

Resolving the Debt Crisis at the Root of the Problem

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by



Abstract

Despite the best efforts of economists and politicians the global economy remains more stubbornly resistant to significant growth than perhaps at any other time in history. Tracking our use of digital money as a medium of exchange over cash could provide the answer as to why this is the case.

Cash is created by the national central banks of the Eurozone and becomes a largely permanent addition to the money supply. However, at only 3% of the Eurozone M3 money supply cash has become a negligible source of new money for modern economies. In contrast digital money, in the form of demand deposits on current accounts, is created by the commercial banks usually in the process of advancing loans. We should recognise this fact and acknowledge that this is why almost every Euro has a corresponding debt. Digital money is also quite temporary since once a debt is repaid to a commercial bank it no longer exists and we should recognise this fact as the reason why there can be less money during a recession.

As recently as the 1960s a fifth of the money supply existed as cash and this acted as a buffer to the remaining money in the economy, almost all of which carried a debt. Since the 1970s the Eurozone money supply has increased exponentially, doubling about every decade. This explains the apparently functionality of this system until now. Mortgages have increased in duration during this time but have reached a natural limit in taking two concurrent careers to repay. As such a doubling of the money supply every decade isn't feasible and hence neither is a return to 'business as usual' under this system of money creation/destruction.

This document concludes that to attempt to resolve the debt crisis under the current system of money creation/destruction is to no purpose. Practically every Euro has a matching debt. If we increase the money supply, we increase our debts accordingly. And if we reduce our debts, we reduce the money supply by the same amount. One solution lies in providing a publicly created source of debt free digital money. Conceptually, this isn't any different from the public creation of debt free cash that previous economies required to function well. Similar proposals for reform have been advocated for many years but have largely been ignored by orthodox economics. However the persistent failures of orthodoxy demands that these reforms should now be considered in more detail.

Among matters for further discussion are the nature and composition of the institution which would take on the task of monitoring and creating/destroying the money supply and the means by which it should be put into circulation.

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Part 1: The Modern Medium of Exchange

1.1 The rise in prominence of digital money over cash

In April 2007, the IMF published a report concluding that the world economy was in good health only for the greatest economic crisis since the great depression to hit months later. How could the IMF have gotten it so wrong? Tracking the global economy's use of digital money over cash could provide an answer.

As recently as the 1960s around 20% of the M3 money supply existed as cash in Ireland and many other economies¹. The remaining 80% existed as bank-account money. i.e. As the balance of every current and savings account recorded in the ledgers of the banks.

Today the amount of cash in the Irish economy stands at only 6% of the total² with bank-account money, hereafter referred to as digital money, taking a far more prominent role in economic activity.

1.2 The gradual rise in our use of digital money

The rise in our use of digital money has happened through advancements in technology and not through careful consideration by economists. Indeed the digital money phenomenon has received very little attention from the economics profession.

However digital money has remarkably different properties to cash. These differing properties are rarely discussed in economics since cash and digital money are considered interchangeable, albeit in practise only in small quantities. This document will attempt to explain how unique this recession is in the context of how little of the economy's money exists as cash.

1.3 The properties of cash

1.3.1 The origin of cash

Cash is created by the Central Bank of Ireland under the authorisation of the European Central Bank⁷ at very low production cost. It is then sold to the commercial banks in exchange for digital money at face value. The profit is added to the Exchequer's account and becomes a source of non-tax revenue for the Department of Finance. The profit from the sale of newly printed cash to the commercial banks is known as seigniorage and at one stage it was a significant source of revenue for the Department of Finance.

1.3.2 The permanent nature of cash

Cash becomes a largely permanent addition to the economy's money supply since worn notes and old coins are exchanged for new ones at face value and cash is rarely removed from the economy once issued.

1.3.3 The debt-free nature of cash

New cash is added to the economy's money supply without any contractual obligation from the Department of Finance or any other organisation to repay any amount of debt. In short, new cash is created and issued debt-free.

