertible into gold, but here again history disproves the theory. When, during the period just mentioned, the payment of Bank of England notes in gold was suspended, and the famous Bullion Committee was bound to acknowledge that a gold standard no longer existed, the value of the note in the country was not affected, as was testified by many witnesses of great business experience. If gold went to a premium and the exchange value of the //407// English banknote together with that of all English money fell, it was due, as was amply proved by Thomas Tooke in his famous "History of Prices," to the fact that Great Britain, by its enormous expenditure abroad for its military operations and its subventions to foreign countries, had accumulated a load of debt which greatly exceeded its credits on those countries, and a fall of the value of the English pound in terms of the money of other countries was the necessary result. When the debt was gradually liquidated, and English credit returned to its normal value, the price of gold of course fell in terms of the pound.

Again when for many years, Greek money was at a discount in foreign countries, this was due to the excessive indebtedness of Greece to foreign countries, and what did more than anything else to gradually re-establish parity was the constantly increasing deposits paid in to Greek banks from the savings of Greek emigrants to the United States. These deposits constituted a debt due from the United States to Greece and counter-balanced the periodical payments which had to be made by Greece for the interest on her external debt.

In the United States, on the contrary, at the time of the depreciation of greenbacks, the money was depreciated in the country itself, owing to the excessive indebtedness of the government to the people of the country.

A bank note differs in no essential way from an entry in the deposit register of a bank. Just like such an entry, it is an acknowledgment of the banker's indebtedness, and like all

acknowledgments of the kind, it is a "promise to pay." The only difference between a deposit entry and a bank note is that the one is written in a book and the other is on a loose leaf; the one is an acknowledgment standing in the name of the depositor, the other in the name of "the bearer." Both these methods of registering the debts of the bank have their particular use. In the one case the deposit or any portion of it can be transferred by draft, and in the other it, or a fixed portion of it, can be transferred by merely transferring the receipt from hand to hand.

The quantitative theory of money has impelled all governments to regulate the note issue, so as to prevent an over issue of "money." But the idea that some special danger lurks in the bank-note is without foundation. The holder of a bank-note is simply a depositor in a bank, and the issue of bank-notes is merely a convenience to depositors. Laws regulating the issue of bank-notes may make the limitations so elastic as to produce no effect, in which case they are useless; or they may so limit them as to be a real inconvenience to commerce, in which case they are a nuisance. To attempt the regulation of banking by limiting the note issue is to entirely misunderstand the whole banking problem, and to start at the wrong end. The danger lies not in the bank-note but in imprudent or dishonest banking. Once insure that banking shall be carried on by honest people under a proper understanding of the principles of credit and debt, and the note issue may be left to take care of itself.

Commerce, I repeat, has never had anything to do with the precious metals, and if every piece of gold and silver now in the world were to //408// disappear, it would go on just as before and no other effect would be produced than the loss of so much valuable property.

The gold myth, coupled with the law of legal tender, has fostered the feeling that there is some peculiar virtue in a central bank. It is supposed to fulfil an important function in pro-

tecting the country's stock of gold. This is, perhaps, as good a place as any other for explaining what was really accomplished when, after centuries of ineffectual efforts to fix the price of both the precious metals, the governments of Europe succeeded in fixing that of gold, or at least in keeping the price within narrow limits of fluctuation.

It was in the year 1717 that the price of gold was fixed by law at its present value in England, slightly above the then market value, but it was not until some time after the close of the Napoleonic wars that the metal obeyed the Royal mandate for any length of time, and when it did them were two main reasons: The greater stability of the value of credit and the enormous increase in the production of gold during the nineteenth century. The first of these causes was the result of the disappearance of plagues and famines and the mitigation of the ravages which accompanied earlier wars, and the better organization of governments, especially as regards their finance. These changes produced a prosperity and a stability in the value of credit— especially government credit— unknown in earlier days. The second cause prevented any appreciation of the market value of gold, and the obligation undertaken by the Government and the Bank of England to buy gold in any quantity at a fixed price and to sell it again at practically the same price prevented its depreciation. Had they not done so, it is safe to say that the market price of gold would not now be, as it is, £3. 17. 10½ an ounce. For some years, indeed, after the resumption of cash payments in England gold did actually fall to £3. 17. 6 an ounce.

The governments of the world have, in fact, conspired together to make a corner in gold and to hold it up at a prohibitive price, to the great profit of the mine owners and the loss of the rest of mankind. The result of this policy is that billions of dollars worth of gold are stored in the vaults of banks and treasuries, from the recesses of which they will never emerge, till a more rational policy is adopted.

Limitations of space compel me to close this article here, and

prevent the consideration of many interesting questions to which the credit theory of money gives rise; the most important of which, perhaps, is the intimate relation between existing currency systems and the rise of prices.

Future ages will laugh at their forefathers of the nineteenth and twentieth centuries, who gravely bought gold to imprison in dungeons in the belief that they were thereby obeying a high economic law and increasing the wealth and prosperity of the world.

A strange delusion, my masters, for a generation which prides itself on its knowledge of Economy and Finance and one which, let us hope, will not long survive. When once the precious metal has been freed from the shackles of laws which are unworthy of the age in which we live, who knows what uses may not be in store for it to benefit the whole world?

The Credit Theory of Money

By A. Mitchell-Innes

The following is a reprint of an essay originally published in the January 1914 issue of *The Banking Law Journal*, pages 151-168. Numbers such as //152// denote page numbers.

[EDITOR'S NOTE – So much has been written on the subject of "money" that a scientific writer like Mr. Innes is often misunderstood. Many economists and college professors have differed with the statements made in his first paper, but it seems that none were able to disprove his position. Following this number there will appear a symposium of criticisms and replies to the first paper, and we cordially invite criticisms and replies to this his second paper.]

The article which appeared in the May, 1913, number of this JOURNAL under the title "What is Money?" was a summary exposition of the Credit Theory of money, as opposed to the Metallic Theory which has hitherto been held by nearly all historians and has formed the basis of the teaching of practically all economists on the subject of money.

Up to the time of Adam Smith, not only was money identified with the precious metals, but it was popularly held that they formed the only real wealth; and though it must not be thought that the popular delusion was held by all serious thinkers, still, to Adam Smith belongs the credit of having finally and for all time established the principle that wealth does not reside in the precious metals.

But when it came to the question of the nature of money, Adam Smith's vision failed him, as the contradictory nature of his statements attests. It could not have been otherwise. Even today accurate information as to the historical facts concerning money is none too accessible: in the day of Adam Smith, the material on which to found a correct theory of money was not available, even had he possessed the knowledge with which to use it. Steuart perceived that the monetary unit was not necessarily identified with coinage, Mun realized that gold and silver were not the basis of foreign trade, Boisguillebert had boldly asserted that paper fulfilled all the functions which were performed by silver. But apart from a few half-formed ideas such as these, there was nothing which could guide Adam Smith in the attempt to solve the problems of his part of his Inquiry, and, having convinced himself of the truth of his main contention that wealth was not gold and silver, he was faced with two alternatives. Either money was not gold and silver, or it was not wealth, and he inevitably chose the latter alternative. Herein, however, Adam Smith came into conflict not with a popular delusion but with the realities of life as learnt from the universal experience of mankind. If money is not wealth, in the common acceptation of the word as meaning that mysterious "purchasing power" which alone constitutes real riches, then the whole of human commerce is based on a fallacy. Smith's definition of money as being, not wealth, but the "wheel which circulates wealth," does not explain the facts which we see around us, the striving after money, the desire to accumulate money. If money were but a wheel, why should we try to accumulate wheels. Why should a million wheels be of more use than one, or, if we are to regard money as all one wheel, why should a huge wheel serve better than a small one, or at any rate a moderate-sized one. The analogy is false.

Much has been written since the days of Adam Smith on the subject of money, and much useful investigation has been made, but we still hold to the old idea that gold and silver are the only real money and that all other forms of money are mere substitutes. The necessary result of this fundamental error is

that the utmost confusion prevails in this branch of the science of political economy, as any one will see who cares to take the trouble to compare the chapters on "Wealth," "Money," "Capital," "Interest," "Income" in the works of recognized authorities since Adam Smith. There is hardly a point on which any two are agreed.

How complete the divorce is between the experience of daily life and the teaching of the economists can best be seen by reading, for example, Marshall's chapter on capital, with its complicated divisions into national capital, social capital, personal capital, etc. Every banker and every commercial man knows that there is only one kind of capital, and that is money. Every commercial and financial transaction is based on the truth of this proposition, every balance sheet is made out in this well-established fact. And yet every economist bases his teaching on the hypothesis that capital is not money.

