Money Issuance

Alternative Monetary Systems

A report commissioned by the
Icelandic Prime Minister's Office

kpmg.is

KPMG Contacts:

Svanbjörn Thoroddsen
Partner
+354 545 6220
sthoroddsen@kpmg.is

Sigurvin B. Sigurjónsson
Manager
+354 545 6112
sbsigurjonsson@kpmg.is

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Terms and definitions

Central bank deposits
An electronic form of Sovereign Money issued by a central bank.

Full reserve banking system (FRB)
A monetary system where the state would spend new money into circulation and banks would be required to keep the full amount of demand deposits in central bank reserves.

Helicopter money
New money distributed directly to households and consumers to stimulate the economy.

Monetary system
A set of processes and entities involved in providing money to a country's economy.

Monetary policy
Actions of a central bank to influence the amount of money and credit in circulation, in many cases to maintain price stability.

Money
A medium that can be exchanged for goods and services and is used as a measure of their value on the market.

People's quantitative easing
A set of proposals for an alternative to QE where the central bank issues new money to finance government investment.

Public money system
A monetary system where money is exclusively issued by a central bank owned by the state or other public body. Sovereign Money system and Full reserve banking system are types of public money system.

Quantitative easing (QE)
Central bank's purchase of government securities or other securities from the market in order to lower interest rates and increase the money supply.

Sovereign Money (SM)
Money issued by a state authority, such as a central bank.

Sovereign Money system (SM system)
A monetary system where only a state authority, such as a central bank, may create money as coin, notes or central bank deposits.

Executive summary

When commercial banks issue loans to customers, they create money by issuing deposits on the current account of the customer. This expands the balance sheet of the banks, over which central banks have limited control. The Sovereign Money system (SM system) aims at shifting money creation from commercial banks to the state and central banks.

In this report, we compare the fundamentals of the SM system and the current monetary system. It shows that adoption of the SM system would:

- Transfer money, in the form of deposits, from being liabilities of commercial banks to the central bank.
- Removes the commercial bank money creation function and separate payment processes from their balance sheets.
- Gives the state the option to put new money into circulation through public finances by paying down government debt or government expenditure which would raise the disposable income and equity level of households or businesses.
- Does not need to affect the way customers of the banks interact with the payment system.

Public discussion on adopting the SM system has progressed in the most recent years. The SM system has gained support from prominent economists and journalists who have called for continued discussions on the matter. The topic has reached the parliaments in Iceland, the United Kingdom, the Netherlands and Switzerland, where a referendum will be held on the matter.

Specific elements of the SM system have furthermore been in the focus of policy makers. A working paper by economists at the Bank of England concluded that issuance of sovereign money could permanently raise GDP due to reductions in real interest rates, distortionary taxes, and monetary transaction costs. Also, helicopter money and people's QE have gained traction by policy makers as a viable option to inject money into circulation in the current economic environment.

Academic coverage of the SM system and comparable proposals for public money systems, such as full reserve banking, has also increased. Academic publications covering public money seem to support the view that adoption of a public money system would result in a reduction in public and private debt levels, enable lower inflation and decrease systemic risk and risk of bank runs. Research varies in its conclusions regarding bank liquidity, interest rates and the complexity in transitioning to an alternative system.

The diversity and level of impact predicted in the academic research indicates the importance of further research in this field. Thorough research is needed in areas such as the optimal structure of the public money system, a transition plan, payment system and monetary policy under the new system. Also, further research on the effects on public finances, financial markets, financial stability and the real economy is required.

Introduction

The financial crisis of 2008 sparked a debate about monetary systems and reforms of the prevailing system, which operates fundamentally in the same way internationally.

Money is fundamental for financial and economic systems of modern societies. However, the nature of money and money creation has received limited academic scrutiny and public attention since the 1940s. Following the crisis of 1929 extensive debates on money creation and alternative ways of money creation went on in the United States, reaching its culmination in the Chicago Plan. Despite wide ranging support from economists, the plan was not implemented by the legislative powers and the deposit insurance scheme was introduced to protect depositor's assets in banks and savings associations.

