15 Joseph Huber

Any solution needs to follow from an accurate analysis of the problem it is meant to solve. To quote the professor, “The reason for the structural non-safety of bankmoney is its just fractional base of cash and reserves.” By “non-safety” I assume he means subject to periodic default crises as experienced in 2008 and repeatedly throughout recent centuries. Depositors lose their deposits and banks go bankrupt.

Professor Huber provides a chart that shows the proportion of central bank money (cash) to bankmoney (bank credit) since 1905 suggesting that the increasing share of commercial bank credit over the past century till now is the root cause of the system’s “inherent instability”. Therefore, reversing the trend should increase stability.

Correlation isn’t causation
At https://en.wikipedia.org/wiki/List_of_banking_crises there is a long list of bank failure crises in several different countries since 1763. No doubt the proportion of bank credit to cash money (in whatever form) varied widely in all of these situations. Without proving causation for each of these banking crises, there would seem to be no compelling reason to assume they arose due to an excessive proportion of commercial bank credit.

Defaults are caused by the borrowers’ inability to pay back their principal debts with either bank credit or cash. Therefore, it is far more logical that these banking crises were caused by total principal debt far exceeding the total bank credit and cash money available to pay it, what I call “impossible principal debt”. Impossible principal debt is caused by concurrent re-lending of the same money. Impossible principal debt in the aggregate can be serviced by velocity as long as money repaid is promptly re-lent in full, but the amount of it can never be eliminated, nor even shrink without causing mathematically inevitable defaults.

In the bank credit system, the bank has to eliminate the unpaid amount of a defaulted upon loan from its own earnings. A default occurs when a borrower can’t pay back and eliminate the principal the borrower created. Bankruptcy occurs when the total of defaults overwhelms a bank’s capital reserves which are defined as: “common stock and retained earnings”. A banking crisis occurs when too many borrowers default at the same time. Does it matter to the bank whether they fail to pay back their bank credit debt in cash or bank credit? I think not.

It’s the Lending Itself
Lending of *any* form of money is inherently “unsafe” because its continued success (stability) depends entirely on the ability of the great majority of borrowers to repay their principal debt to the lender. What would cause a great mass of borrowers to default at the same time and bankrupt the lender?

For one thing, the banks themselves encourage long term savings. Savings are generally misconceived as a “foundation” of the system, a store of value, when in fact, they are someone else’s principal debt to a bank that the borrowers that created it cannot earn.

Savings make the money the borrowers need to pay off their principal debts *indefinitely unavailable* to them. By the simplest of logic, an increase in the ratio of savings as a proportion of the money supply, plainly evident from central bank money supply statistics, is proof that even more debt-created money has been made unavailable to the borrowers that need it. At some point, velocity can no longer sustain this ever-climbing ratio of impossible principal debt to available money and the cascade of defaults begins and continues until velocity can once again sustain the impossible principal debt.

Thus, by its own design, the banking system, regardless of whether all money is bank credit, gold coins, fiat cash, CBDC or Bitcoin, deliberately creates the impossible principal debt that makes the “bank money regime” “unsafe”.

Created as debt and then re-lent as “loanable funds”
In addition, the non-bank lending sector, which is usually at least as large as bank money-creation and ultimately unmeasurable, lends existing money, which, by definition, is someone else’s principal debt to a bank. This process is then repeated, creating a theoretically unlimited number of concurrent principal debts of the same money. The real world limit is how many times the same money can be re-lent concurrently before a mass default event occurs.

Most money is lent as mortgages, often for 30 years. Because most of the interest is paid in the first 20 years of the repayment schedule, about half of the outstanding principal (bank credit) is still in circulation after 20 years.

This begs the question: How many times can the same dollar or euro be acquired by a non-bank lender, whether institution or individual, and be re-lent over a period of 20 to 30 years?

Economists never ask this question. Professor Huber clearly has not. A “solution” to eliminate the “inherent instability” of the money system must take into account how the whole money system actually works, not just how money is created. In a money system that, as Huber later comments during the final discussion, must run on debt *by necessity*, how can multiple concurrent principal debts of the same money be so universally ignored?

Conclusions
It should be obvious that it is impossible to eliminate or even reduce multiple concurrent principal debts of the same money without default. Yet, no one in economics that I have ever read, and not one of the presenters at this conference has shown even the slightest indication that they have ever thought about it.

