

Disputed Information in Money as Debt (the original 2006)

[home](#) • [references](#) • [Comments 1](#) • [Comments 2](#)

There are two important issues in the movie that have been disputed and need to be explained. My apologies for taking so long to post these explanations on this website.

The first is the "high-powered money" cash reserve of \$1111.12 enabling the initial creation of a \$10,000 loan and a total of almost \$100,000 of bank credit "cheque book money" as it is re-deposited throughout the banking system. It is claimed that this is not how central banks currently operate and that I have exaggerated the cash to credit created ratio by a factor of 10. This is a significant matter but one of detail not principle.

The **second disputed issue** is central to the whole point of the movie: the contention that interest makes debt unpayable and defaults inevitable unless the money supply is constantly growing. It is claimed that, as interest is spent by the bank it is made available to pay interest over and over again and thus there is no shortage of money to make interest payments, no inherent money supply growth imperative, and no inherent need for the real economy to grow to prevent inflation.

I shall deal with each separately.

Disputed Information #1

"High-powered Money"



email received from Belgium:
Dear Paul

It is very interesting film but I do have one question. In Wikipedia there is an article about fractional banking system and they use similar calculations as in your film only with the ratio 1:4 and starting with 100 dollar and the money is also coming from Central Bank.

See http://en.wikipedia.org/wiki/Fractional-reserve_banking

The whole difference in their calculations is lying in the Step 1. In your film the loan that can be made is 10,000 dollars = 9x1111.12 dollars. They (in Wikipedia) start in Step 1 immediately with dividing the 100 dollars by 4 and creating the loan of only 80 dollars.

In subsequent steps you, as well as Wikipedia authors divide the money deposited by the ratio 9 or 4 and further loans are created.

Which one is true?

Taking into account that more than 2 millions people have watched your film and surely tens of thousands have read that Wikipedia article let's clear this difference.

Who is right?

My answer

The Central Bank Cash Reserve

The Banking Dictionary defines Legal Reserves (in the USA) as:

Portion of demand deposit and time deposit account balances, plus cash in a bank's vault, that can be used to meet Reserve Requirements of the Federal Reserve System. Legal reserves must be kept in a prescribed form, either as vault cash or a deposit in a checking account at a district Federal Reserve Bank.

Legal reserves are a source of bank liquidity, because they can be converted to cash to pay depositors. The Federal Reserve Board regulates credit in the banking system by adjusting the reserve requirements that banks are required to keep. Raising the reserve requirement drains credit, because banks have to keep a higher percentage of deposit accounts in a noninterest earning account at the Fed; lowering the reserve requirement expands credit because banks then have more funds to put out in new loans.

The Monetary Control Act of 1980, which extended reserve requirements to state banks, phased in over an eight-year period, allows state banks to use their checking account in a Federal Reserve Bank to meet state reserve requirements, if allowed by state law.

The method of central banks injecting new money as described in Wikipedia (and **Modern Money Mechanics**) is **not the same** as the central bank cash reserve as described in the movie. I did not want to begin my "illustrate in a simple way" by explaining Open Market Operations. The general audience can only absorb so much of this information before they stop taking it in. To load them up with a complex explanation at the beginning would

ultimately cause an overload of information and subsequent loss of attention later.

When I made Money as Debt I had the assistance of 4 consultants who all had much more experience and knowledge of the money system than I did. Two of them were the source of this idea. None of them flagged this point as a problem. However, it has been one of two main criticisms of my movie and in the revised edition will be replaced with less contentious information. Unfortunately, if this information is actually misleading, it is rather late to correct it given that millions have already viewed the movie. The best I can do is post this explanation on the references section of my website.

One of my consultants is a monetary historian and has been called as an expert witness to testify in cases against the banks in Canada's federal Supreme Court as well as British Columbia's Supreme Court. His energies largely go into investigating how banks bend the rules. It was his contention that, regardless of the rules, not only did banks do as I described in the movie, in times of tight credit, banks would raise some of this cash reserve by charging the borrower a "loan fee", getting the borrower to provide some of the cash reserve for his own loan.

However, the rules as explained by critics is that this "statutory reserve", if it were a 9:1 requirement, would have to be a portion of "deposits". Thus the bank would need to have a deposit of \$10,000 to make such a central bank deposit. But... a deposit can simply be bank credit not cash. In this case, it is clearly cash that is being deposited at the central bank and I was told by a very senior Canadian economist that, if this system were still in place, an \$1,111.12 cash deposit at the central bank would indeed entitle the commercial bank to borrow \$10,000 cash from the central bank at a 9:1 ratio. If the initial \$10,000 car loan had to be honoured in cash, the bank would be able to borrow the needed cash from the central bank.

Borrowing cash from the central bank would certainly not be desirable as such loans are short term and interest has to be paid. However, ***the entire banking system operates on the calculated risk that we won't demand cash,*** that we will use bank credit (cheques) instead of cash for our transactions.



If the loan withdrawal is by cheque, the net transaction effect of a loan from one bank becoming a deposit at another and vice versa generally cancels out the need for any cash. Transactions are carried out with bank credit alone.