In March 2015 Frosti Sigurjónsson submitted a report to the Prime Minister of Iceland, Monetary Reform: A Better Monetary System for Iceland.[1] In his report Frosti reviews the economic history of Iceland from the standpoint of money creation. Comparing alternative money creation mechanisms with the current fractional reserve system, Frosti concludes:

"It would be preferable to remove the root-cause of the problems and limit the power to print money the state-owned Central Bank. Furthermore, the power to create money should be separated from the power to allocate new money. This will effectively reduce the risk and instability of the monetary system, debts will be substantially reduced and the income from creating money will accrue to the state rather than the banks."

"Iceland, being a sovereign state with an independent currency, is free to reform its monetary system from the present unstable fractional reserves system and implement a much better monetary system. Such an initiative must, however, rest on further study of alternatives and a widespread consensus on the urgency for reform."

Discussion has been evolving internationally on the subject of monetary reform. In this report, which was prepared for the Icelandic Prime Minister's Office, we will compare the fundamentals of the Sovereign Money system with the current money system, review the trends in the political debate on money creation and provide an overview of the key academic papers recently published on the subject. We will also highlight the areas that require further research in order to advance the discussion on the Sovereign Money system.

1 Sigurjonsson, Frosti. (2015)

Fundamentals of Monetary Systems

A comparison of the current monetary system and the Sovereign Money system

Fundamentals of monetary systems

A monetary system is a set of processes and entities involved in providing money to a country's economy. The Bank of England[2] has pointed out that money creation under the current system has been commonly misunderstood.

"One common misconception is that banks act simply as intermediaries, lending out the deposits that savers place with them."

"Another common misconception is that the central bank determines the quantity of loans and deposits in the economy by controlling the quantity of central bank money — the so-called 'money multiplier' approach."

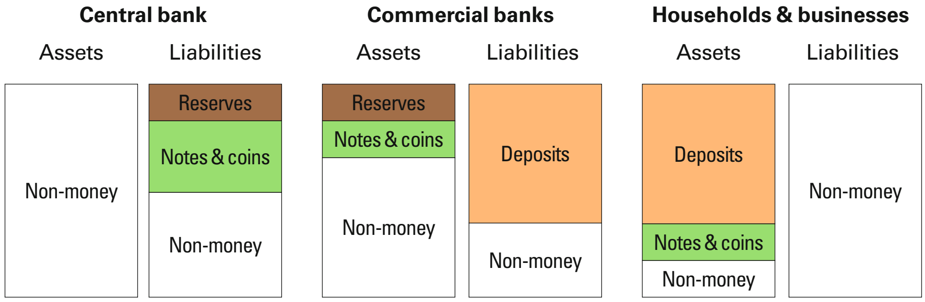
With this in mind and aiming for clarity, we have prepared a simplified comparison of the current monetary system and the SM system, based on the layout of Joseph Huber and Positive Money's more detailed proposal. The setup of the comparison is based on representation by the Bank of England of the current system.

2 Bank of England (2014)

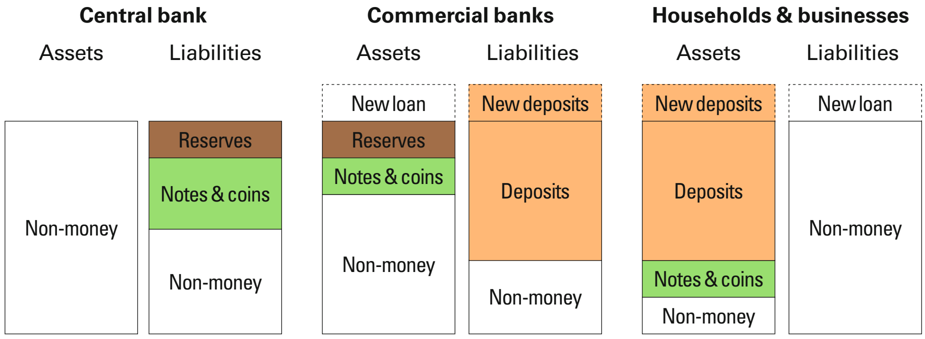
Categories and creation of money

Current monetary system[3]

Under the current monetary system money is debt in the form of deposits of credit institutions (hereafter commercial banks or banks). On their asset side, commercial banks hold money in the form of reserves at the central bank and notes & coins.