It should also be obvious that, as these non-bank principal debts multiply over time, the inevitable result is the “grow-or-collapse imperative” that causes periodic debt crises and blew up the world economy in 2008.

It is simple logic that sovereign money would tend to increase the lending of already lent money, as creating new money would be restricted by a misguided debt-reducing policy. Therefore, it follows that the impossible principal debt I have described in detail would be created even faster than in the current system. Acceleration of the debt crisis cycle would be the result.

If mass default resulted in austerity policies that further attempted to reduce “too much debt” without distinguishing between money creation debt and the re-lending of it, the entire system would collapse in a death spiral, simply because an unexamined ideological belief had triumphed over facts, logic and grade school arithmetic that I have presented.

See also
For further explanation see my comments on Michael Kumhoff’s and Steve Keen’s presentations from Part 1.
https://conference2019.positivapengar.se/michael-kumhof

https://conference2019.positivapengar.se/steve-keen/

See also my challenge to the authors of *Money Creation in the Modern Economy.* It consists of 3 very simple arithmetic questions the Bank of England’s Monetary Analysis Directorate refused to answer.

Digging Deeper into Debt-Money
The Bank of England’s confessional isn’t the whole story
http://paulgrignon.netfirms.com/MoneyasDebt/MAD2016/DiggingDeeper_Grignon2017.pdf

“… just consider what might happen if mortgage holders realized the money the bank lent them is part of an invisible trap, a game of musical chairs designed by the bankers in which losers are mathematically predetermined to default whenever the creation of new debt to banks slows down, for any reason. The only way to keep the music playing is for all of us as a whole to go further and further into debt to banks forever.”

I explain the basics in *Economists and a Pile of Nuts* a cartoon just over 2 minutes long.
https://www.youtube.com/watch?v=KcOtu28O8IQ

The animated calculus explanation takes longer.
http://paulgrignon.netfirms.com/MoneyasDebt/MAD2016/ThirstySwans.htm

My detailed critiques of sovereign money proposals are at:
http://paulgrignon.netfirms.com/MoneyasDebt/MAD2016/essays.htm

16 Lars Aleus

Implementation of the transition is well illustrated and explained. But, as with the previous video, it seems apparent that the presenter has never considered what happens to money during its multiple decades in circulation, regardless of the money's origins. It is full speed ahead based on simplistic assumptions. That these assumptions are widely shared by the sovereign money reform movement does not make them true. It only proves that no one in this movement considers what happens to money during its multiple decades in circulation.

I recently had a month of email debate with Lino Zeddies, of the IIMR and author of a featured article on sovereign money. It was he who alerted me to this conference. I have heard all the arguments he had to offer in support of sovereign money, none of which were new to me. In the article linked to below, I demonstrate with verified facts and simple logic how each one is based on a fallacy, the most fundamentally wrong one being the idea that sovereign money is "positive" and "debt-free".

http://paulgrignon.netfirms.com/MoneyasDebt/MAD2016/Grignon-Critique-Zeddies-Sovereign-Money-Overview.pdf

My essays page at http://paulgrignon.netfirms.com/MoneyasDebt/MAD2016/essays.htm contains several more critiques of the sovereign money movement's ideas.

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17 Patrizio Laina

Mr Laina presents what he calls successful examples of full-reserve banking from the past, the main one being the UK Bank Charter Act of 1844. I looked up online references to the Act. It didn't stop money creation by commercial banks, which Mr Laina actually mentioned briefly. The Act just prevented commercial banks from printing their own notes. This forced the commercial banks to extend credit as a promise of central bank notes, of which they actually needed just a fraction in the bank's possession, because business was conducted by accounting in commercial bank credit. That is just the system we have today. I fail to see how it fits under any of the descriptions of full-reserve banking he gives in his 5th slide.

"Debt-free" fallacy
As is the case with sovereign money reformers in general, there is a lot of talk about how the new sovereign money can be spent by government, so-called "debt-free", quickly glossing over the necessity to tax it back to maintain its value. Such money is only debt-free and non-inflationary if it is all absorbed by real economic growth. Examples of how sovereign money worked in the past, such as in pre-Revolutionary America, or Canada from 1938 to 1976, are always examples of economies in which robust economic growth absorbed new money without devaluation. Times have changed - drastically.