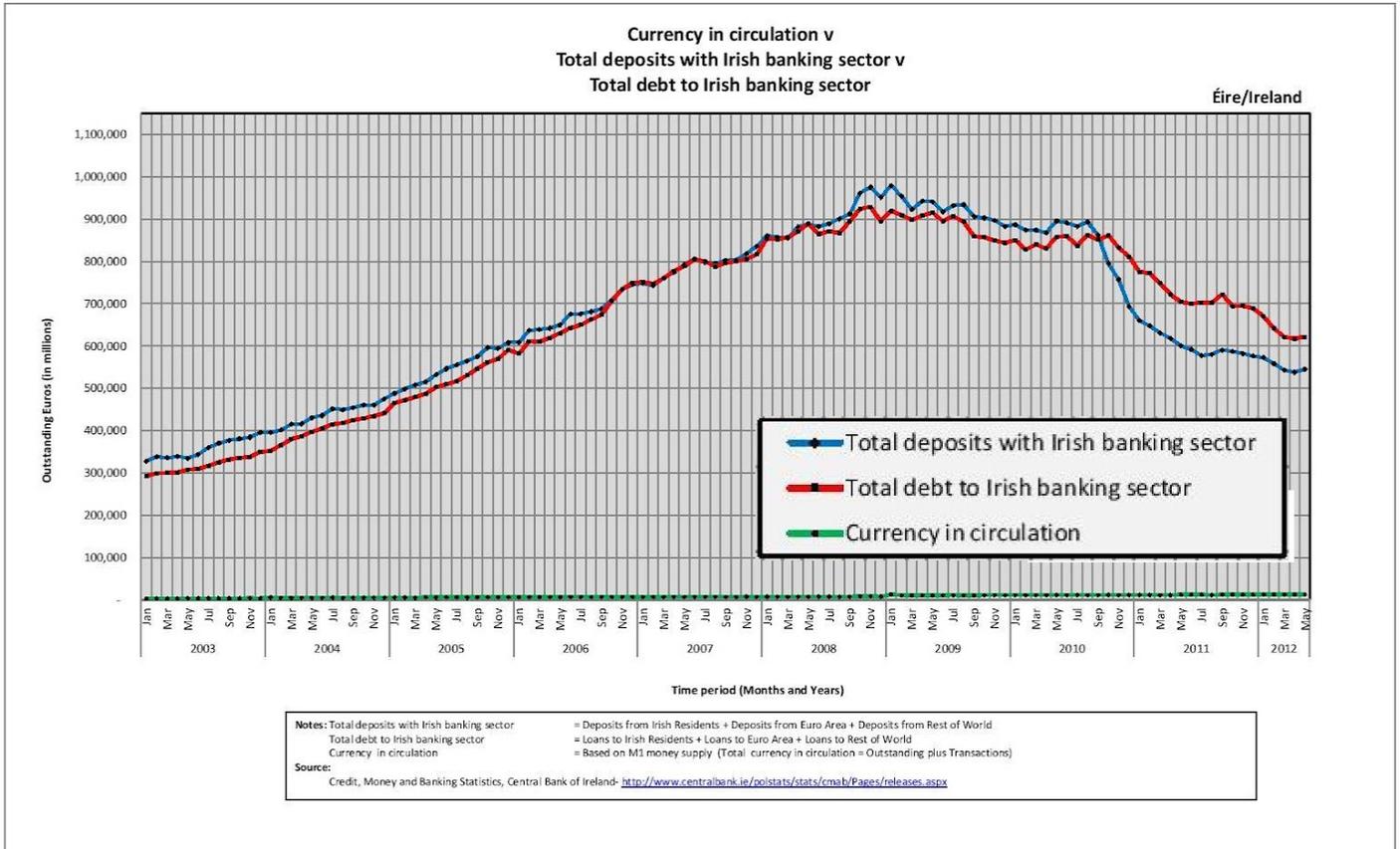
1.4 The properties of digital money

1.4.1 The origin of digital money

Digital money is created by banks usually through the bank lending process. When banks process loans they increase the borrower's account without decreasing any other customer's account or their reserve account. In this way banks have directly created 94% of the Irish M3 money supply.