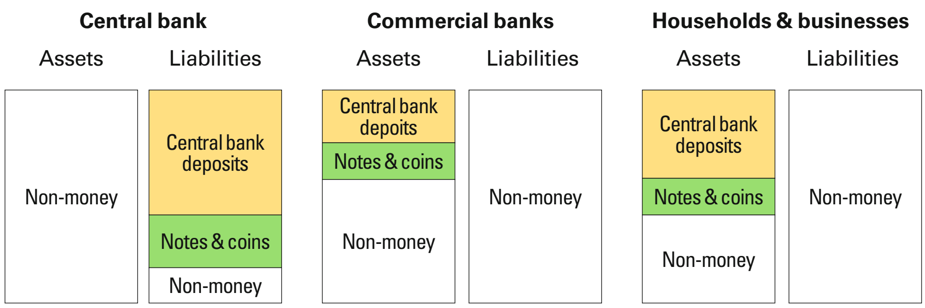
The predominant source of money under the current monetary system is bank lending, where deposits are created in the process of lending. Money creation under the current monetary system, i.e. through commercial bank lending, therefore expands the banks' balance sheets and raises the indebtedness of households and businesses.



Categories and creation of money

The Sovereign Money system[4,5,6,7]

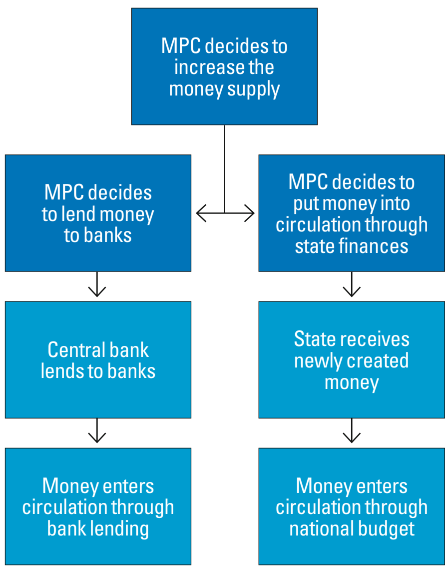
Under the SM system, commercial bank deposits would be replaced by central bank deposits, which would also be used by commercial banks, though the system may take different forms.[5,6] Having the same issuer, central bank deposits would effectively be an electronic version of notes and coins. Commercial banks would continue to service payments, as described in the following chapter. "Money" under the SM system herein after refers to central bank deposits, notes and coins.



Money creation decision process

Under the SM system, money would be created by state authority, such as a central bank. Here we assume that Monetary Policy Committee (MPC) would be granted the authority to decide on money issuance, with the following options to inject the newly created money into circulation:

- Through the state, which would inject the money into circulation in accordance to the national budget.
- Through the central bank through lending to commercial banks.



4 Huber, J. & Robertson, J. (2000)
5 Jackson, A. & Dyson, B. (2013)
6 Jackson, A., Dyson, B. & Hodgson, G. (2014)
7 www.sovereignmoney.eu

Categories and creation of money

The Sovereign Money system (cont.)

New money injected through the state based on the national budget.