In a no-growth situation - the test case for true stability, and also our long-term survival - sovereign money is simply a tax credit. It is another form of money as debt on a schedule of repayment, just like commercial bank credit.

Unpayable Interest fallacy
Mr Laina then alludes to the idea that interest can't be paid because it wasn't created - necessitating an ever expanding money supply and the "growth imperative". This is a very common fallacy based on P < P+I, the inequality of Principal being less than Principal plus Interest. A shortage seems obvious because only the principal was created.

It is surprising that so many professional economists still don't see through this illusion. The way that credit is paid back as mixed monthly payments in which only the principal is extinguished means that there can never be a mathematical shortage of money to pay the interest. It is absolutely impossible. Loans repaid in mixed instalments are always payable from the created principal alone. A full explanation is here:
http://paulgrignon.netfirms.com/MoneyasDebt/MAD2014/problem3.htm

Overlooked and ignored
The actual and provable cause of the growth imperative is multiple concurrent principal debts of the same money, as described at length in my comments on Steve Keen's presentation.
https://conference2019.positivapengar.se/steve-keen/

18 Rickard Eriksson

He makes the case that the current payment system is already very good. I agree with that.
I also agree with his statement that “an e-krona doesn’t change anything”.

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19 Final Panel Discussion

The following critique is meant in the most constructive manner, and in light of the existential environmental crisis that has finally made it into the public consciousness. I hope it will be received with open minds. Professor Keen and Michael Kumhoff state that, from their own experience, economists are not known for a willingness to be shown incorrect and change their understandings. Who is, after all? That has certainly been my experience with the economists I have debated.

Nor is there any evidence that economists understand that their erroneous concepts about money make them into tools of class warfare and a very significant contributing cause of the extinction crisis now facing this planet.

Unfortunately, many money reformers also entertain provably erroneous concepts about money, usually for “intuitive” or ideological reasons.

My background
I have been very concerned about the degradation of the planetary environment for over half a century. It was 1993 when I first learned that money is created as principal debt to a bank. I have been studying the subject of money from the environmentalist point of view ever since.

I made my international hit movie *Money as Debt* (2006) at the urging and with the help of Bill Abram, a Canadian sovereign money reformer, and Dick Distelhorst, a senior member of the American Monetary Institute, both now deceased. *Money as Debt* received immediate worldwide promotion by Elizabeth Kucinich, an international sovereign money reformer and wife of former Congress member and long-shot Democrat Presidential hopeful, Dennis Kucinich.

Shortly after making *Money as Debt,* I became the everything-media assistant to Connie Fogal, the leader of Canada’s sovereign money reform party.

The root of the problem, not the solution
The conclusion I have come to from studying money is that a sustainable survival economy, one that is capable of both growth and shrinkage without ill effects, can never be created from our money system as it is, a system that depends entirely on constant exponential growth to avoid mathematically inevitable mass default.

I have also concluded that the concept of money as any *single uniform quantity made valuable by its own scarcity,* such as gold or a sovereign money monopoly, is the *root of the problem*, not the solution. Naturally, that is not what fans of either gold money or sovereign money want to hear. The paradox is that I totally agree with sovereign money reformers that government has the right to spend “sovereign money” into existence. The actual reason why that is so is the clue to the paradigm-changing solution I propose.

Too much debt
There seems to be general agreement among panel members that system instability is caused by “too much debt”. But this term is a very inadequate basis on which to formulate a solution. It does nothing to illuminate either the structure or genesis of “too much debt”.

I hope to make both perfectly clear. It’s all simple logic following upon the one simple fact I explained to millions worldwide in my movie *Money as Debt*, and which has since been verified by three central banks: almost all money is someone’s principal debt to a bank to be repaid according to a timetable. That’s it - all you need to know. The rest is simple logic and grade school arithmetic.

Paradox of thrift
Steve Keen starts off by noting that people tend to hoard the money they have when debt levels get too high. The perceived risk of a downturn causes an actual downturn in spending and money creation, which reduces GDP and

employment. The situation then escalates into a default crisis. Keynes made the same observation with his "paradox of thrift" as have many others before him.