1.4.2 The existence of digital money with a corresponding debt

Since it is only the commercial banks which create digital money, and they usually do so through the loan process, almost all digital money is created with a corresponding debt. Indeed, the debt to the banking sector fluctuates almost perfectly in line with the bank ‘deposits’ as shown in the graph below.



Graph of total deposits with, and total debts to, the Irish banking sector over time

1.4.3 The temporary nature of digital money

When processing a loan repayment, banks lower the borrower’s current account without increasing any other account. They then lower the borrower’s debt to the bank and in doing so banks effectively delete the money used to settle the debt. Indeed during a recession the amount of new money/debt created by banks can be less than the amount of money/debt extinguished through

loan repayments and this is one reason why there can be less money during a recession.

1.5 The loss of revenue through the loss of seigniorage

The ability to print money was once a significant power of the Central Bank and was one which the Department of Finance benefited from greatly. However in today's digital world, whereby 94% of the Irish economy's money exists as accounting entries on a computer screen, the ability to print money is negligible. The revenue from the sale of new cash has also become negligible. Hence the invention of new taxes. In 2011 for example non-tax revenue, which include many sources other than seigniorage, was less than 6% of total revenue⁶. When the economy relied more heavily on cash this would have been a much higher figure.

1.6 The gradual decrease in cash

It is worth bearing in mind that nothing has changed conceptually in how we run our economy over the time in which cash has become a less convenient method of payment. Improvements in our electronic payments systems have provided many efficient means of payment. However they've had dramatic effects on our national budgets as a result - Effects which have seemingly gone unnoticed by economists. For the most part economics still teaches an outdated cash version of indirect money creation through the money multiplier for example. And it appears few economists understand that money is canceled out of existence through loan repayments.

1.7 The unsustainability of this system of money creation/destruction

This system of money creation/destruction, whereby banks create almost all of the money in the economy in line with debt is unsustainable. The system can only function well if collectively the economy continuously takes on more debt than it repays. Indeed as the graph in section 1.9 shows we've had an exponentially growing money supply in the Eurozone since the amount of cash in the economy has become negligible. Extrapolating the graph shows the same relative increase in the money supply isn't feasible.

1.8 Delaying the Inevitable

Given the unsustainable nature of this system we'll now analyse what has kept it functioning until now. As noted in section 1.1 prior to the 1960s the amount of cash in the economy was around 20% of the total money supply¹ and bank-account money, almost all of which carried an equal debt, formed the remaining 80%. The significant amount of cash in the economy somewhat negated the effects of money/debt created by banks. From the 1960s onwards we've had a number of indirect sources of debt free money as replacements for this 'cash buffer'. These are discussed below.

1.8.1 The national debt

The national debt, despite its name, can act like a source of debt free money for the economy. This is because it can grow without being repaid in full. If it weren't for the national debt, businesses and households within the economy would each have to incur a debt to have any money to trade. 'Idle' Money reentering the economy through the national debt is money that neither businesses, nor households, have had to borrow into existence. And yet it circulates between them as effectively debt free money.

Expanding the national debt as a source of debt free money is no longer feasible as developed economies worldwide concentrate on reducing growth in their national debts.

1.8.2 An exponentially growing money supply

The digital money supply has increased dramatically globally in developed economies since the 1970s. For many European economies the money supply has doubled about every ten years, or quadrupled about every twenty years³. Loan repayments can feel manageable when the money supply increases at such a rate over the course of the loan.

An exponentially growing money supply can feel like a source of debt free money to the economy if the amount of new money created through loans dwarfs previous bank loans and loan repayments are spread over many years.

1.9 Why is this recession so unique?

Regardless of how an economy is taxed it is either the Government, businesses or households that acquire the loans for new digital money, and its debt, to come into existence.