//152// It is only when we understand and accept the credit theory, that we see how perfectly science harmonizes with the known facts of every day life.

Shortly, the Credit Theory is this : that a sale and purchase is the exchange of a commodity for credit. From this main theory springs the sub-theory that the value of credit or money does not depend on the value of any metal or metals, but on the right which the creditor acquires to "payment," that is to say, to satisfaction for the credit, and on the obligation of the debtor to "pay" his debt and conversely on the right of the debtor to release himself from his debt by the tender of an equivalent debt owed by the creditor, and the obligation of the creditor to accept this tender in satisfaction of his credit.*

* Readers are warned that it is essential to bear constantly in mind the definition of credit, as laid down in the first article. Those who are not accustomed to this literal use of the word "credit," may find it easier to substitute in their minds the word "debt." Both words have the same meaning, the one or other being used, according as the situation is being discussed from the point of view of the creditor or the debtor. That

Such is the fundamental theory, but in practice it is not necessary for a debtor to acquire credits on the same persons to whom he is debtor. We are all both buyers and sellers, so that we are all at the same time both debtors and creditors of each other, and by the wonderfully efficient machinery of the banks to which we sell our credits, and which thus become the clearing houses of commerce, the debts and credits of the whole community are centralized and set off against each other. In practice, therefore, any good credit will pay any debt.

Again in theory we create a debt every time we buy and acquire a credit every time we sell, but in practice this theory is also modified, at least in advanced commercial communities. When we are successful in business, we accumulate credits on a banker and we can then buy without creating new debts, by merely transferring to our sellers a part of our accumulated credits. Or again, if we have no accumulated credits at the moment we wish to make a purchase, we can, instead of becoming the debtors of the person from whom we buy, arrange with our banker to "borrow" a credit on his books, and can transfer this borrowed credit to our seller, on undertaking to hand over to the banker the same amount of credit (and something over) which we acquire when we, in our turn, become sellers. Then again, the government, the greatest buyer of commodities and services in the land, issues in payment of its purchases* vast quantities of small tokens which are called coins or notes, and which are redeemable by the mechanism of taxation, and these credits on the government we can use in the payment of small purchases in preference to giving credits on ourselves or transferring those on our bankers.

So numerous have these government tokens become in the last few centuries and so universal their use in everyday life – far

---

which is a credit from the point of view of the creditor is a debt from the point of view of the debtor

* Modern governments unfortunately do not limit their issues of money to the payment of purchases. But of this later on.

exceeding that of any other species of money – that we have come to associate them more especially with the word "money." But they have no more claim to the title than any other tokens or acknowledgements of debt. Every merchant who pays for a purchase with his bill, and every banker who issues his notes or authorizes drafts to be drawn on him, issues money just as surely as does a government which issues drafts on the Treasury, or which puts its stamp on a piece of metal or a sheet of paper, and of all the false ideas current on the subject of money none is more harmful than that which attributes to the government the special function of monopolizing the issues of money. If banks could not issue money, they could not carry on their business, and when the government puts obstacles in the way of the issue of certain forms of money, one of the results is to force the public to accustom itself to other and perhaps less convenient forms.

As can be clearly proved by careful study of history, a dollar or a pound or any other monetary unit is not a fixed thing of known size and weight, and of ascertained //153// value, nor did government money always hold the pre-eminent position which it to-day enjoys in most countries – not by any means.

In France not so long ago, not only were there many different monetary units, all called by the same name of livre, but these livres – or such of them as were used by the government – were again often classified into forte monnaie and faible monnaie, the government money being faible. This distinction implied that the government money was of less value than bank money, or, in technical language, was depreciated in terms of bank money, so that the bankers refused, in spite of the legal tender laws, to accept a livre of credit on the government as an equivalent of a livre of credit on a bank.

The kings and their councillors were often puzzled by this phenomenon, and the consequences which flowed from it. Time and again they issued money which they certainly believed to be "forte," and declared to be so by law, and yet soon after, they

had to avow that in some mysterious manner, it had "devenu faible," become weak.

With the apparent exception of England, where the depreciation of government money, though considerable, was far less than on the continent, a similar situation was general throughout Europe : in countries in which there was a dominant bank, like Amsterdam, Hamburg and Venice, the higher standard being known as "bank money," and the lower standard as "current money." Out of this situation rose another interesting and important phenomenon: - while the wholesale trade, which dealt with the bankers followed the bank standard, the retail trade which dealt largely through the medium of the government coins, naturally followed more or less closely the government standard* and prices rose as the standard fell in value. In the German States, where there were literally hundreds of monetary standards, all called the same name of Mark† the history of money is particularly involved, and the fact that the retail trade always followed a lower standard than did the wholesale trade in the same place, has led historians to believe that the latter used as their standard a Mark weight of pure silver, while the retail trade used the Mark weight of the debased silver used in the coins. But this idea can be conclusively shown

* I do not wish to be understood as saying that the retail trade followed the standard of the coins, except to the extent that they shared the fate of the king's livre. Owing to the abuse of the system of "mutations" and the attempted monetary reforms, it is probable that the coins often suffered not only the depreciation of the king's livre, but had their own independent fluctuations.

† Like the livre in France, the mark was both a measure of weight and a monetary unit. But while the livre was never used for the weighing of the precious metals, the mark was the unit of weight for these metals, and this has caused German historians to confuse the two. How the same word came in many counties, though not in all, to be used for two such different purposes, we do not know. Possibly it originally only signified a unit of any kind. Another instance of the use of the same word for the two different kinds of measurement is fund in the word "inch," a measure of length, and the word "ounce" a measure of weight. Both these words are etymologically the same.

to be erroneous, and the "mark of pfennigsilber" did not refer to the weight of the coins, but to the quantity of pfennig-coins (the only coins known in Germany during the greater part of the middle ages) required to make up a money mark.

As may well be imagined, much confusion usually prevailed in money matters, and the extreme difficulty of settling in what standard debts should be paid and contracts, especially as regards rents, should be fulfilled, often caused serious discontent. To remedy this the kings of France attempted, probably with little success, to introduce by legislation certain rules as to the standard which should be applied to the various cases which might arise.

We, who are accustomed to the piping times of peace and to long periods of prosperity and government stability hardly realize how unstable a thing any given monetary unit may be. When we in the United States hear of a fall in the value of the paper of some bank or the money of some foreign government and see it quoted at a discount in terms of the dollar, we are accustomed to think of the dollar as an invariable unit and of the depreciated money as being something which has departed in value from our invariable standard. But when we take the trouble to study history we find that the //154// dollar of the American Government and the pound of the English Government have by no means always been the stable things we now imagine them to be. The English pound was in use in all the American colonies, and yet the pound of each differed in value from that of the others, and all Colonial pounds differed from that of the mother country. In the early days of the American Union, the different official monies differed from the standard in use in business and were at a heavy discount in terms of the latter.

The notion that we all have to-day that the government coin is the one and only dollar and that all other forms of money are promises to pay that dollar is no longer tenable in the face of the clear historical evidence to the contrary. A government

dollar is a promise to "pay," a promise to "satisfy," a promise to "redeem," just as all other money is. All forms of money are identical in their nature. It is hard to get the public to realize this functional principle, without a true understanding of which it is impossible to grasp any of the phenomena of money. Hard, too, is it to realize that in America to-day, there are in any given place many different dollars in use, for the fact is not so apparent in our days as it was in former times. Let us suppose that I take to my banker in, say, New Orleans, a number of sight drafts of the same nominal value, one on the Sub-Treasury, one on another well-known bank in the city, one on an obscure tradesman in the suburbs, one on a well-known bank in New York, and one on a reputable merchant in Chicago. For the draft on the Sub-Treasury and for that on the bank in the city, my banker will probably give me a credit for exactly the nominal value, but the others will all be exchanged at different prices. For the draft on the New York bank I might get more than the stated amount, for that of the New York merchant, I should probably get less, while for that on the obscure tradesman, my banker would probably give nothing without my endorsement, and even then I should receive less than the nominal amount. All these documents represent different dollars of debt, which the banker buys for whatever he thinks they may be worth to him. The banker whose dollars we buy, estimates all these other dollars in terms of his own. The dollar of a first class banker is the highest standard of credit that can be obtained generally speaking, though the standard of a first class banker in a city like London or New York may be worth to a provincial banker somewhat more than his own money. The dollar of government money in America is equal to that of bank money, because of the confidence which we have come to have in government credit, and it usually ranks in any given city slightly higher than does the money of a banker outside the city, not at all because it represents gold, but merely because the financial operations of the government are so extensive that government money is required everywhere for the discharge of taxes or other obligations to the government.