Professor Keen then proposes that the remedy is to reduce debt levels, without distinguishing between which debt levels - money creation debt or the lending of existing money. There's a world of difference.

Upon revisiting the history of the "paradox of thrift", I found that previous analysts all specified savings as the culprit - just as I do. Savings, previously known as "hoarding" is an inherent part of money as any single quantity made valuable by its own scarcity. Savings are an integral part of banking as currently practiced and actively encouraged by bankers. Thus, the banking system itself makes debt-money *unavailable* to the borrowers indebted to it.

Musical chairs
The one simple fact we must keep in mind is that my savings are someone else's principal debt to a bank that I am withholding from them. Savings interrupt the full circle required to enable repayment. Savings turn the system into a mathematical game of musical chairs whenever the ratio of savings to chequing is increasing. However, in this version of the game, the number of debtors grows much faster than the number of chairs, as more and more bank credit money is saved and replaced or lent an additional time as loanable funds.

Eventually the music must stop. This happens when either bank credit creation slows down, reducing the inflow stock of new bank credit, or reduced velocity fails to allow us to, in the aggregate, borrow from Peter to pay Paul and vice versa to avoid default.

The cause that initiates the default crisis can be anything. It has nothing to do with the extent of the resulting damage. The extent of the resulting defaults depends on how much impossible principal debt must be eliminated to get back to a level that velocity can sustain. By the Crash of 2008, in the USA, the total principal debt to banks (M2) had reached an unprecedented high relative to money available (M1).

Economists and a Pile of Nuts
Savings contribute to creating the "grow-or-collapse imperative" that prevents us from ever creating a sustainable economy. And yet in most minds, and as mis-taught in economics, savings are believed to be the foundation of the system as if they were a squirrel's store of nuts, actual wealth. But, in reality, savings are someone else's principal debt of non-existent nuts. There's a big difference.

Economists and a Pile of Nuts, cartoon, 2 minutes 17 seconds
http://paulgrignon.netfirms.com/MoneyasDebt/MAD2016/economists_play.htm

I repeat. Savings are not just "money" put aside. Savings are someone else's principal debt to a bank that is NOT available to them to be earned and repaid unless the savings are spent.

Furthermore, savings are used to create more principal debt to a bank, just as if they were "loanable funds". Savings in the form of the money market mutual funds sold by banks are existing bank credit actually lent a second time as loanable funds. From the borrowers' point of view there is not a whit of difference in the arithmetic between money made unavailable and replaced by a new bank "loan" or existing money actually lent.

M2 = 4 x M1 means what?
Correctly interpreting the chart of M1 (cash and chequing) and M2 (M1 plus savings) in the USA, the logical conclusion is that, in normal conditions, every dollar created as M1 has been saved by a depositor and replaced by a bank 3 times over. Expressed another way, every dollar potentially available to be earned by borrowers is owed concurrently to the bank that created it, and to three different depositors for whom banks are acting as if they were intermediaries in the loanable funds model.

How do I come to this conclusion? It is because, according to the Fed's own statistics, M2, which is total principal debt to banks, is normally reported to be about 4 times M1, the money possibly available to be earned to pay it. That is all one needs to know.

In the prosperous early Nineties, the M2 to M1 ratio dropped to 3:1 as savings were spent. At the Crash of 2008 the M2 to M1 ratio hit an unprecedented 5.26:1 due to increased corporate savings and income inequality.
Every time since 1981 that the M2 to M1 ratio has increased a few years in a row, a default crisis resulted. This can all be observed directly from the Fed's routinely published statistics.

It's the lending itself
Throughout this panel discussion, I note that everyone, including Professor Keen, slips into the habitual assumption that there is such a thing as "money" in our current system. I have had someone argue with me that "principal ceases to exist upon spending and fungible monies circulate in the national economy". Logically, if "principal ceases to exist upon spending", the borrower doesn't need to pay it back after spending it. This is clearly not the case. And yet, nearly everyone unconsciously slides into thinking of money as a child thinks of a coin.

Once we fix with certainty in our minds that money is created as someone's principal debt to a bank, it follows by simple logic that it remains someone's principal debt to that bank until it is paid back. And furthermore, that would not change if money were cowrie shells, gold coins, sovereign fiat or some imaginary "debt-free" CBDC actually being lent. It's the lending itself that turns any form of money into principal debt until it is paid back.