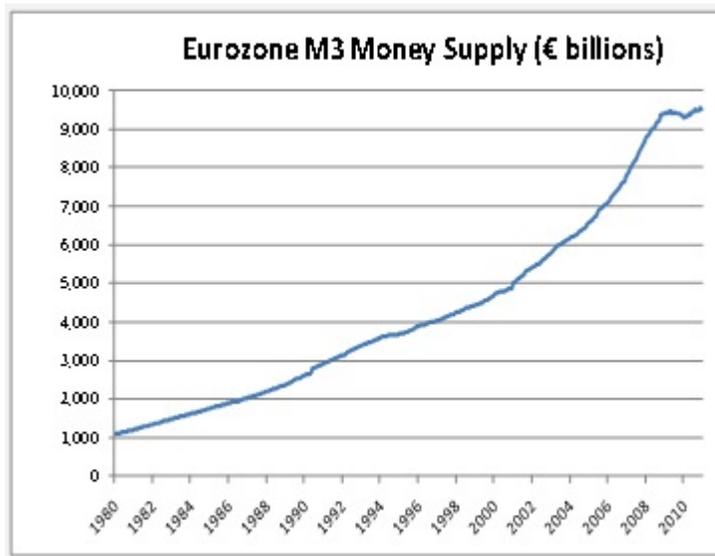
Until the 1930s businesses took on a significant portion of the debt required for money to enter the economy. For example in the US in the 1930s business debt comprised 50% of that in the economy. Household debt comprised less than 20%⁴.

Since the 1940s Governments and households have become the main sources of borrowing money into existence. However Governments in developed economies are concentrating on reducing budget deficits and so their contribution to taking on more debt is declining.

Perhaps more worryingly, mortgages in general now require two earners and two careers to repay. They cannot increase in duration having hit their natural limit of taking both incomes around thirty years to repay. House buyers can no longer be relied upon as ever-increasing contributors to creating new money through borrowing.

For the first time in history Governments, businesses and households appear to have no further borrowing capacity. This is a very unique recession and one which can't be ended through encouraging more bank loans unlike some previous recessions.

To demonstrate just how unique, a graph of the Eurozone M3 Money Supply is shown below. From the 1980s onwards we can see the doubling of the money supply about every 10 years. This 'decade doubling' explains the apparent functionality of the economy despite a decline in our debt free cash supply. To return to 'business as usual' would require a similar doubling about every decade. Extrapolating circa €10trillion in 2010, we could expect the total money supply around Europe to be around €160trillion in 2050. Regardless of how inflationary this would be, a doubling of the money supply every decade is not realistic given that this money would have to be borrowed into existence from banks. We believe a return to business as usual is not possible until a publicly created source of debt free digital money is introduced to stimulate the economy.



Eurozone M3 Money Supply from 1980 to 2011⁵



Part 2: A Solution Which Resolves the Crisis at its Root

2.1 Controlling the creation of money with a corresponding debt

One possible solution to the debt crisis would be to declare all digital money, i.e. all bank deposits, as legal tender. This would give the European Central Bank the authority to create/destroy both cash and digital money for the Governments depending on the demand for each. Nothing would change conceptually with regards to the central bank authorising money creation for its Government.

With digital money as legal tender all bank deposits, which are liabilities of the banks, could be removed from that side of the banks' balance sheet. Bank deposits would no longer be an agreement from the bank to pay money - They would be the actual money. This would automatically restore the health of the banking sector's balance sheets.

Finally, with digital money as legal tender banks would no longer be able to create and destroy it and would have to deal with existing money only. Financial institutions would become the intermediaries that most of our models for the economy assume they are. This would alleviate the primary cause of the great recession since bank loans could no longer create the national money supply in tandem with debt. We could never get to the point whereby the entire money supply had an even higher debt.

2.2 The Central Bank's role in money creation

As the current crisis demonstrates commercial banks cannot be trusted nor expected to issue new money with economic stability in mind. Governments also have a bad reputation whenever they've been in charge of directly creating money. As such we would see the central bank as the best judges of the amount of new money required to facilitate cooperative trading within the economy.

The central bank would create the new money expected to meet the demand for trading and type it directly into the Government's bank account whereupon it would be indistinguishable from money collected through taxes.

The central bank would create money with the sole objective of inflation control in mind, while the Government would decide how best to spend it. This would be the main safeguard against hyperinflation since neither institution would benefit from influencing the other's decisions.