Cash to Credit Ratio

In my movie, the simplified example I provided suggests that \$1,111.12 in CASH can be the basis for up to \$100,000 in ultimate credit issue. I did not say that this \$1111.12 was the **only** cash the bank had. I merely stated that such a deposit of cash at the central bank would **legally allow** the bank to create a loan of \$10,000. In fact, once in operation, one would reasonably expect that this new bank would also need a cushion of vault cash to meet daily withdrawal requirements IN ADDITION to the cash reserve deposited with the central bank.

However, if it is interpreted to mean that this is all the cash the bank has, the ratio of cash (\$1111.12) to total credit issued (\$100,000) would be 1.1 %. This has been criticized as a ten-fold exaggeration. However, on the Wikipedia page http://en.wikipedia.org/wiki/Fractional-reserve_banking there is a bank balance sheet for ANZ National Bank Limited that shows the bank to have cash reserves of just 0.79%. So my implication is within the range of real life possibilities.

Is it true as a worldwide generalization? That would be very difficult to determine.

The Wikipedia page quoted below in blue describes required cash reserves which vary widely from country to country (from zero to 80%) and include many significant exceptions where no reserves are required. The figures for the Bank of England's voluntary reserve ratio system suggest that banks, left to their own devices, are comfortable with cash reserves of 3.1%. But this figure probably does not include government debt which is generally excluded because governments don't ask banks for cash; everything is done by cheque.

In the example provided in the movie, I prefaced this explanation by saying "to illustrate this in a simple way". I thought this was a valid simplification that got across the idea of "membership" in the central bank system, providing the bank with money creation privileges in exchange for proof of cash reserves. It was a choice I now regret, as it could have been alternatively explained quite simply as the revised script below in red now does.

Today, a bank's reserves consist of the amount of government-issued cash or equivalent that it has in its vault or deposited with the central bank, and the amount of already existing debt money the bank has on deposit.

To illustrate this in a simple way... let us imagine that a new bank has just started up and has no depositors at all yet. The bank's investors have paid for the bank's infrastructure and a supply of cash to meet the demand for cash withdrawals. Typically, cash in the vault will amount to no more than one dollar for every 20 or 30 dollars that could be demanded from the bank. The bank has joined the central bank system, which permits the new bank to borrow cash from the central bank if needed.

from http://en.wikipedia.org/wiki/Reserve_requirement

A cash reserve ratio (or CRR) is the percentage of bank reserves to deposits and notes. The cash reserve ratio is also known as the cash asset ratio or liquidity ratio.

In the United States, the Board of Governors of the Federal Reserve System requires zero percent (0%) fractional reserves from depository institutions having net transaction accounts of up to \$9.3 million.[1] Depository institutions having over \$9.3 million, and up to \$43.9 million in net transaction accounts must have fractional reserves totaling three percent (3%) of that amount.[1] Finally, depository institutions having over \$43.9 million in net transaction accounts must have fractional reserves totaling ten percent (10%) of that amount.[1]

However, under current policy, these numbers do not apply to time deposits from domestic corporations, or deposits from foreign corporations or governments, called "nonpersonal time deposits" and "eurocurrency liabilities,"

respectively. For these account classes, the fractional reserve requirement is zero percent (0%) regardless of net account value.[1]

The Bank of England holds to a voluntary reserve ratio system. In 1998 the average cash reserve ratio across the entire United Kingdom banking system was 3.1%. Other countries have required reserve ratios (or RRRs) that are statutorily enforced (sourced from Lecture 8, Slide 4: Central Banking and the Money Supply, by Dr. Pinar Yesin, University of Zurich (based on 2003 survey of CBC participants at the Study Center Gerzensee[2]):

Australia None	Canada None	United Kingdom None	Mexico None	New Zealand None	Sweden None
Eurozone 2.00	Slovakia 2.00	Switzerland 2.50	Poland 3.50	Chile 4.50	Pakistan 7.00
Latvia 8.00	India 5.00	Burundi 8.50	Hungary 8.75	Ghana 9.00	United States 10.00
Sri Lanka 10.00	Bulgaria 12.00	China 15.50	Estonia 15.00	Zambia 17.50	Hong Kong 18.00
Croatia 19.00	Tajikistan 20.00	Surinam 35.00	Jordan 80.00		

Note that the chart above gives the USA cash reserve ratio as 10% when the actual ratios stated in the text above the chart are more complex, significantly lower and with many cases of zero reserve. I have no idea how significant the exceptions to the stated percentages for other countries might be.

I notice on these Wikipedia pages that there is a lot of discussion and disagreement about what the details really are. However, the section of my movie being questioned ends with the statement:

"So...while the rules are complex the common sense reality is actually quite simple. Banks can create as much money as we can borrow."

This is the real point I was intending to make and so far no one has disputed it with me.

To conclude:

The process described in Wikipedia and **Modern Money Mechanics** by which central banks add to or subtract from the base money supply by buying or selling government bonds through Open Market Operations is a **different thing altogether** than the cash reserve at the central bank described in my movie. In my attempt to keep the explanation simple, I may be guilty of creating a scenario that is not literally true, at least not according to the rules, which are no longer practiced anyway, and I may have implied an exaggeration of the cash to credit ratio in the **regulated** banking system as a whole. **However, if derivatives are added to the picture, as a measure of total credit issued relative to physical cash in hand in the banking system, it is a huge understatement.**

I hope this explanation is satisfactory. It is a daunting task to try to simplify all this highly complex information and make an entertaining cartoon out of it. Simplifications almost always create inherent falsehoods as subtleties and details are discarded.