Everybody who incurs a debt issues his own dollar, which may or may not be identical with the dollar of any one else's money. It is a little difficult to realize this curious fact, because in practice the only dollars which circulate are government dollars and bank dollars and, as both represent the highest and most convenient form of credit, their relative value is much the same, though not always identical. This apparent stability of government money in our day obscures the phenomenon which was familiar to our forefathers.

The one essential condition to the stability of all money by whomsoever issued is, as I explained in the former article, that it should be redeemable at the proper time, not in pieces of metal, but in credit. A credit redeems a debt and nothing else does, unless in virtue of a special statute or a particular contract.

The main obstacle to the adoption of a truer view of the nature of money is the difficulty of persuading the public that "things are not the way they seem," that what appears to be the simple and obvious explanation of every-day phenomenon is incompatible with ascertainable, demonstrable facts – to make the public realize, as it were, that while they believe themselves to be watching the sun's progress round the earth, they are really watching the progress of the earth round the sun. It is hard to disbelieve the evidence of our senses.

We see a law which establishes in the United States a "standard dollar" of a definite weight of gold of a certain fineness; we see a law making the acceptance of //155// these coins in payment of debt obligatory on the creditor – a law which is cheerfully obeyed without question; we see all commercial transactions carried on in dollars; and finally we everywhere see coins (or equivalent notes) called dollars or multiples or fractions thereof, by means of which innumerable purchases are made and debts settled. Seeing all these things, what more natural than to believe that, when the Law declared a certain coin to be the Standard Dollar, it really became so: that when we pronounce

the word "dollar" we refer to a standard coin, that when we do our commercial transactions we do them, theoretically at least, in these coins with which we are so familiar. What more obvious that when we give or take a "promise to pay" so many dollars, we mean thereby a promise to pay golden coins or their equivalent.

Suddenly we are told that our cherished beliefs are erroneous, that the Law has no power to create a standard dollar, that, when we buy and sell, the standard which we use is not a piece of gold, but something abstract and intangible, that when we "promise to pay" we do not undertake to pay gold coins, but that we merely undertake to cancel our debt by an equivalent credit expressed in terms of our abstract, intangible standard; that a government coin is a "promise to pay," just like a private bill or note. What wonder if the teacher of the novel doctrine is view with suspicion? What wonder if the public refuses to be at once convinced that the earth revolves around the sun?

So it is, however. The eye has never seen, nor the hand touched a dollar. All that we can touch or see is a promise to pay or satisfy a debt due for an amount called a dollar. That which we handle may be called a dollar certificate or a dollar note or a dollar coin; it may bear words promising to pay a dollar or promising to exchange it for a dollar coin of gold or silver, or it may merely bear the word dollar, or, in the case of the English sovereign, worth a pound, it may bear no inscription at all, but merely a king's head. What is stamped on the face of a coin or printed on the face of a note matters not at all; what does matter, and this is the only thing that matters is: What is the obligation which the issuer of that coin or note really undertakes, and is he able to fulfill that promise, whatever it may be?

The theory of an abstract standard is not so extraordinary as it first appears, and it presents no difficulty to those scientific men with whom I have discussed the theory. All our measures are the same. No one has ever seen on ounce or a foot or an hour. A foot is the distance between two fixed points, but

neither the distance nor the points have a corporeal existence. We divide, as it were, infinite distance or space into arbitrary parts, and devise more or less accurate implements for measuring such parts when applied to things having a corporeal existence. Weight is the force of gravity as demonstrated with reference to the objects around us, and we measure it by comparing the effect of this force on any given objects with that exerted on another known object. But at best, this measure is but an approximation, because the force is not exerted everywhere equally.

Our measure of time is a thing to which no concrete standard can be applied, and an hour can never be reckoned with perfect accuracy. In countries where solar time is used, the hour is the twenty-fourth part of the time reckoned from sunset to sunset, and the standard is therefore of the roughest. But because the people who calculate thus live in countries where the difference between the length of a day in summer and in winter is not so great as it is further north, they feel no inconvenience from this inaccuracy, and indeed they do not seem to be aware of it – so strong is the force of habit.

Credit and debt are abstract ideas, and we could not, if we would, measure them by the standard of any tangible thing. We divide, as it were, infinite credit and debt into arbitrary parts called a dollar or a pound, and long habit makes us think of these measures as something fixed and accurate; whereas, as a matter of fact, they are peculiarly liable to fluctuation.

Now there's only one test to which monetary theories can be subjected, and which they must pass, and that is the test of history. Nothing but history can confirm the accuracy of our reasoning, and if our theory cannot stand the test of history, then there is no truth in it. It is no use to appeal to the evidence of our senses, it is useless to //156// cite laws in support of a theory. A law is not a scientific truth. The law may assert that a certain piece of metal is a standard dollar, but that does not make it so. The law might assert that the sun revolved around

the earth, but that would not influence the forces of nature.

Like causes produce like effects, and if governments had been able to create standard coins having a fixed value in terms of the monetary unit, the monetary history of the world must have been different from what it has been. While modern historians deplore the wickedness of medieval monarchs who brought all sorts of evils on their people by their unprincipled debasements of the coinage, the kings themselves, who should have been pretty good judges, attributed their misfortunes to the wickedness of their subjects, impelled by lust of gain to clip and file the coins, and to force the precious metals above their official, or as the royal documents said, their "proper value" – and to clip the coins, and to offer or take the coins at any but their official value were crimes for which severe penalties were enacted.

The rise of the value of gold ecus of France and the gold guineas of England, the latter popularly valued as high as 30 though officially issued at 20 shillings may with some plausibility be accounted for on the theory that silver not gold was the "standard of value," and that it is perfectly natural that gold might vary in terms of silver, as much as any other commodity. But how account for the fact that the "gros tournois", a coin of good silver, constantly rose in value in spite of all the kings could do to prevent it, and in spite of the fact that it was being progressively reduced in weight. How account for the fact that, when in the fifteenth century, the gulden became one of the most used of the monetary units of Germany, the gold gulden coin (there was no silver coin of that name) became of more value than the gulden of money, as used in commerce. How, above all, account for the fact that while, as I have said, the guinea rose in terms of the shilling, so also did the shillings themselves. The full weight shilling of William III, as it issued from the mint - for William III would never have been guilty of debasing the coinage - was more than the shilling of commerce, and was snapped up by dealers and exported to Holland. "Ah, but," day the critics, "you have forgotten that all the

shillings in circulation were clipped and filed, till there was not a full weight coin in the country, never had the coinage been in so deplorable a condition." But if it is admitted that the rise of the value of the gold coins and the full weight silver coins was due to the debasement of the coins through clipping, then it has to be admitted that the clipped coins must have been the standard of value and not the full-weight coins as issued by the government. But what, then, becomes of the theory that the standard is fixed by government through its coinage. And if the standard was not fixed through the official coinage, as it certainly was not, who fixed the amount of metal which was called a shilling? The merchants? They certainly did not. On the contrary, they appealed to parliament for protection against the evil-doers who for their profit exported the full-weight silver coins. Was it those who secretly clipped the good coins? If so, the power of these evil-doers over the monetary standard exceeded the combined power of king and parliament and the great body of the merchants. The idea is too absurd to discuss. Besides the clipped shillings were not a standard; the price at which they should be given and taken was a matter of haggling between the buyer and the seller, and often gave rise to great difficulty. Indeed, just as happens frequently during the middle ages, no one knew for certain what was the value of the coins in his pocket. "But," say the triumphant critics, "you will not deny that the great recoinage act of 1696, which called in the damages coins at great expense to the government, exchanged them for a whole new issue of full weight coins, resulted in the re-establishment of the value of the shilling. You will surely not deny the rise of the value of our money was the direct result of this beneficent measure." And the critic points to the unanimous verdict of historians. It is true that all historians ascribe the fall in the value of the shilling to the debased condition of the coinage and its rise to the recoinage act. But in this they only follow Macaulay, whose history has been characterized by a wit as the greatest work of fiction //157// in the English language. Certainly he had made no special study of the problems of money.

Let us then look at the facts a little more closely.

It is not King Jean or King Philippe or Edward or Henry who have been the depreciators of money, but King War, the great creator of debts, helped by his lieutenants, plague, murrain and ruined crops - whatever, in fact, prevents debts from being punctually discharged. It is not recoinage acts which have been the restorers of the value of money, but Peace, the great creator of credits, and upon the invariable truth of this statement the credit theory of money must largely depend. Now, for seven years - from 1690 to 1697 - the country had been engaged in the most costly war ever known to English history up to that time. The armies of the allies had to be maintained largely by English subsidies, and Parliament, feeling its newly acquired strength, and as unable as the rest of the country to appreciate the character of the great Dutchman who devoted his life to their service, doled out supplies with a stingy hand. At the same time a series of disastrously wet and cold seasons, which the Jacobites attributed to the curse of God on the Usurper, did great damage to agriculture. The customs dues fell to half, and the people could not pay their taxes. The country was over head and ears in debt.