2.3 Controlling the creation of bank credit

To control the creation of money through the extension of bank credit we'd need two types of accounts, namely current accounts and savings accounts.

If someone has money in a current account only they can use it. If someone has money in a savings account only the bank can use it.

This is known as full reserve banking, amongst other things.

2.4 Demand deposits as legal tender

Part of this proposal would involve acknowledging demand deposits as legal tender. Technically we're only allowed to pay taxes and/or court fines with cash and coins as the only forms of legal tender for all debts, public and private. We would finally recognise demand deposits as money, as opposed to an a potential payment of legal tender from banks.

2.5 Dealing with current accounts

Currents accounts, consisting of demand deposits, would now be 100% safe. Financial institutions, not necessarily limited to traditional banks, could manage current accounts and transfer numbers from one account to another as means of payment. In the event of one financial institution failing the accounts held would transfer to other financial institutions.

Consequently there would be no need for deposit insurance. There would also never be a bank run, nor bank bailout again.

If anyone wanted to save money completely risk free they could leave money dormant in their current account.

Demand deposits, in current accounts, would no longer be liabilities of the commercial banks and would be removed from the banks' balance sheet as a result. More detail on the appearance of the banks' balance sheets will follow in section 2.8.

2.6 Dealing with savings accounts

Savings accounts, more accurately described as investment accounts, would be more complicated. Financial intermediaries, again not necessarily limited to traditional banks, would only be able to lend existing money and as such they would have to attract the funds they require for lending.

At the point of opening a savings account the bank would be required to inform the customer of the broad intended uses for the money along with the expected risk level.

The risk of the investment now stays between the financial institution and the investor and the taxpayer would never be involved in guaranteeing bad debts. Brief examples of how savings accounts might function are described below.

2.6.1 A low-risk, low-return savings account

An example of a low risk, low return investment might include mortgages to middle income families.

The bank might charge an interest rate of 6% on these mortgages and it knows that these loans are quite safe. Allowing for defaults, the normal case rate of return might be around 5.8% overall and in the worst case scenario, with a high rate of defaults, the rate of return might drop to 2%.

In this scenario the bank might guarantee a rate of return of perhaps 1.5% to investors. This provides a good investment vehicle for savers/investors who don't want to take much risk.

2.6.2 A high-risk, high-return savings account

An example of this type of investment might be an emerging market tipped to become much bigger.

In this scenario the bank might attract savers by offering a return of perhaps 6% while lending to borrowers at perhaps 12%. If everything goes according to plan both the bank and the saver get the return they expected.

However if the emerging market proves unsuccessful the bank may only receive perhaps 60% of the money it lent. In this case the bank might only guarantee the investor a return of 70% of their money with the bank paying the shortfall from its profits.

2.7 A note on loan defaults

For decades publicly created cash has complimented privately created bank credit. Previous generations have found it easier to repay loans than today's generation because a significant proportion of the money supply has existing as debt free cash circulating continuously unlike today.

Almost the entire money supply now exists with a corresponding debt to the financial sector. This is why today's generation find it more difficult to repay bank loans in full. Ignoring cash, what's in circulation is the principal, or partial principal, of every loan. From this the economy must repay the principal plus interest. We owe more money than exists⁸.

We note that it is mathematically possible to repay all debts in full since banks only delete the principal of each loan upon repayment. Any extra payments received to service the interest are respent into the economy. However in practice repayment of all debts to the financial sector is impossible. Demonstrating this through the extreme example if everyone repaid all loans to commercial banks every bank account would read zero. In fact interest would still be owed on some loans. Before this scenario unfolds inevitably there will be a default on some loans even if, for example, banks lent only to individuals and institutions with the highest credit rating.

Bankruptcies and the complications of mortgage arrears are guaranteed with bank credit as the only source of digital money.

However if banks were to lend only existing money it would be entirely possible for all loans to go according to plan. The scenario described in section 2.6.2 would not happen as often as today. Furthermore in theory such a scenario would not have an adverse affect on the economy at large since even a mass default on loans would not affect the money supply.