But simplifications are necessary. I am attempting to create understanding amongst the public who generally have not thought about any of this before and are usually somewhat resistant to trying. It is no use getting all the details perfect if you have lost their attention, comprehension and interest in the subject. I have saved my best attempts at

real explanations for the sequel.

Comment

There is one other point I would like to make. Some commentators on those Wikipedia pages and elsewhere dismiss my movie as trying to make a 'conspiracy theory' out of well known facts taught in first-year economics.

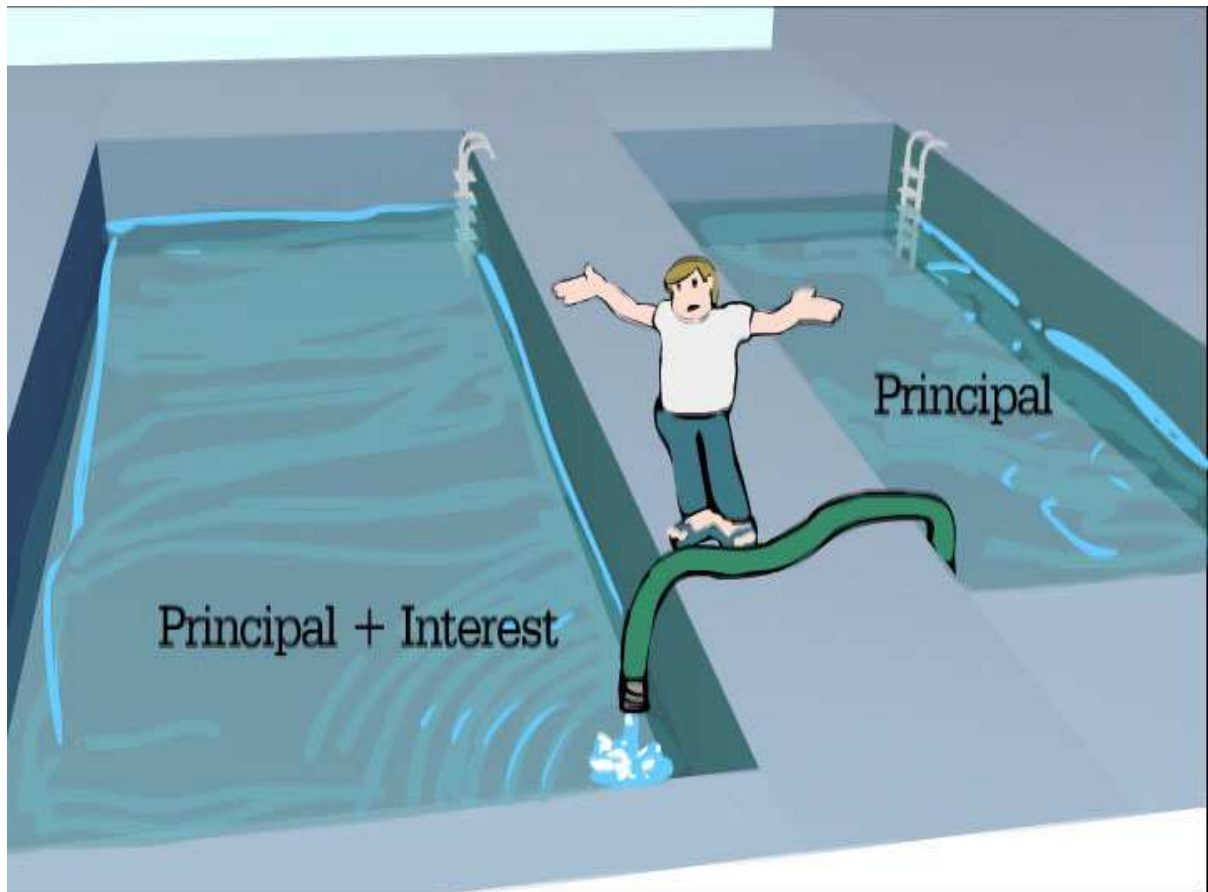
Well... my answer to that is that is I have received emails from bankers and **graduates** of economics thanking me for clarifying the money system for them. I have been informed that my movie has been used in economics classes, even at the post-graduate level, and has been shown at both the London School of Economics and the Kofi Annan School of Economics. Perhaps they showed it just to pick it apart but that is not what was reported to me. One economics professor thanked me for saving him a month of teaching! Apparently, the conventional teaching of how money is created fails to create a clear picture for a lot of people... even students of economics.

Most people go from birth to death without giving the origins of money a single thought. My goal is to help educate the public sufficiently so that they will be able to come to an informed opinion on this system which, as it is currently breaking down, is adversely affecting everyone. I know from showing the movie personally, and by the flood of appreciative emails I have received, that most of the audience is shocked and dumbfounded by the revelation that money is literally debt.