Now observe. In 1694 the combatants were already exhausted, and negotiations for peace were unsuccessfully started. Throughout 1695, the war languished, and it was evident that peace was absolutely necessary. In 1696 war was practically over, and in 1697 peace was signed. The floating debt was funded through the agency of the newly founded Bank of England and foreign commerce, by means of which credits on foreign countries were acquired, was once again able to expand. These three causes were amply sufficient to account for the restoration of the value of English money, and had there been any one at that time who understood the nature of money, he could have predicted with absolute certainty the disastrous effect that the creation of a huge floating debt would have on the value of money and could have foretold the healing effect of the peace and he funding of the debt and the return of agricultur-

al prosperity. He could have saved he government the wholly unnecessary expense (small, however, when compared with the total indebtedness) of the recoinage act. Far from doing anything to alleviate the situation, the Act intensified the crisis, and it was in spite of the Act, not because of it, that the finances of the country gradually returned to a normal condition.

I must here turn aside for a moment to explain the nature of a funding of debt. I said in the former article: "Hence it follows that a man is only solvent if he has immediately available credits at least equal to the amounts of his debts immediately due and presented for payment. If therefore the sum of his immediate debts exceeds the sum of his immediate credits, the real value of these debts to the creditors will fall to an amount which will make them equal to the amount of his credits." The same thing of course applies to the indebtedness of a country.

The debts which count in the depreciation of the monetary unit are those which are contracted without any provision for their payment and which are either payable at sight as in the case of currency notes or payable at short terms and have to be constantly renewed for want of credits with which to cancel them. William's war debt was incurred for the maintenance of the English armies and for the payment of the subsidies with which he had fed the allies. In 1694 the association of rich British merchants calling themselves the Bank of England was formed for the express purpose of providing money to pay the war expenses. They did not supply him with gold in large quantities, but with immediately available credits. That is to say the merchants who possessed or could command large credits both at home and abroad, undertook to cancel with their credits the debts incurred by the government, and at the same time undertook not to present for payment the credits which they thus acquired on the government, on condition of the government paying to them an annual interest. This is what is meant by funding a debt or raising a loan. The immediate floating of debt of the //158// government is cancelled, so far as the government is concerned, and ceases consequently

to affect the value of the monetary unit. In place of the load of debt clamoring for payment, there is only the interest on the debt, probably not more than five or six per cent of the capital, and amount which under normal circumstances a country has no difficulty in meeting.

I have dwelt on the financial situation of 1696 for the reason that it exposes better than any other case with which I am acquainted the fallacies of the arguments of the upholders of the theory of a metallic standard. To them the standard is a little piece of metal, and so long as someone (any one apparently) does not reduce its size or mix it with dross or clip bits out, it must remain invariable, unless, indeed, the government gives forced currency to its paper notes, which are held by economists to be promises to pay in the standard metal, and which, therefore, it is maintained, fall if the promise cannot be redeemed.

Now in the case under examination it cannot be argued, as did the Bullion Committee of 1810 that the fall in the value of the pound was due to the excessive issue of Bank of England notes, because, the Bank having just been started, there can have been no great circulation of notes. Nor can it be attributed to a forced currency of government notes, as in the case of the American war of independence or the civil war, because in this instance there was no government paper money. And consequently, the facts of the economic situation being ignored, it is attributed to the clipping of coinage.

Those who glibly talk of the arbitrary depreciation of the monetary unit through manipulations of the coinage do not realize how difficult a thing it is to carry through any change of a standard of measure to which people have become accustomed by long use. Even when the government money has become permanently depreciated and fixed at a lower level, bankers have, as history shows, been slow to adapt the new standard.

Even the strongest governments hesitate to undertake the

difficult task of changing the existing system of weights and measures. Every scientific man in England and America is in favour of introducing the metric system of weights and measures, and (in England) a decimal system of money, and the change has been preached and advocated for many years, so far without success. No, to ask us to believe that the coin clippers wielded a power which enabled them to change the standard of money is to overtax our credulity. Why, even smaller changes than those mentioned have been attended with great difficulties. Though in England weights and measures have been standardized by law, local measures, local standards still linger on and are in daily use. It required the great revolution in France to change their standards and retail trade in the country is still calculated in sous, instead of the official franc and centime. In Egypt, the peasant still divides his piaster into forty faddahs, though the faddah has been officially dead these many years and the decimal millieme is the official change.

This slight sketch of the Credit Theory of money which I was able to give in the space allotted to me in the May 1913 number of the JOURNAL and the summary indication in that and the present number of the evidence in support of that theory, which the student of the paths and byways of history may expect to find – this must suffice for the present. I do not expect that conversion to the newer doctrine will be rapid, but the more earnestly the problems of money and banking are studied, the more sure it is that the metallic theory of money must before many years be abandoned. There are literally none of these problems which can be explained in the old theory. There is literally no evidence which, when weighed and sifted, supports the theory of a metallic standard. The fact that the monetary unit is a ting distinct from the coinage is no new discovery. It was pointed out by a distinguished economist, Sir James Steuart, who wrote before the days of Adam Smith, and among modern writers Jevons calls attention to the phenomenon. The frequent use of the expressions "money of account" and "ideal money" in older writings shows that the idea was familiar to many. As the middle ages wore on, and the increase of

government expenditure brought about a great increase in the quantity of coins, money became, naturally enough, identified with the coinage, which circulated in abundance when trade was good, and which //159// disappeared in times of distress when there was little to buy or sell. Hence arose the popular delusion that abundance of coins meant prosperity and the want of them was the cause of poverty. When the kings tried to supply the want by fresh coinages, the new pieces disappeared in bad times like the old, and the phenomenon could only be accounted for on the assumption that evilly-disposed persons exported them, melted them or hoarded them for private gain, and heavy penalties were decreed against the criminals, who by their act plunged the country into poverty. No doubt a certain amount of exporting and melting took place, when the coins of high intrinsic value (a very small proportion of the whole), the monnaie blanche, as it was called in France, roseabove its official value, but the absurdity of the popular outcry for more coins was well exposed by that fine old economist, the Sieur de Boisguillebert, who pointed out that the apparent abundance and scarcity of coins was deceptive, and that the amount of coinage was in both cases the same, the only difference being that while trade was brisk, comparatively few coins by their rapid circulation appeared to be many; while in days of financial distress, when trade was, as not infrequently happened in the middle ages, almost at a standstill, coins seemed to be scarce.

The present writer is not the first to enunciate the Credit Theory of money. This distinction belongs to that remarkable economist H. D. Macleod. Many writers have, of course, maintained that certain credit instruments must be included in the term "money", but Macleod, almost the only economist known to me who has scientifically treated of banking and credit,* alone saw

* Goshen's "Theory of Foreign Exchanges" must be included among scientific treatises on credit. Hartley Withers's recent works, "The Meaning of Money" and "Money Changing" are practical rather than scientific treatises. They are indispensable to the student

that money was to be identified with credit, and these articles are but a more consistent and logical development of his teaching. Macleod wrote in advance of his time and the want of accurate historical knowledge prevented his realizing that credit was more ancient than the earliest use of metal coins. His ideas therefore never entirely clarified themselves, and he was unable to formulate the basic theory that a sale and purchase is the exchange of a commodity for a credit and not for a piece of metal or any other property. In that theory lies the essence of the whole science of money.

But even when we have grasped this truth there remain obscurities which in the present state of our knowledge cannot be entirely eliminated.

What is a monetary unit? What is a dollar?

We do not know. All we do know for certain — and I wish to reiterate and emphasize the fact that on this point the evidence which in these articles I have only been able briefly to indicate, is clear and conclusive — all, I say, that we do know is that the dollar is a measure of the value of all commodities, but is not itself a commodity, nor can it be embodied in any commodity. It is intangible, immaterial, abstract. It is a measure in terms of credit and debt. Under normal circumstances, it appears to have the power of maintaining its accuracy as a measure over long periods. Under other circumstances it loses this power with great rapidity. It is easily depreciated by excessive indebtedness, and once this depreciation has become confirmed, it seems exceedingly difficult and perhaps impossible for it to regain its previous position. The depreciation (or part of it) appears to be permanently acquired; though there is a difference in this respect between depreciation in terms of foreign money and a depreciation of the purchasing price of the credit unit in its own country.