Therefore, the idea of "positive money" is absolutely pointless in an economy that must of necessity run on debt, "pre-financing" as Professor Huber called it. The real question should be *debt of what to whom?*

Even if the government simply created money and spent it so-called "debt-free", in a stable sustainable situation, it would all have to be taxed back at the same rate as it was spent in order to preserve its value. Thus, so called "positive money" is an illusion. In reality, it is a tax credit, a debt-on-a-schedule of repayment just like bank credit - but interest-free. That's good for the taxpayers, but those who financially depend on the interest on government debt would lose their source of income.

Debt-money is like a yo-yo
A remarkably appropriate way to picture lending is that money (in any form), once it is lent, is like a yo-yo spun out into circulation. It spins while the payments are mostly interest and then accelerates as an increasing proportion of principal payments returning to its lender.

All is well as long as the yo-yo can return unburdened by any other debts. Savings and re-lending grab the yo-yo and prevent its return, while burdening it with additional "principal debt of a yo-yo" obligations. That means that the only way to get a yo-yo back is to grab someone else's yo-yo, which puts them in the same predicament. In the aggregate, it puts everyone, the entire society, in the predicament of relying on the next round of yo-yos to be sufficiently large and on time to make up for the past yo-yos come due but not available.

The ratchet effect
Every increase in the debt level must be maintained via the "ratchet effect" to prevent mathematically certain default. This locks in the growth of the "money supply" which, in reality, is the "principal debt to banks supply". There is no escape from this accelerating mathematical treadmill except default, and no way to sustain it without uninterrupted exponential growth of principal debt to banks.

Money is ...
With the exception of coin, and bank credit created to buy equities, real estate or precious metals, there exists only commercial bank credit which is "evidence of someone's principal debt" to a commercial bank, as well as cash and reserves which are "evidence of someone's principal debt" to a central bank.

Note that in all three cases, when money is being created on one side of the bank balance sheet, the other side is created in one way or another by *the productivity of the people*. It is the only way it can be.

This is easily understood if one pictures arriving at the mall with a million dollars and all the stores are empty. This is the fallacy of "helicopter money". Money's value will always adjust to match the real value of things in demand - and the value of things in demand will always be determined by the actual supply. Therefore, money should be created by demand in order to create supply to satisfy demand.

Ulf asked "For what purpose do we create money? And how can we create money in a better way that supports the real economy?"

Limiting belief
How about directly from the productivity of the people? In my analysis, one of the the biggest obstacles to finding a real solution is the belief that only the national government has "monetary sovereignty"- even a "sacred duty"- to provide the nation's money supply. This is a limiting ideological belief based on centuries of conditioning. It is not an indisputable fact.

Individual monetary sovereignty
My argument is that the right to issue money, monetary sovereignty, actually belongs to any and every entity with assured demand for what it supplies. Demand creates credit creates money. I repeat, any and every producer of anything in demand, from individuals to international corporations and any level of government that can levy taxes, has monetary sovereignty. That also means that *only* producers, service providers and governments have the right to spend credit into circulation as money.

In all cases, individuals, corporate producers and government service providers, the new credit spent would be logically justified by the monetary sovereignty of each individual citizen involved - all the individuals doing the producing, whether that be as a lone owner of a market garden selling directly to customers or as a faceless employee of Behemoth Worldwide.

Crowdfunding model of money
Of course, producers are also customers. Producers in this system would be borrowing from their customers via pre-sale of their output. Initially, what I call Producer Credits would be sold for conventional money to pay for production, as in the current practice of crowdfunding. Once developed as a full money system, all of a producer's expenses could be paid in Producer Credits directly. All that is required to make any Producer Credit reliable as money worldwide is assured demand for the Producer's output and a convenient global system of exchange that allows the Producer Credit to be traded to an actual customer at maturity.

Collateralized inflation-proofed savings
Customers would pre-purchase what they would buy anyway. Rather than put insecure bank credit away in savings possibly subject to bail-in, savers would put away their savings as collateralized credits for specific output from a specific supplier to be collected upon in the near future. Producer Credits would give a discount on prices proportional to the time the credit has existed. This discount could easily exceed bank interest on savings.