"It is well enough that people of the nation do not understand our banking and monetary system, for if they did, I believe there would be a revolution before tomorrow morning." ~Henry Ford

Disputed Information #2

The Unpayability of Interest Necessitates Perpetual Growth of the Money Supply (Debt)



email received:

The video repeats the fallacy that not enough interest is created to repay all the debt. This is not true. Actually, when you make a loan payment, only the principal portion is destroyed. The interest portion goes to bank revenue. That money is re-spent in the economy by the bank or its shareholders and eventually goes towards principal on someone's loan payment. All the loans could technically be paid off without creating any more money.

Unfortunately, the video makes this fallacy a central thesis and ties it to unsustainable economic growth and growing economic disparity. I don't disagree with the conclusions, just with the reasoning behind it. I would rather point the finger at centralized nature of the monetary system which inherently allows a few to exert control over the direction of the economy for their own benefit.

my answer:

Obviously, I don't think it is a fallacy. It is true that IF 100% of the interest is recycled back into the economy, all the interest payments can be made. This point was clearly stated in the movie. The big question is... does this happen?

It is correct that the movie oversimplified the issue of the unpayability of loans. The full explanation is so complex I thought even a glimpse of this complexity would derail the narrative for most people, so I merely gave the two extremes. The first, the two swimming pools image is **the PROBLEM** in which **zero interest is recycled** and then I

gave **the SOLUTION**, guaranteed **100% recycling of interest** which I believe could only be accomplished by non-profit banking for the public benefit, where interest income is 100% returned to the populace at large, perhaps as a guaranteed annual income.



But critics insist that 100% recycling of interest happens now and there is no problem. I disagree.

Yes, the banks spend **most** of the interest they take in on interest to depositors, wages, rents, dividends etc. so that **most** of the interest money is available to be re-earned to pay interest over and over. However, for there to be NO shortage ALL of the interest money has to be spent. Otherwise there is a shortage.

My contention is that the idea of 100% recycling of interest in the current system is just as simplistic as my two swimming pools illustration. Banks use their profits to seek more profits. As well, non-bank lenders re-lend money that comes into their possession adding additional layers of interest. This theory also assumes the existence of a uniform money supply accessible to all when in reality we have a stratified money supply with a bias to move upwards from those who have little to those who have excess, because those who have excess money can easily gain more via lending it at interest. This leads to vast amounts of money being routed into the gambling economy of high finance (like the foreign exchange market) where it is not available to be earned by the borrowers who created it.

Secondary Lending of Existing Money

A dollar that was borrowed into existence as Loan 1 from a bank is re-lent as Loan 2 from a non-bank. Now it has 2 interest charges on it and, to the extent the non-bank moneylender rolls the principal amount over forever, **NONE of this money is available to pay off Loan 1 except as another loan at interest.**

Non-bank lenders make up a significant portion of lenders. In addition, consider everyone who has money and expects a return on it. Investment may create new real wealth but in this system, **only more debt can create more money.** So every expectation of profit from money invested or loaned creates demand for more money which can only be

1. taken from someone else, (zero sum) likely causing someone in the system to default.

2. created as more debt. (monetary expansion)

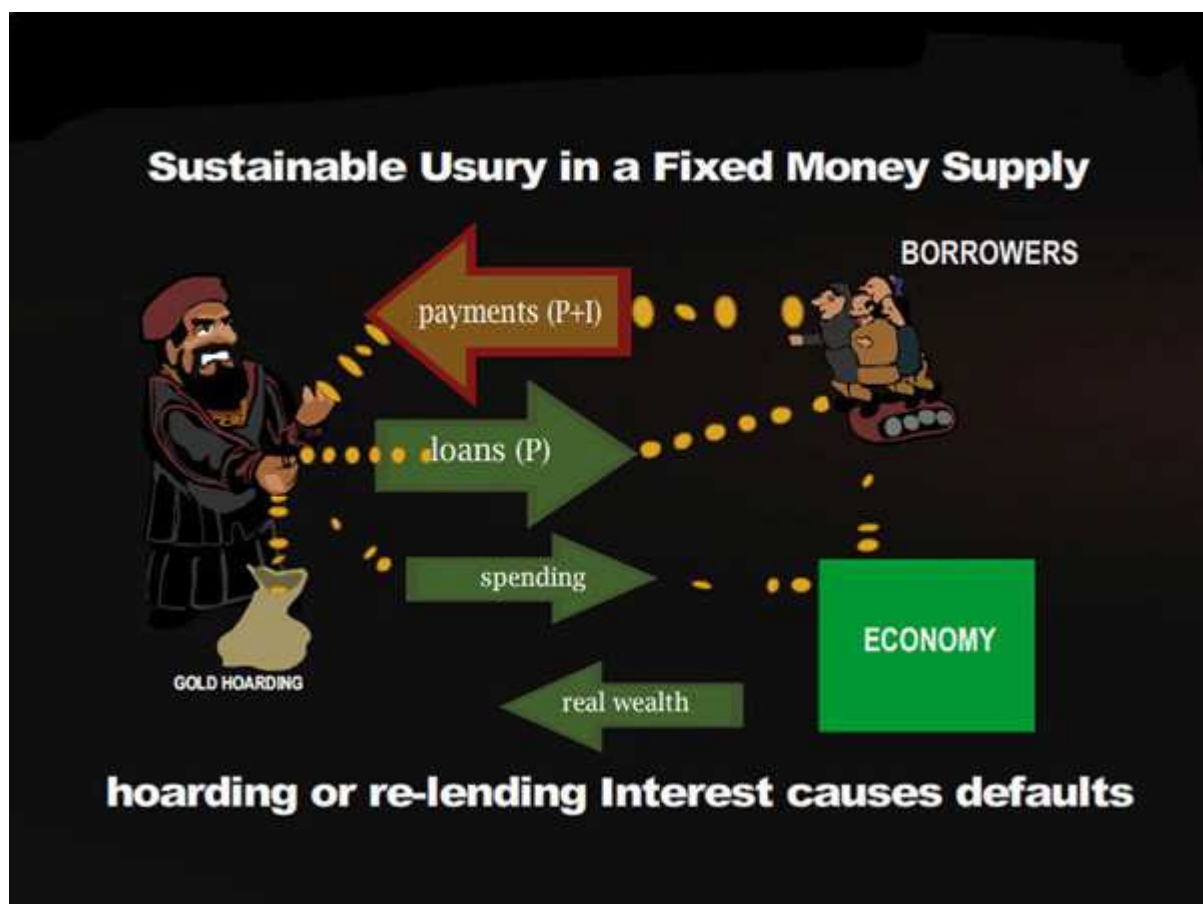
IF there were a single cycle of lending, interest could be charged and spent sustainably.