But while the monetary unit may depreciate, it never seems to appreciate. A general rise of prices at times rapid and at times

slow is the common feature of all financial history; and while a rapid rise may be followed by a fall, the fall seems to be nothing more than a return to a state of equilibrium. I doubt whether there are any instances of a fall to a price lower than that which prevailed before the rise, and anything approaching a persistent fall in prices, denoting a continuous rise of the value of money, appears to be unknown.

//160// That which maintains the steadiness of the monetary unit (in so far as it is steady) appears to be what Adam Smith calls the "higgling of the market," the tug of war which is constantly going on between buyers and sellers, the former to pay as little of the precious thing as possible, the latter to acquire as much as possible. Under perfectly normal conditions, that is to say when commerce is carried on without any violent disturbances, from whatever cause, these two forces are probably well-balanced, their strength is equal, and neither can obtain any material advantage over the other. In the quiet seclusion of those peaceful countries which pursue the even tenor of their way uninfluenced by the wars or the material development of more strenuous lands, prices seem to maintain a remarkable regularity for long periods.

The most interesting practical application of the credit theory of money will, I think, be found in the consideration of the relation between the currency system known as the gold standard and the rise of prices. Several economists of the present day feel that such a relation exists, and explain it on the theory of the depreciation of the value of gold owing to the operation of the law of supply and demand, a law, however, which can hardly be regarded as applicable to the case.

We know how it works in ordinary commerce. If the production of a commodity increases at a rate greater than the demand, dealers, finding their stock becoming unduly large, lower the price in order to find a market for the surplus. The lowering of the price is a conscious act.

Not so, however, in the case of gold, the price of which, estimated in money, is invariable; and we must seek another reason. It will, I think, be found in the theory here advanced that the value of a credit on any debtor depends on an equation between the amount of debt immediately payable by the debtor credit and the amount of credits which he has immediately available for the cancellation of his debts.

Whenever we see in a country signs of a continuous fall in the value of the credit unit, we shall, if we look carefully, find that it is due to excessive indebtedness.

We have seen in the Middle Ages how prices rose owing to the failure of consecutive governments throughout Europe to observe the law of the equation of debts and credits. The value of the money unit fell owing to the constant excess of government indebtedness over the credits that could be squeezed by taxation out of a people impoverished by the ravages of war and the plagues and famines and murrains which afflicted them.

If I am not mistaken, we shall find at the present day a precisely similar result of far different causes. We shall find, partly as a result of our currency systems, nations, governments, bankers, all combining to incur immediate liabilities greatly in excess of the' credits available to meet them.

We imagine that, by maintaining gold at a fixed price, we are keeping up the value of our monetary unit, while, in fact, we are doing just the contrary. The longer we maintain gold at its present price, while the metal continues to be as plentiful as it now is, the more we depreciate our money.

Let me try to make this clear.

In the previous article I explained the nature of a coin or certificate and how they acquired their value by taxation. It is essential to have that explanation clearly in mind if what follows is to be intelligible. To begin with it will be well to amplify that

explanation, and to present the problem in a rather different aspect.

We are accustomed to consider the issue of money as a precious blessing, and taxation as a burden which is apt to become well nigh intolerable. But this is the reverse of the truth. It is the issue of money which is the burden and the taxation which is the blessing. Every time a coin or certificate is issued a solemn obligation is laid on the people of the country. A credit on the public treasury is opened, a public debt incurred. It is true that a coin does not purport to convey an obligation, there is no law which imposes an obligation, and the fact is not generally recognized. It is nevertheless the simple truth. A credit, it cannot be too often or too emphatically stated, is a right to "satisfaction." This right depends on no statute, but on common or //161// customary law. It is inherent in the very nature of credit throughout the world. It is credit. The parties can, of course, agree between themselves as to the form which that satisfaction shall take, but there is one form which requires no negotiation or agreement, the right of the holder of the credit (the creditor) to hand back to the issuer of the debt (the debtor) the latter's acknowledgement or obligation, when the former in his turn becomes debtor and the latter creditor, and thus to cancel the two debts and the two credits. A is debtor to B and gives his obligation or acknowledgement of debt. Shortly afterwards, B becomes debtor to A and hands back the acknowledgement. The debt of A to B and of B to A, the credit of B on A and that of A on B are thereby cancelled.

Nothing else but a credit gives this common law right, and consequently every document or instrument, in whatever form or of whatever material, which gives this right of cancelling a debt by returning it to the issuer is a credit document, an acknowledgement of debt, an "instrument of credit."

Now a government coin (and therefore also a government note or certificate which represents a coin) confers this right on the holder, and there is no other essentially necessary right which

is attached to it. The holder of a coin or certificate has the absolute right to pay any debt due to the government by tendering that coin or certificate, and it is this right and nothing else which gives them their value. It is immaterial whether or not the right is conveyed by statute, or even whether there may be a statute law defining the nature of a coin or certificate otherwise. Legal definitions cannot alter the fundamental nature of a financial transaction.

It matters not at all what object the government has in view in issuing their tokens, whether its object is to pay for a service rendered or to supply the "medium of exchange." What the government thinks it is doing when it gives coins in exchange for bullion, or what name the law gives to the operation—all this is of no consequence. What is of consequence is the result of what they are doing, and this, as I have said, is that with every coin issued a burden or charge or obligation or debt is laid on the community in favor of certain individuals, and it can only be wiped out by taxation.

Whenever a tax is imposed, each taxpayer becomes responsible for the redemption of a small part of the debt which the government has contracted by its issues of money, whether coins, certificates, notes, drafts on the treasury, or by whatever name this money is called. He has to acquire his portion of the debt from some holder of a coin or certificate or other form of government money, and present it to the Treasury in liquidation of his legal debt. He has to redeem or cancel that portion of the debt. As a matter of fact most of the government money finds its way to the banks, and we pay our tax by a cheque on our banker, who hands over to the treasury the coins or notes or certificates in exchange for the cheque and debits our account.

This, then—the redemption of government debt by taxation—is the basic law of coinage and of any issue of government "money "in whatever form. It has lain forgotten for centuries, and instead of it we have developed the notion that somehow the metallic character of the coin is the really important thing

whereas in fact it has no direct importance. We have grown so accustomed to paying taxes or any other debt with coins, that we have come to consider it as a sort of natural right to do so. We have come to consider coins as "money "par excellence, and the matter of which they are composed as in some mysterious way the embodiment of wealth. The more coins there are in circulation, the more "money" there is, and therefore the richer we are.

The fact, however, is that the more government money there is in circulation, the poorer we are. Of all the principles which we may learn from the credit theory, none is more important than this, and until we have thoroughly digested it we are not in a position to enact sound currency laws.

One may imagine the critics saying: "There may be something in what you say. It is rather curious that the government should take gold coins in payment of a debt and should not undertake to accept any other commodity. Perhaps, as you say, the stamping of the coin does give it a special character, perhaps the issue of a coin may be regarded as the creation of an obligation, however contrary the theory may be to what //162// I have hitherto been taught. Still, I cannot altogether see things in your way. In any case, whatever may be the effect of the stamping of a coin, it does not alter its value in any way. When I present you with a sovereign or a $5 piece, I really pay my debt to you, because I am giving you something that is intrinsically worth that amount. You can melt it and sell it again for the same amount, if you wish. What then is the use of making such a point of the obligation which is undertaken by the issue of a coin?"

A similar criticism was made in somewhat different language in a review of my previous article. The author wrote as follows: — "Mr. Innes says that modern governments have conspired to raise the price of gold, but in this he errs. No legislation of the present time fixes the price of gold or attempts to do so. England has enacted that a certain weight and fineness of

gold shall be called a pound, the U. S. that a certain weight and fineness shall be called a dollar. But a pound or dollar are mere abstract names and have no connection or relation with value of price. * * A like quantity of gold by any other name will have the same value — as, for instance, bullion."

Now let us see on whose side the error lies. If it were true, as my critic says, and as many economists hold, that all the governments of the world do is to enact that certain weight of gold shall be called a pound or a dollar, it is certain that such a law would produce no effect on the market price of gold. No one would pay any attention to so futile a law. But, as I have already said, the government invests a certain weight of gold when bearing the government stamp with extraordinary power, that of settling debt to the amount of a pound or a dollar. This is a very different thing from merely calling it by a certain name. As history however conclusively proves, even this would not suffice to fix the price of gold in terms of the monetary unit if the government confined itself to buying only so much gold as was required for the purpose of the coinage. But the English government has taken a far more important step than this. It has done what medieval governments never did; it has bound the Bank of England (which is really a government department of a rather peculiar kind) to buy all gold offered to it at the uniform price of £3 17a 9d an ounce, and to sell it again at £3 17s 10 ½ d an ounce. In other words, the bank is bound to give for an ounce of gold a credit on its books for £3 17s 9d, and to give gold for credit, at a small profit of 1 ½ d an ounce. If this is not fixing the price of gold, words have no meaning.