Producer Credits would also be valued in a new value unit that is immune to inflation/deflation, guaranteeing that savings would never lose nor gain real purchasing power.

Lifecycle completes
Producer Credits would be designed to have a defined lifecycle of a year or less so that credit would never be based on the more risky distant future like a 30-year mortgage. Producer Credit money would always be anchored in current production, the economic reality that matters, and would always complete the debt repayment circle by design. The value of Producer Credits in the Producer's real goods and services would increase up to a maximum at maturity, after which the credit would expire. This would gives the Producers some control over *when* their output would be purchased.

New Paradigm
The value of any Producer's Credits in the new unit would be defined by the prices the Producer charges and would be unaffected by the total amount of other monies and Producer Credits in existence. Ultimately, all Producers could be disciplined to keep their own Credits within the limits of real demand by an automated self-correcting market.

A parable of "pre-financing"
Imagine a village with one fishing boat, a great need for fish, and no money to pay for provisions or deckhands. How do we get the fish we all need?

Simple. The boat owner needs provisions and labour. In exchange, he trades fish credits, the real value of which will depend on the success of the fishing trip. The fish credits can be exchanged or spent like money.

When the boat returns, everyone holding fish credits gets their proportionate share of the fish. The price of the fish in money units is established by the size of the catch divided by the total fish credits spent, including the owner's share. The creditors' inputs were valued according to the money unit they all understand but is physically absent. Anyone who fails to redeem their fish credit within the time limit will find their fish has "expired".

It is a full circle "pre-financing" system by design, which is what a sustainable, stable money system must be. However, it should be noted that once all credits have been redeemed, there is no money in circulation. Fortunately, every producer in the village can do the same as the fisherman, the result being the ongoing real time creation of all the purchasing power needed to clear the market of all goods and services in

demand, all of it accomplished in the complete absence of any actual money.

Medieval market money
Moving from fishes to loaves, I recommend watching my cartoon:
The Essence of Money - 7 min:36 sec
This is how market money worked in medieval times, starring Anton the baker.
http://paulgrignon.netfirms.com/MoneyasDebt/MAD2016/essence.htm

After I made this cartoon, an artisanal bakery, just like the one in the cartoon, was built across the street from our house. Its construction was paid for, in part, by selling credits redeemable for bread. For a decade now I have enjoyed both the fabulous bread and the delicious smell, thanks to the baker's ingenious use of Producer Credits.

The obvious solution
The only economist I know who has studied my proposal, had this to say:
"...the obvious solution..." "Grignon's proposal amounts to using modern technology to replace an 'entrepreneur economy' with a 'co-operative economy'"
http://paulgrignon.netfirms.com/MoneyasDebt/MAD2014/solution3.htm

It is my fond hope that economists and money reformers will come to understand my analysis and understand why more than tinkering with the current system is required. A paradigm change is needed. *Now.*

Compatible and non-disruptive
Producer Credits are not proposed as a threat to or replacement of the current system. They are proposed to be an expansion of it - an entirely compatible and corrective addition to the current banking system that revolutionizes it non-disruptively. This report to the City of London invites the banking system to incorporate "capacity credits" into the money system.
https://paulgrignon.netfirms.com/MoneyasDebt/BC_RS_CapacityTradeandCreditSummaryFindings_web.pdf

My Producer Credit proposal is an expansion on the same idea. According to the report, about 20% of world trade in real goods and services is already conducted business-to-business in credits redeemable in the promised goods and/or services ONLY.

The original form of money
Producer Credits are the original form of money, pre-dating the invention of coins by thousands of years. Money was, in ancient times, a credit for grain stored at the local temple. Grain producers spent these credits and they circulated as money. Anyone else could issue credits against their own output using the designated grain as the common value unit.

Conclusion
Life, in all its forms, tends to multiply and consume until stopped by the environment. The current money system is, therefore, *not* the root cause of our drive for endless growth and consumption. However it is *the foremost structural obstacle* to overcoming our addiction to growth and adapting to an already badly over-used world.

Our challenge is to be smarter than bacteria. I firmly believe that we must re-integrate truly productive sovereign money, Producer Credits, into the general circulation in order to be capable of adapting to a future where endless growth is no longer an option.