The justice of it could be questioned but the arithmetic itself would not force inevitable defaults.

Sustainable Usury in a Fixed Money Supply

The situation is best illustrated by imagining lending using a fixed supply of coins. As long as 100% of the interest is spent on real goods and services, and all of the principal re-loaned, the fixed quantity of coins stays in circulation and is available to be **EARNED** repeatedly by the borrowers.

This is a fundamental principle. Interest and dividend profits can be taken in the form of real goods & services, but the **MONEY taken in as interest must be SPENT so that it can be EARNED repeatedly, not re-lent at interest nor withdrawn from the cycle (hoarded).**



It should be noted that the moneylender can put everyone into default simply by stopping his loans and hoarding the coins. However, we shall assume that the moneylender is quite happy to re-loan his principal indefinitely.

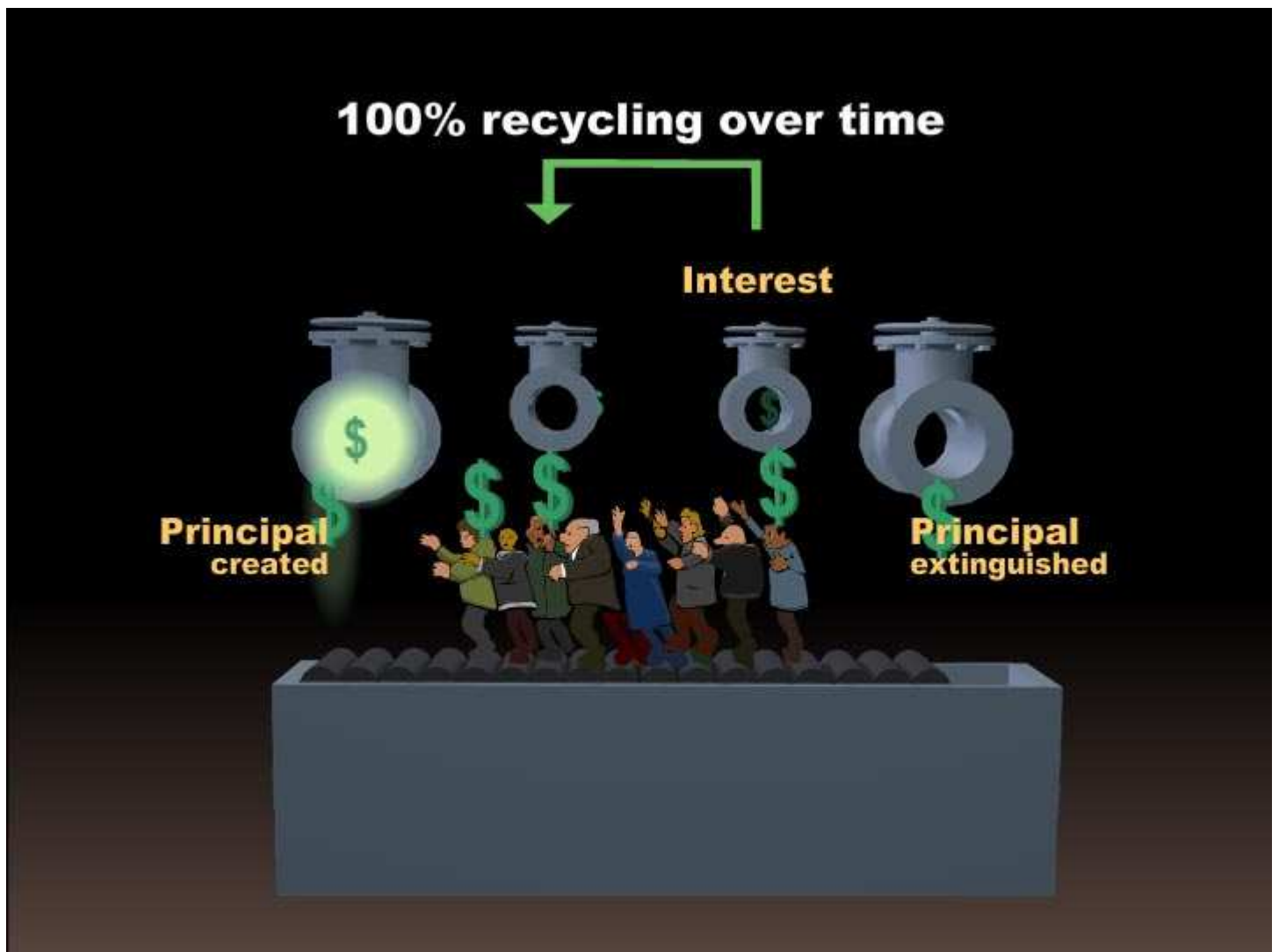
Now just imagine if someone in the economy, is not in debt and is free to re-lend his coins, (which were borrowed by someone else) at interest. Even if that secondary lender spends all of the interest coins he takes in, (thus creating his own sustainable cycle), none of the coins will ever be available to pay off the initial loan, except as a loan at interest from the secondary lender. Thus the total interest burden in the system has increased necessitating **increased economic activity** (growth imperative) to pay it. And... the **debt becomes perpetual**. It can never be paid off without re-borrowing.