The United States government achieves the same result by a somewhat different method.

The Government of the United States does not profess to buy gold. All it professes to do is to accept it on deposit, make it into bits called standard dollars, stamp them with a guarantee of weight and purity, and hand them back to the owner, or, if he wishes it, he will be given a certificate or certificates in

place of the gold. Now I again wish to emphasize the fact that it is not what the government professes to do that matters, but what it actually does. The fact that the law regards this transaction as a deposit does not make it so. The transaction is not really a deposit, but a sale and purchase. In exchange for each ounce of gold the owner receives money. If the gold were merely taken on deposit, or for the purpose of stamping it without giving to the owner of the stamped metal any special right to pay his taxes with his gold, that is to say without investing the gold with the character of an obligation, without making it into money, the transaction would be a deposit, but not otherwise; and the fact that the law holds the transaction to be a deposit, merely shows that the legislature acted under the influence of erroneous views on the subject of money. It could hardly have done otherwise, because the whole world had for long been a slave to the most absurd notions on the subject, and indeed England was one of the few countries in which the word silver* did not come to mean money. By the seventeenth century the idea that gold and silver were subject to the ordinary laws of purchase and sale had become, if not extinct, at least so beclouded as to be as good as dead. Gold and //163// silver† did not seem to be the object of sale and purchase, being themselves, it was supposed, that for which all commodities were sold. It is only by keeping before our mind's eye a truer view of the nature of money as deduced from known facts that we can realize the real effect to the government's action. Let me give an illustration of the position of a modern government.

When a farmer disposes of his corn to a merchant in return for money, he is said to have sold it. He may have received bank notes, or a cheque or coin or the merchant's bill or note—it matters not which. The transaction is a true sale. Now let us suppose that the farmer took the merchant's note for the value of the corn and that the latter, instead of selling the corn for

* Even when the coins that once were silver were most debased, they were still regarded as silver in theory, though not in practice

† The views on the subject of gold were, however, rather mixed

his profit, declared that it was not his intention to buy the corn, but merely to keep it on deposit for the owner, and that he would keep it till the owner or the holder of a bill presented it to be exchanged for the corn again. This situation of the merchant would be precisely similar to that of the Government to-day with respect to the purchase of gold. The farmer would deposit the money with his banker and would get a credit on the banker in exchange for it. There, so far as the farmer was concerned, the matter would end. The note would eventually find its way to the merchant's banker and would be set off against his credit in the bank books. If he was in a very large way of business, like the government, and great quantities of his notes were on the market, there would be no difficulty in getting the corn in exchange for a note, if any one wanted it at the price at which the merchant had received it. If no one wanted it at that price, it would remain on the merchant's hands and he would lose the whole price paid. It does not in the least matter to the farmer what view the merchant takes of the transaction. He has disposed of his corn, and never wants to see it again. He has got for it what he wanted, namely money, and that is all he cares about. The same is true with reference to the relations between the government and the gold miners or gold dealers. They dispose of their gold to the mint and in return they get money, and that is all they care about. What the government does with the gold, or what view they take of the transaction is immaterial.

Now if we can conceive our merchant acting as the government does, he might, instead of keeping the corn and issuing his notes or bill, sew the corn into sacks of various sizes, print on the sacks the amount of money he had paid for the corn contained in them and then hand them back to the farmer. These sacks would then be money, and if such awkward money could be used they would circulate just as the notes would and just as our coins do. Debtors to the merchant would have the option of handing them back to him intact in payment of their debts or, it they wished to do so, they could use the corn, and the merchant's obligation would then be automatically can-

celled by their action. The only difference between the sack of corn and the gold coin is one of convenience, the one being large and unwieldy, the other small and portable.

Now what consideration would influence the holder of the sack of corn in his decision - whether to use the corn or keep the sack intact and pay his debt with it? Obviously he would be influenced by the market value of the corn as compared with the amount of debt which could be paid with the obligation. If the market price of corn were superior to the amount of the debt, it would be at once used as corn. If the market price were equal to the debt, part would be used as corn and part would, perhaps, for a time, be used in payment of debt; but all would before long find its way to the mill. If, however, the amount of the debt, as printed on the sack, were superior to the market value of the corn, then the sack would be kept intact and it would be used for paying debt.

It would thus be easy to see from the number of sacks in circulation whether our merchant was buying corn at or above its market price. If he continued buying, and the sucks in circulation continued to increase, it would be a sure sign that they were worth more as money than they were as corn; and when the time came, as it would inevitably come — be he never so rich — when he would no longer be able to provide credits //164// for the redemption of the sacks, their value would fall by the amount which he hail paid for the corn in excess of the price at which the market could absorb it for consumption.

This is one of the most important corollaries to the credit theory. A coin will only remain in circulation for any length of time if its nominal value exceeds the intrinsic value of the metal of which it is composed, and this is true not only theoretically but historically. Indeed, it is so self-evident that it might be received as axiomatic, and would be, had we not involved ourselves in a maze of false ideas.

To apply this corollary to a country like America, where little

gold circulates and the bulk is held by the Treasury against certificates, it may be stated thus: - Gold cannot be held for any length of time against outstanding certificates, without being redeemed, unless the official price at which it is taken exceeds the market value of the gold. Thus stated, the principle cannot be submitted to the test of history, because the hoarding of gold through government action is of modern growth, and since the practice has been adopted, the price has been ruled by law, and we do not know what the market price is. But once we accept the principle (which can be proved historically beyond any reasonable doubt) that the monetary unit is not a weight of metal, and that the word "price" applies equally to gold as to any other commodity, it is obvious that gold against which there are outstanding certificates could no more be held, if required by the market, than can corn or pig-iron against which there are outstanding warehouse certificates. The very expression "market price" means the price at which the "market" will absorb the whole available supply; and it is evident that if the market were calling for gold at the current price, the certificates would soon be presented for redemption. There is at present stored in the United Slates Treasury nearly a billion dollars' worth of gold held against outstanding certificates, and the stock is increasing at the rate of about a hundred million dollars a year. It is obvious that if the official price of gold, the "mint price" as it is called, were not higher than its market value as a commodity, such a situation could no more arise than it could with any other commodity. It is just as if the government bought all the eggs in the country at a given price and kept them in cold storage rather than sell them at a lower price. Of course, a certain amount of the gold is withdrawn for consumption, because it cannot be bought for less than the government price, but, if gold were left to be governed by the ordinary laws of commerce, there can be no question but that the price would fall, to the great loss of shareholders in gold mines and the great benefit of the rest of humanity.

Hence I said in my last article that the governments of the world were holding up gold at a prohibitive price.

If we believed in eggs as we now believe in gold, eggs might now be selling at a dollar a piece. They would pour into New York by the shipload from all parts of the globe. Their arrival would be hailed with delight by the financial papers, and the Secretary of the Treasury, in his annual reports, would express his satisfaction at this visible sign of the sound financial condition of the country. Visitors would troop through the icy corridors of the great government vaults where the precious objects were stored, and would gaze with admiration on the prodigious wealth of the United States. Custard would be a delicacy for the tables of the rich.

Now let us return for a moment to our eccentric corn merchant, and see whether the peculiarity of his situation can throw any more light on the financial position of the United States. We shall, I think, find that it throws a flood of light on the problem of the rise of prices, a problem so grave that no statesman of to-day can afford to ignore a theory which explains simply and naturally how the phenomenon arises, and indicates the means of arresting its progress.

If our merchant persisted in his singular method of business and paid a higher price for the corn than other merchants were willing to pay, corn would pour into his warehouses, and the market would be flooded with his paper or with sacks of corn bearing his obligation for the amount of the purchase price. However rich he might be, his obligations would soon exceed the amount of his credits; the bankers would refuse to take his paper or his sacks at their nominal value, and they would fall to a discount. //165// In vain he would protest that his bills and sacks were good, so long as the sacks were of full weight and that his warehouses contained enough corn to cover the bills at the price at which he had bought it. The bankers would reply that the corn was not salable at his price and that he must meet his obligations in credits, not in corn.

If this is true with reference to our merchant, it must also be true with reference to government issues. If the government is

really buying gold at an excessive price, and if, in consequence, it is issuing its obligations which are immediately payable in excess of its credits which are immediately available, then, its obligations must be falling in, value. Owing to the immense power of the government, partly through its legislative power and partly through the enormous extent of its commercial and financial transactions, it may be possible more or less to conceal the fact. But the fact must be there, if we can discover it. And the fact is there in the shape of rising prices.