2.8 The transition

The transition to full reserve banking would happen quite slowly for the reasons described below. From the date of changeover all demand deposits would be removed from the liabilities side of the banks' balance sheets and become accounts holding numbers representing legal tender. Time deposits, the numbers in savings accounts, maturing to demand deposits would be treated in the same way.

For clarity, no action would be required by the general public and Governments could still borrow money via the sale of bonds. Time deposits would be honoured as per their original contracts although we would expect some flexibility from both parties in renegotiating them. They would probably form the immediate source of money available for lending if the holders agreed.

'Loans' would also be removed from the assets side of the banks' balance sheets and would become assets on the Central Bank's balance sheet. As debtors repay the commercial banks the money they owe, it would be transferred to the Central Bank whereupon the debt would be settled, the Central Bank would remove the relevant entry and the money would effectively be canceled out of existence as happens today.

This arrangement would occur until the last repayment of a loan made before the changeover date. After this repayment the entire money supply would exist debt free overall. Most of the transition would be complete within 30 years since most of our money originates from mortgages of around this duration.

In the meantime, commercial banks would have to attract investors and upon doing so money would leave current accounts and enter the banking sector's pool for investment as liabilities on their balance sheet.

Upon approving a loan the money would re-enter circulation by being transferred from the investment pool to the borrowing customer's current account. Their agreement to repay the loan would become an entry on the asset side of the bank's balance sheet.

2.9 Addressing some concerns with our proposals

2.9.1 The need to control inflation

Controlling inflation is given the highest priority by central banks and rightly so. There is a school of thought that the issuance of publicly created debt free money into circulation will somehow be more inflationary than commercially profitable bank credit. We believe this reputation arose from the original behaviour of the two sources of new money.

Initially bank credit was issued to industries which subsequently increased GDP. Hence bank credit caused little inflation. In contrast Governments were less concerned with productive activity and have been guilty of causing hyperinflation by over-issuance of cash.

The situation is different today however. As our economy has developed, bank credit is now rarely afforded to productive activities but naturally, it is instead given to whatever investment appears to be the most profitable and preferably towards the transfer of an asset. This is the main reason why we live in such a high inflation economy. When consulting the Harmonised Indices of Consumer Prices only we may appear to live in a low-inflation economy. When factoring in the rise in house prices and the lowering of the household's disposable income we see a different picture⁹.

We also believe that our current system is perhaps the least-deflationary we've ever had. While businesses may reduce overheads and the cost of production, debt repayments form a 'floor' price below which there is no point in selling. This is perhaps why we cannot enjoy the same standard of living under a declining money supply in contrast to the quantity theory of inflation.

As such we see no reason why the issuance of debt free money would be more inflationary than our current system. Consulting section 1.9 again should remind the reader how inflationary the alternative would be.

The Central Bank's ability to directly create and delete money from the Government's account would obviously be far more effective than indirect control through adjusting interest rates. The Government would still have an inability to create money while the Central Bank would behave as responsibly as it does today in adjusting interest rates.

The system would also be policed through international trading. Since the amount of new money being created by the Central Bank would be published, a country would lose international credibility if it created what was considered to be an excessive amount of new money. Its exchange rate would adjust accordingly.

The following safeguards could also be put in place if it were deemed necessary although we would fear a restriction on real world growth should they be strictly implemented. Nevertheless the below safeguards are an absolute defence against inflation should the concern remain.

- *The absolute amount of the increase in any one month must be no more than x% greater than the previous month.*
- *The total annual increase in the money supply should not exceed x% of the current total money supply*

2.9.2 Would there be enough money for lending?

It's worth noting that we wouldn't be as dependent on loans and credit since this would no longer be the source of new money.

Also we would live in a more stable economy where perhaps only in cases of extreme population decline would an area of the economy would delete any money. And so investors are more likely to have longer periods of confidence than today.

Also the demographics of the population would keep the system well regulated. We'll always have a portion of the population saving for a house, a pension etc. and as soon as they stop the next generation will start.

But suppose, taking the extreme example, all the money in the economy was in current accounts and there was no money available for lending. On approach to this strange scenario the central bank would see this as a sure sign that more money was needed in the economy. An injection of new money into the economy via Government spending would encourage investment. If this failed the Government would take the emergency action of putting some of its money into a savings account for would-be entrepreneurs.