Debt-based Money

Now update this to the debt-money system where the supply of money is NOT FIXED and **debt has to be perpetual** because **if there is no debt there is no money**. In this system, principal payments EXTINGUISH money and **new loans are the only way to CREATE** money.

Despite these differences, it is still true that, if there is only a single loan cycle and the bank spends 100% of the interest it takes in, there is no shortage of money and all payments can theoretically be made.

If, however, the bank uses interest income as any form of investment for gain instead of spending it, the increased volume of investment generates demand for increased returns from the same limited amount of money created by the original loan. If interest income from the original loan is re-lent at interest, part of that original limited amount of money is now diverted into its own repayment cycle where **it can only be borrowed to pay off the original loan**.

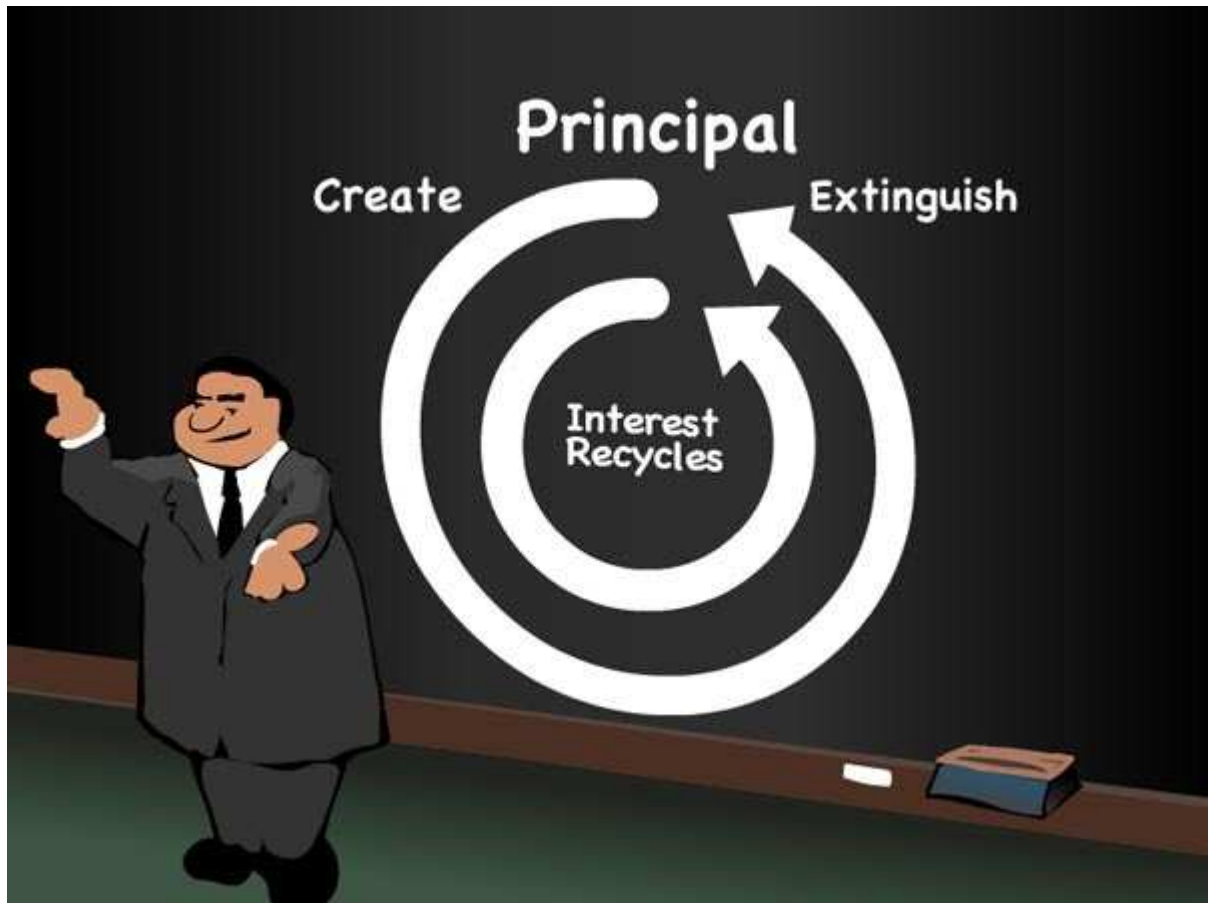


"STOCK" and "FLOW"