First let us see, whether the government is issuing obligations in excess of its credits.

From what I have said in those two articles follows the important principle that, a government issue of money must be met by a corresponding tax. It is the tax which imparts to the obligation its "value." A dollar of money is a dollar, not because of the material of which is made, but because of the dollar of tax which is imposed to redeem it.

But what do we see? The United States government issues its obligations up to any amount in exchange for gold, without the imposition of any corresponding taxation; and the result is that there is an enormous and constantly increasing floating debt, without any provision whatever being made for its extinction. It is true that all the government paper money is convertible into gold coin; but redemption of paper issues in gold coin is not redemption at all, but merely the exchange of one form of obligation for another of an identical nature. This debt at present amounts to nearly three billion dollars, and, of course increases as more and more gold is brought to the mint and returned to the owners stamped with the government obligation, or deposited in the Treasury against certificates. Of this amount, about one-third is normally in circulation. As regards the coins and notes in circulation, the public stands to the government in precisely the same relation as does the holder of a banknote to the bank. The public are depositors with the government. But as regards the bulk of the coins and certifi-

cates, which are not normally in circulation* the public would, if the government were in the same position as a commercial company or a bank, clamor for payment of the debt, and if it were not properly paid, the debtor would be declared a bankrupt. But because we do not realize that the financial needs of a government do not differ from those of a private person, and that we have just as much right to "payment" of a gold coin as we have to "payment" of a banknote, it does not occur to us to make any such demand on the government, and the coins and certificates accumulate with the banks.

Such being the situation, there can, if the Credit Theory is correct, be no question but that the money of the American Government is depreciating. But it will readily occur to those who have read so far that, if this is the case, we should find, in accordance with the principles here laid down, that there would be to-day the same phenomenon as there was in the middle ages when a similar situation arose: - namely two monetary standards, the higher standard being the undepreciated standard of the banks, and the other, with the same name as the former, being the depreciated standard of the government. We might, in short, expect to find two dollars, a "bank dollar" and a "current dollar," and we would then have, just as in the middle ages, two prices for commodities, the bank price being used by wholesale dealers and the current price, which would be he standard of the coinage, being used for the retail trade. We should then probably see the difference, between the two gradually increasing, and retail prices rising while wholesale prices in terms of the bank money remaining more or less stationary.

//166// But we see nothing of all this. On the contrary, there is apparently no special depreciation of the government money, but a gradual rise of prices, a rise which, if it implies the

* Owing to the government policy of monopolizing the issue of money in small denominations, the amount in circulation increases largely at certain seasons of the year

depreciation of any money, implies evidently the depreciation of all money, by whomsoever issued; and there is nothing in the credit theory, if considered by itself, which would lead the student to think that a general fall in the value of bank money or merchants' money would follow an excessive indebtedness on the part of the government.

Assuming then, that the rise of prices does indicate a general depreciation of money, an explanation which is accepted by most writers, and assuming that, so far as the government money is concerned, the depreciation is satisfactorily explained by the credit theory; to what are we to attribute the fact that this depreciation is not confined to government money, but is shared by all the money of the country.

It must be at once admitted that much difficulty surrounds this question. The workings of the forces of commerce that control prices have always been obscure, and are not less so than they formerly were - probably, indeed, more so. The great combinations which are such powerful factors in the regulation of prices in America, and the great speculative financial interests whose operations affect the produce markets, do not let the public into their secrets, if they have any. Though we may talk vaguely about the rise of the cost of production, increase of home consumption, tariffs, trusts, etc. the fact seems to be that we have very little accurate knowledge of how a rise of price of any particular article starts, and until we can get exact concrete information covering in minute detail a great number of transactions both large and small, we shall remain a good deal in the dark as regards the forces behind the vise of prices, whatever theory we cling to. Having made these prefatory remarks, I now proceed to give what seem to me cogent reasons for believing that a depreciation of government money, as distinct from bank money, must, under present circumstances, be followed by a general depreciation of all money throughout the country, that is to say, a general rise of prices, and not by a mere rise of prices in terms of government money, prices in terms of bank money remaining stationary.

Throughout history there seems to have been a general tendency for bank money to follow the downward course of government money sooner or later, and the difficulty of drawing a sharp line between the two would necessarily be greater now than formerly, both owing to the fact that the depreciation of government money in our day is more gradual and therefore more insidious than it formerly was, and because the enormous quantity of government money on the market makes it a much more dominant factor in trade than it was in the middle ages. There are at present as I have just said, nearly three billion dollars of government money in the United States, and the addition of a hundred million a year, though a large amount in itself, is less than four per cent of the whole. Moreover, while the "mutations" in old days took place in a single day, when the coins might be reduced by as much as fifty per cent, in a single edict, the inflation of the government money at the present time takes place gradually day by day, as the gold is brought to the mint. Thus we do not realize that a depreciation is going on.

Again in old days the financial straits of the governments were well known to the bankers and merchants, who knew too that every issue of tokens would before long be followed by an arbitrary reduction of their value. Under these circumstances no banker in his senses would take them at their full nominal value, and it was easy to draw a sharp distinction between government money and bank money. To-day, however, we are not aware that there is anything wrong with our currency. On the contrary, we have full confidence in it, and believe our system to be the only sound and perfect one, and there is thus no ground for discriminating against government issues. We are not aware that government money is government debt, and so far from our legislators realizing that the issue of additional money is an increase of an already inflated floating debt, Congress, by the new Federal Reserve Act, proposes to issue a large quantity of fresh obligations, in the belief that so long as they are redeemable in gold coin, there is nothing to fear.

//167// But by far the most important factor in the situation is the law which provides that banks shall keep 15 or 20 or 25 per cent, (as the case may be) of their liabilities in government currency. The effect of this law has been to spread the idea that the banks can properly go on lending to any amount, provided that they keep this legal reserve, and thus the more the currency is inflated, the greater become the obligations of the banks. The importance of this consideration cannot be too earnestly impressed on the public attention. The law which was presumably intended as a limitation of the lending power of the banks has, through ignorance of the principles of sound money, actually become the main cause of over-lending, the prime factor in the rise of prices. Each new inflation of the government debt induces an excess of banking loans four or five times as great as the government debt created. Millions of dollars worth of this redundant currency are daily used in the payment of bank balances; indeed millions of it are used for no other purpose. They lie in the vaults of the New York Clearing House, and the right to them is transferred by certificates. These certificates "font la navette" as the French say. They go to and fro, backwards and forwards from bank to bank, weaving the air.

The payment of clearing house balances in this way could not occur unless the currency were redundant: It is not really payment at all, it is a purely fictitious operation, the substitution of a debt due by the government for a debt due by a bank. Payment involves complete cancellation of two debts and two credits, and this cancellation is the only legitimate way of paying clearing house debts.

The existence, therefore, of a redundant currency operates to inflate bank loans in two ways, firstly, by serving as a "basis" of loans and secondly by serving as a means of paying clearing house balances. Over ten million dollars have been paid in one day by one bank by a transfer of government money in payment of an adverse clearing house balance in New York.

Just as the inflation of government money leads to inflation of

bank money, so, no doubt, the inflation of bank money leads to excessive indebtedness of private dealers, as between each other. The stream of debt widens more and more as it flows.

That such a situation must bring about a general decline in the value of money, few will be found to deny. But if we are asked to explain exactly how a general excess of debts and credits produces this result, we must admit that we cannot, explain. Or, at least, it must be admitted by the present writer that he cannot explain; though others with more insight into the phenomena of commerce may probably be able to supply his lack of knowledge.

It is easy to see how the price of any particular commodity rises, when the demand exceeds the supply. It is easy to see how the money of any particular country or bank may depreciate, if it is known to be in financial difficulties owing to excessive indebtedness. We can see the machinery at work.

But how are we to see the machinery by which prices are raised, owing to a general excess of debts and credits, where no one recognizes that such an excess exists, when no one realizes that there is any cause for the depreciation of money?

I am inclined to think that the explanation may be found in the disturbance of the equilibrium between buyers and sellers to which I have already referred. Money is easier to come by than it would be under ordinary circumstances, and, while the power of the buyer to obtain the highest possible price for his goods is not diminished, the desire of the buyer to pay as little as possible is lessened, his resistance is weakened, he loses in the tug of war. A general spirit of extravagance is engendered, which enables the seller to win as against the buyer. Money really loses its value in the eyes of the buyer. He must have what he wants immediately, whether the price is high or low. On the other hand, the excessive ease with which a capitalist can obtain credit enables him to hold up commodities speculatively, for a higher price. It puts a power into the hands of the

speculator which he would not normally have.