It is also worth noting that under the current system there are times when there is not enough money for lending despite encouragement given to the commercial banks to exercise their ability to create money.

2.9.3 Would it be economically viable to run a financial institution?

Occasionally we hear that it would be too expensive to run a bank without the benefits they currently receive from creating digital money at very low cost. Interest rates would no doubt increase and banks would no doubt have a variety of charges for managing current accounts so one way or another banks would make it profitable to be in business.

The other side of the argument is sometimes made that it would be too hard to do non-banking business since bank charges would be so high. However we believe trade would indeed be easier under full reserve banking since a higher portion of the money supply would always be available in current accounts, even if that current account were the bank's. Perhaps the hardest economy to do business in is today's in which more money is owed than exists and money is constantly being deleted.

2.9.4 How would this affect international trade?

Under the current system every economy is encouraged to have a large export market since this brings money into the economy while the associated debt stays with the importing country. It is worth noting that a net importing country will find it even more impossible to pay its domestic debts, so this isn't a good system from the global economy's viewpoint.

Regardless of this point creating money with an equal debt does promote international trade and this incentive would be lost under our proposals. A breakdown in international trade isn't realistic regardless of what monetary system we employ. However, some international trade that occurs today wouldn't occur under our proposed reform.

2.10 Examples of effective issuance of debt free money

2.10.1 Wörgl, Tyrol, Austria

Like many places in the 1930s the town of Wörgl in Austria was suffering from the effects of the Great Depression. The town had unemployed people, much work to be done but lacked a medium of exchange to bring it all together.

The Mayor, Michael Unterguggenberger, issued a new currency called 'certificates for services rendered'. It was issued debt free and kept valuable by being the only currency with which to pay local taxes.

The Wörgl currency enabled unemployed people to perform useful work and the town benefited from well-maintained streets, a new drainage system, street lighting, a ski jumping platform, bridges and a new reservoir. The scheme was a great success.

The success story of Wörgl spread and over 200 Austrian mayors proposed similar local debt free currencies. However the Austrian Supreme Court ruled such local currencies unconstitutional on 1st September 1933 and Wörgl suffered the effects of the great depression¹⁰.

2.10.2 The Island of Guernsey

Debt free money creation has been taking place in Guernsey for almost 200 years without excessive inflation¹¹.

Dr. Bob Blain, Professor of Sociology at Southern Illinois University, wrote of the island of Guernsey in 'The other way to deal with the national debt' *Progressive Review* (June 1994).

"In 1816 its sea walls were crumbling, its roads were muddy and only 4 1/2 feet wide. Guernsey's debt was 19,000 pounds. The island's annual income was 3,000 pounds of which 2,400 had to be used to pay interest on its debt. Not surprisingly, people were leaving Guernsey and there was little employment.

Then the government created and loaned new, interest-free state notes worth 6,000 pounds. Some 4,000 pounds were used to start the repairs of the sea walls. In 1820, another 4,500 pounds was issued, again interest-free. In 1821, another 10,000; 1824, 5,000; 1826, 20,000. By 1837, 50,000 pounds had been issued interest free for the primary use of projects like sea walls, roads, the marketplace, churches, and colleges. This sum more than doubled the island's money supply during this thirteen year period, but there was no inflation. In the year 1914, as the British restricted the expansion of their money supply due to World War I, the people of Guernsey commenced to issue another 142,000 pounds over the next four years and never looked back. By 1958, over 542,000 pounds had been issued, *all without inflation.*"

Conclusion

We would promote caution in dealing with this recession given its unprecedented nature. Until a second source of debt free digital money is introduced to the economy to complement, or perhaps replace, bank credit it is difficult to see how the economy can expand significantly again.

We recognise that Ireland has a relatively small economy, deals with an international currency and has accepted an IMF loan. As such we are realistic about our proposal to implement the issuance of an entirely debt free money supply any time in the near future. However we would urge more consideration of at least a partial implementation of a source of debt free digital money.

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