The theory that all payments can be made rests on the idea that interest payments are SPENT by the lender and constitute a FLOW of money that makes up for the apparent shortage in the STOCK of money. Let us imagine that a banker created \$1000 and demanded \$1100 in ONE repayment, and this \$1000 was all the money that existed (the STOCK). It would clearly be impossible to pay \$1100 with only \$1000 in existence. However, if the banker demanded the \$1100 in **several payments** and spent all of the interest (100% FLOW) the interest money would be

available to pay the interest charges over and over again and there would be no shortage.

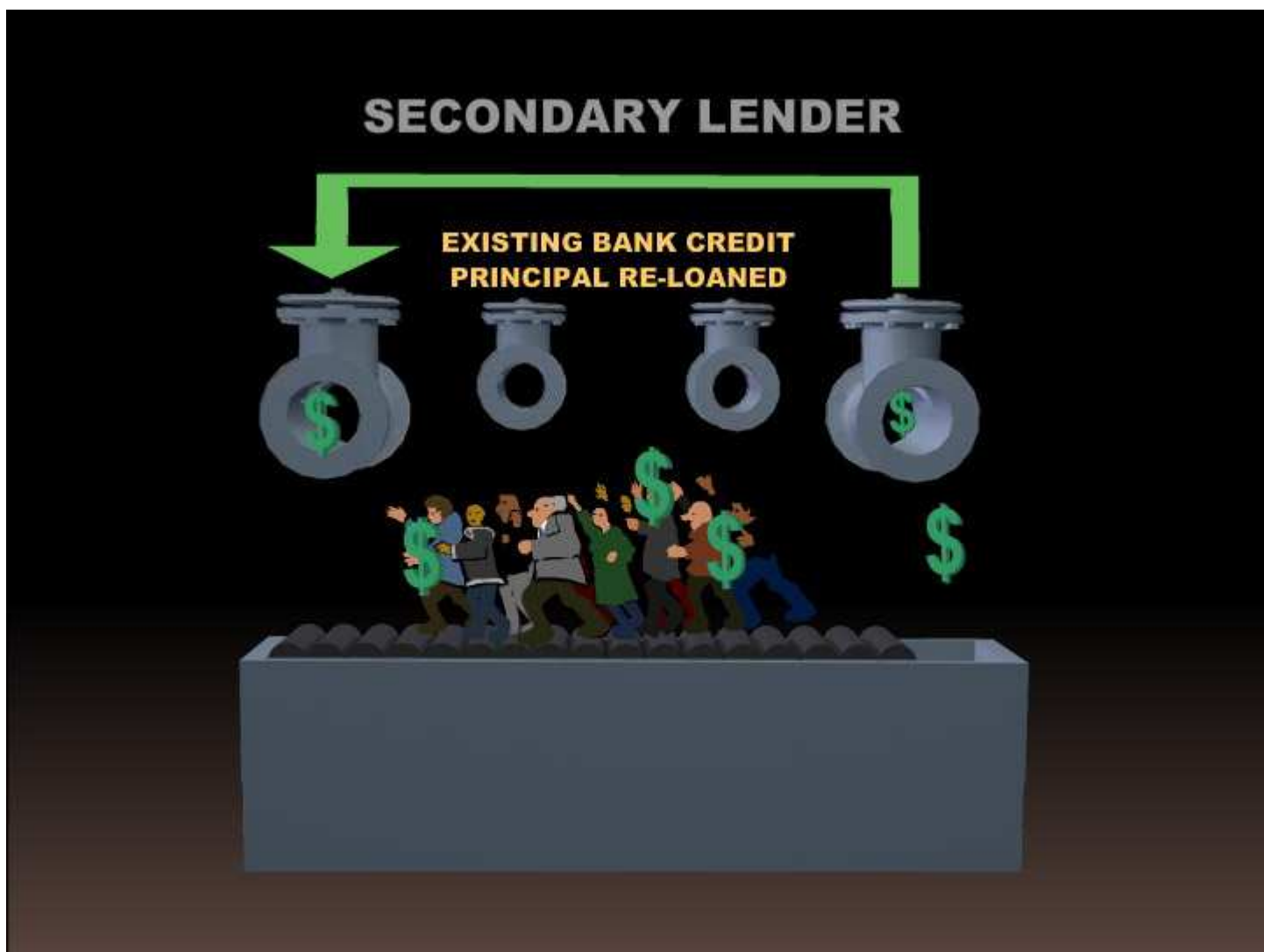
The theory is quite elegant in its simplicity but does it represent reality?



The Problem

If, say \$100 created as part of a much larger initial loan by a chartered bank falls into the hands of someone who does not need to spend it, that individual or corporate entity may choose to loan this \$100 at interest, thus creating a second loan of the same money.