These, however, are mere suggestions on my part and I do not pretend that they supply a completely satisfactory explanation of the mechanism by which prices are raised. Sellers are also buyers, and buyers are also sellers, and it is by no means clear //168// why a man, in his capacity as seller should have more power one way than as a buyer he has in another.

The whole subject, however, of the mechanism of a rise of prices is one which merits a careful study on the part of those who have a more intimate knowledge of the workings of commerce than the present writer can lay claim to.

Before closing this paper, it may be useful to summarize the principal points which it has been the aim of the writer to bring before students of this most interesting and little understood branch of political economy.

There is no such thing as a medium of exchange.

A sale and purchase is the exchange of a commodity for a credit.

Credit and credit alone is money.

The monetary unit is an abstract standard for the measurement of credit and debt. It is liable to fluctuation and only remains stable if the law of the equation of credits and debts is observed.

A credit cancels a debt; this is the primitive law of commerce. By sale a credit is acquired, by purchase a debt is created. Purchases, therefore, are paid for by sales.

The object of commerce is the acquisition of credits.

A banker is one who centralises the debts of mankind and cancels them against one another. Banks are the clearing houses of commerce.

A coin is an instrument of credit or token of indebtedness identical in its nature with a tally or with any other form of money, by whomsoever issued.

The issue of money is not an exclusive privilege of government, but merely one of its functions, as a great buyer of services and commodities. Money in one form or another is, in fact, issued by banks, merchants, etc.

The depreciation of money in the middle ages was not due to the arbitrary debasement of the weight and fineness of the coins. On the contrary, the government of the middle ages struggled against this depreciation which was due to wars, pestilences and famines - in short to excessive indebtedness.

Until modern days, there never was any fixed relationship between the monetary unit and the coinage.

The precious metals are not a standard of value.

The value of credit does not depend on the existence of gold behind it, but on the solvency of the debtor.

Debts due at a certain moment can only be off-set against credits which become available at that moment.

Government money is redeemed by taxation.

The government stamp on a piece of gold changes the character of the gold from that of a mere commodity to that of a token of indebtedness.

The redemption of paper money in gold coin is not redemption at all, but merely the exchange of one form of obligation for another of an identical nature.

The “reserves of lawful money” in the banks have no more importance than any other bank asset.

Laws of legal tender promote panics.

The governments of the world have conspired together to make a corner in gold and hold it up at an excessive price.

The nominal value of the dollar coin exceeds the market value of the gold of which it is made. Coins can only remain in circulation for any length of time if their nominal value exceeds their intrinsic value.

The issue of coins in exchange for gold at a fixed and excessive price, without providing taxes for their redemption, causes an inflation of government money, and thus causes an excessive floating debt and a depreciation of government money.

Large reserves of "lawful money" in the banks are evidence of an inflation of the government currency.

The inflation of government money induces a still greater inflation of credit throughout the country, and a consequent general depreciation of money.

The depreciation of money is the cause of rising prices.

Review of Mitchell-Innes's original 1913 article

By J. M. Keynes

The following is a reprint of a review originally published in *The Economic Journal*, Vol 24 No 95 (Sep 1914), pp 419-421.

What is Money? By A. MITCHELL INNES. (New York: Banking Law Journal. 1913. Pp. 32. Price 25 cents.)

In his theory of money the author of this pamphlet is a follower of H. D. McLeod. The fallacy - if I am right in thinking that this theory of the effect of credit is a fallacy - is a familiar one, and it will not be worth while to discuss it in this review. The distinctive value of the pamphlet arises from a different source, as indicated below, and the writer's strength is on the historical, not on the theoretical, side.

The author's contention is that, in an overwhelming majority of the instances to be found in recorded history, the currency has been of the nature of an inconvertible currency. "There never was," he says, "until quite modern days, any fixed relationship between the monetary unit and any metal; that, in fact, there never was such a thing as a metallic standard of value." The moneys of account, of which record remains, were for the most part conventional units, depending for their value on custom or on the action of the State, and having fluctuating values, in spite of occasional attempts to steady them, in terms of gold or silver. "If it is true that coins had no stable value; that for centuries at a time there was no gold or silver coinage, but only coins of base metal of various alloys; that changes in the

coinage did not affect prices; that the coinage never played any considerable part in commerce; that the monetary unit was distinct from the coinage, and that the price of gold and silver fluctuated constantly in terms of that unit, then it is clear that the precious metals could not have been a standard of value, nor could they have been the medium of exchange." "There is not, and there never has been, so far as I am aware, a law compelling a debtor to pay his debt in gold or silver or in any other commodity."

This position Mr. Innes endeavours to establish by an historical inquiry, the value of which is, unfortunately, much diminished by an entire absence of any references to authorities. His first examples are drawn from classical times. The ancient coins of Greece and of Rome, according to Mr. Innes, although composed of the precious metals, are so extraordinarily variable in size, weight, and fineness that it is hardly conceivable that the value of the monetary unit depended on the amount of valuable metal in the coins. The coins, therefore, were all token coins, their exchange value as money differing in varying degrees from their intrinsic value. The bulk of his instances, however, are drawn from the early monetary history of France. We find here, throughout, considerable persistence in the name of the conventional money of account, constant variation in the weight and alloy of the coins, and a profit always accruing to the authority issuing the coins. "The only reason why the intrinsic value of some of the coins ever equalled or exceeded their nominal value was because of the constant rise of the price of precious metals, or (what produced the same result) the continuous fall in the value of the monetary unit."

Mr. Innes's next point is that the idea, that "in modern days a money-saving device has been introduced called credit, and that, before this device was known, all purchases were paid for in cash, in other words in coins," is simply a popular fallacy. The use of credit, he thinks, is far older than that of cash. The numerous instances, he adduces in support of this, from very remote times are certainly interesting. "For many centuries,

how many we do not know, the principal instrument of commerce was neither the coin nor the private token, but the tally, a stick of squared hazel-wood, notched in a certain manner to indicate the amount of the purchase or debt. . . . By their means all purchases of goods, all loans of money were made, and all debts cleared. The clearing houses of old were the great periodical fairs, whither went merchants, great and small, bringing with them their tallies, to settle their mutual debts and credits. . . . The relation between religion and finance is significant. It is in the temples of Babylonia that most, if not all, of the commercial documents have been found. The temple of Jerusalem was in part a financial or banking institution, so also was the temple of Apollo at Delphi. The fairs of Europe were held in front of the churches, and were called by the names of the Saints, on or around whose festival they were held. . . . There is little doubt to my mind that the religious festival and the settlement of debts were the origin of all fairs, and the commerce which was there carried on was a later development. If this is true, the connection between religion and the payment of debts is an additional indication, if any were needed, of the extreme antiquity of credit."

Mr. Innes's development of this thesis is of unquestionable interest. It is difficult to check his assertions or to be certain that they do not contain some element of exaggeration. But the main historical conclusions which he seeks to drive home have, I think, much foundation, and have often been unduly neglected by writers excessively influenced by the "sound currency" dogmas of the mid-nineteenth century. Not only has it been held that only intrinsic-value money is "sound," but an appeal to the history of currency has often been supposed to show that intrinsic-value money is the ancient and primitive ideal, from which only the wicked have fallen away. Mr. Innes has gone some way towards showing that such a history is quite mythical.

J. M. KEYNES

Bibliography and references

Berkeley, George (1735-7), *The Querist*

Graeber, David (2011), *Debt, the first 5,000 years*

Heinsohn, Gunnar (1984), *Privateigentum, Patriarchat, Geldwirtschaft. Eine sozialtheoretische Rekonstruktion zur Antike.*

Ingham, Geoffrey (2004), *The Nature of Money*

Mcleod, Henry Dunning (1889), *The Theory of Credit.*

Martin, Paul C. (1986), *Der Kapitalismus.*

Mitchell-Innes, Alfred (1913), *What is Money?* Banking Law Journal (May)

Mitchell-Innes, Alfred (1914), *The Credit Theory of Money*, Banking Law Journal (January)

Nakamoto, Satoshi (2008), *Bitcoin: A Peer-to-Peer Electronic Cash System*

Kennedy, Margrit (1990), *Geld ohne Zinsen und Inflation.*

Knapp, Georg Friedrich (1905), *Staatliche Theorie des Geldes.*

Sigurjónsson, Frosti (Edition 1.0 March 2015), *Monetary Reform, A Better Monetary System for Iceland*

Wei Dai (1998), *b-money*

Wray, L. Randall (2004), *Credit and state theories of money: the contributions of A. Mitchell Innes.*