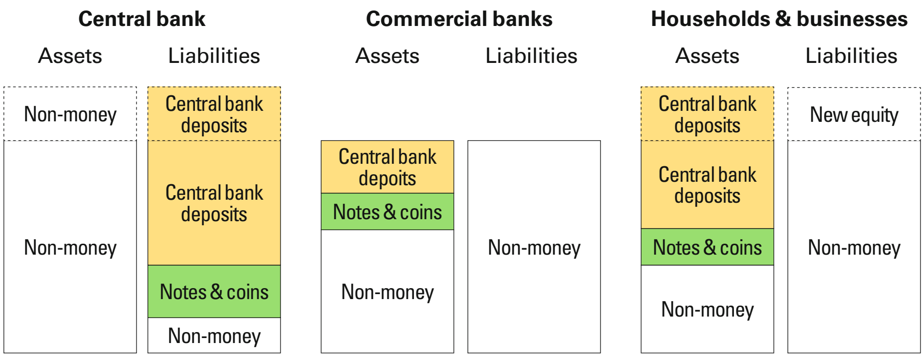
If newly created money is channelled to the state it becomes an additional source of equity funding for the state. The newly created money would be injected into circulation through public finances using current legislative processes. Depending on the policy of public finances, this might be done through expenses, infrastructure investments, tax cuts or payments on government debt. Different injection options would have different economic effects.

Option 1: Pay down government debt

By paying down government debt, the long-term financial assets of investors would be replaced with money, increasing liquidity in the financial markets. The state liabilities would decrease by the same amount.

Option 2: Spending, investing or cutting taxes

By using newly created money to fund public spending, public investment or lower taxes (or a combination of these) the state would add revenues and/or lower (tax) expenses for households and businesses. This would increase the disposable income and raise the equity level of households and businesses, as opposed to increased debt when deposits are created under the current monetary system.



Categories and creation of money

The Sovereign Money system (cont.)

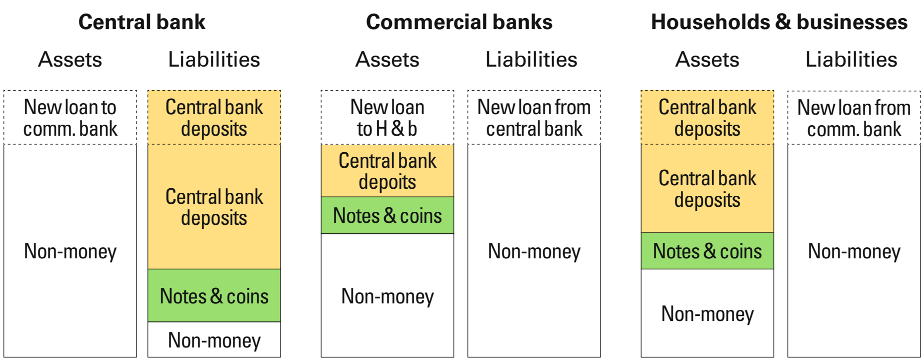
New money injected through bank lending[8,9]

Depending on the monetary policy adopted within the SM system and the situation in the financial markets, the MPC might in some cases decide to lend to the banks. This option would support the central bank's function as a lender of last resort; providing a tool to stabilise interest rates in the financial markets or ease the access to funding of households and businesses.

This would increase the indebtedness of the banking sector as opposed to raising the equity level of households and businesses or repaying government debt.

Bank lending under the SM system

When granting loans, banks would act as pure intermediaries, transferring existing money from savers to borrowers, as most financial institutions do under the current system. Consequently, when a bank lends money under the SM system it exchanges money for a new interest-bearing loan with no expansionary effect on the bank balance sheet. The effect on the borrower is identical to the effect in the current system. Banks would be under the same regulatory restrictions regarding capital, liquidity etc. as under the current system.