This "secondary lender" DOES NOT CREATE MONEY. Principal payments are not EXTINGUISHED. Instead, the **Principal is endlessly recycled into new loans** and the lender makes a living by spending all of the Interest. If the lender spends 100% of the interest, this will be a closed and sustainable loop just like the initial loop *could* be if there were no secondary lenders.



However, the \$100 the secondary lender is perpetually recycling is part of the STOCK of money created by the chartered bank loan. The chartered bank loan cannot be retired without this \$100.

So... if we consider a simplified and idealized charter bank loan process, as illustrated in the animation below, the first payment has to be from stock, namely the money created by the loan, because before any interest is paid and recycled, only stock exists. The second payment is mostly recycled interest (flow) from the first payment spent by the lender. Subsequent payments consist of an increasing portion of principal (stock) and a decreasing portion of recycled interest (flow) until the last payment is all principal and extinguishes the stock altogether.

In the animation below, using artificially simple-to-follow numbers, there are four things to observe: **time, payments, the interest** portion and the **principal** portion of those payments. The green line represents the lender spending the interest. The red flash is the principal portion of the payment being extinguished. On top, the remaining principal or stock of money is counted down to zero. On bottom is the running total of payments made.

So... the originating loan comes down to the last payment and the stock is missing \$100 because the secondary lender has it. And the only way it can be made available to pay off the loan that created it is by someone borrowing it at interest.

Suppose it is borrowed from the secondary lender, circulates and is earned by the original borrower. The borrower uses that \$100 as the last payment of the originating loan. The last payment is all principal. This money ceases to exist. There is no stock of money left from this loan.

But the secondary lender wants his \$100 back plus interest. That money DOES NOT EXIST. It can only be created by someone borrowing it into existence from a chartered bank.

Someone does this, the \$100 circulates, is eventually earned by the secondary borrower and gets paid to the secondary lender. But now someone is in debt to the chartered bank for \$100 plus interest and that \$100 is only available to be borrowed from the secondary lender again.

We can borrow from one to pay the other forever, but...on a system level, we can never get out of this debt and every time we borrow from Peter to pay Paul and vice versa we incur another interest charge that requires more economic output to pay off. Therefore, it is my conclusion that an economic growth imperative is caused by a structural shortage of money that is caused by the ***mere existence*** of secondary lenders.

And... so far we have assumed a policy of 100% recycling of interest on the part of those lenders. In reality, most secondary lenders are lending money in order to ***increase their pool of principal***. To do so the lender adds some of its interest earnings to the principal it lends out. Therefore, the borrowers in the secondary lender's loop are always short of the flow of money they need to make payments, which exhausts the stock of money created by the loan BEFORE the loan is paid off. This situation that can only be remedied by creating even MORE money. And the only way to do that is by borrowing it into existence from a chartered bank.

Thus, according to this analysis, the source of the perpetual growth imperative can be attributed to two factors that prevent 100% recycling of principal and interest, namely...
using interest income to increase the pool of principal and ***secondary lending*** itself.

Defenders of the "no shortage theory" argue that there can never be a shortage because the "flow" can be speeded up. We just need to work harder to pay the extra charges. But "speeding up the flow" means increasing earning and spending i.e. Gross Domestic Product, economic growth.

This just ***proves what I claimed in the movie...*** that a structural money shortage necessitates ***constant expansion of the real economy***. With this argument, *my critics prove me correct*.

And, because most loan repayment schedules are fixed and most people work at jobs that use up all of their time and energy for a relatively fixed amount of pay, the ability to "speed up the flow" by working more is ***limited***.

At some point we can't, don't want to, don't need to... work harder, make more stuff ... use more resources... for what? to support moneylenders in the style to which they have become accustomed? At some point the real economy which is limited by resource availability, time constraints and real needs cannot keep up with the unlimited profit demands of the financial economy, which ignores all such restraints.

Thus, it is my contention that, as our current system is structured, loans in the aggregate, are all essentially ***"impossible contracts"***. In the absence of constant monetary (debt) growth, someone must always default as a direct result of the arithmetic alone. The explanation in Money as Debt is somewhat misleading to the extent that it suggests that interest itself is the cause of the arithmetic problem. The problem is actually caused by ***the failure to recycle both principal and interest 100%***.

However, in my defense, the fact that ***money supply is dependent on constantly renewed bank credit***(principal, stock) was clearly stated and illustrated (below), as was the idea that ***100% recycling of interest would eliminate the problem***.



Conclusion:

I did drastically oversimplify the issue in Money as Debt. It was a difficult decision and a cause of argument between myself and Bob Bossin while recording the voiceover. But I did so because even a hint of the real explanation would open up this mind-bending world of complexities. That would have derailed the narrative and lost most of the audience for sure.

Criticism of my oversimplification is valid. But the theory that there is always enough money to make all payments cannot be true as long as money is borrowed from secondary lenders and lenders add interest income to principal. The world contains many such lenders. In fact, for a lot of people, it is their goal in life.



I have spent many months just on the part of my sequel that deals with this reasoning. I hope the illustrated arguments as set forth in **Money as Debt II, Promises Unleashed** will shed useful illumination on this most difficult and controversial topic.

Your [comments on my reasoning](#) are welcomed.

Paul Grignon