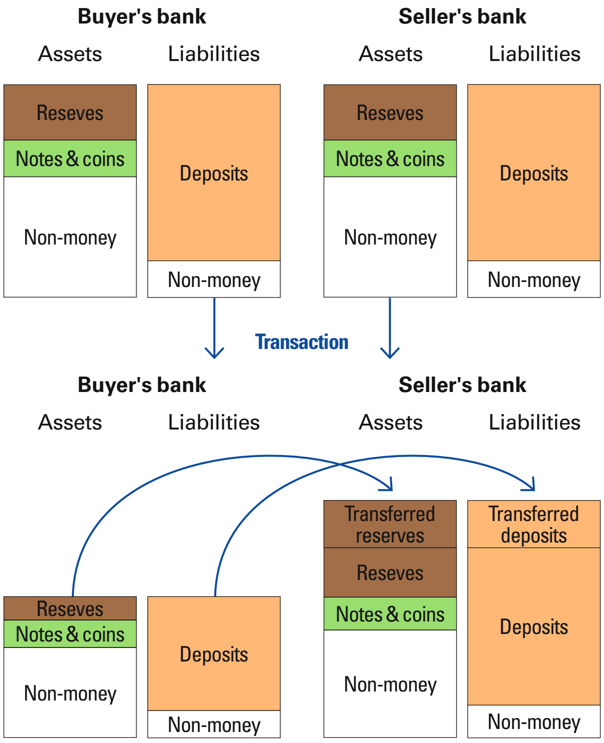
8 Jackson, A. & Dyson, B. (2013)
9 Jackson, A., Dyson, B. And Hodgson, G. (2014)

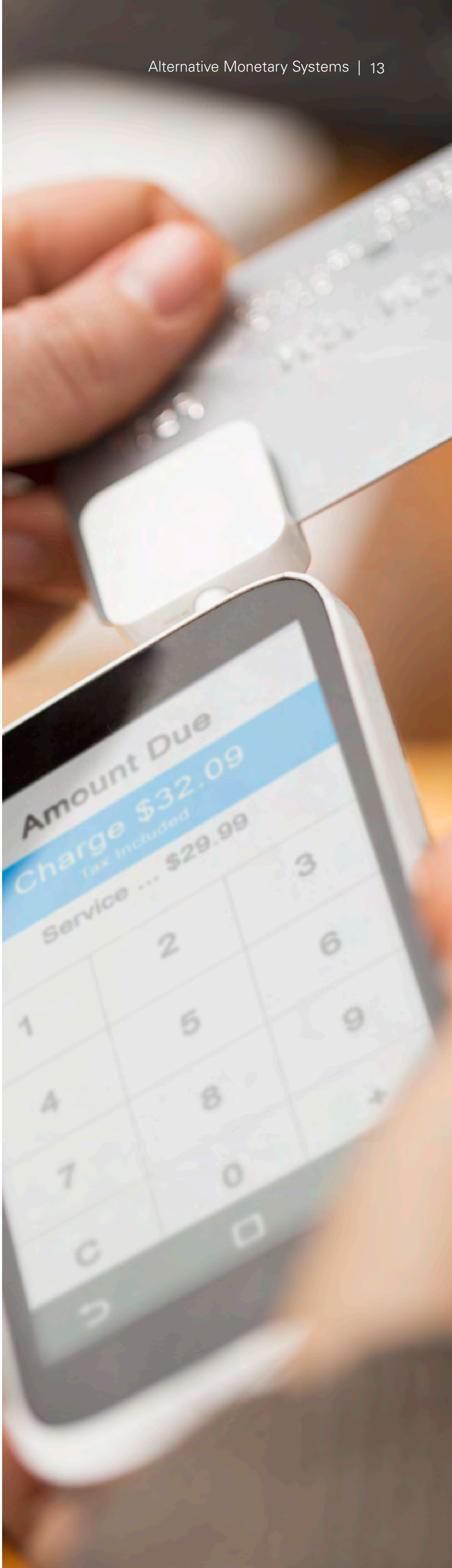
Payment system

Current monetary system[10]

When executing payments through bank accounts, deposits are transferred from the bank account of the buyer to the bank account of the seller. The banks exchange reserves to settle the transaction of deposits.

The transaction reduces the buyer's bank liquidity and reserve ratios. In turn the bank seeks to attract or retain new deposits and reserves.





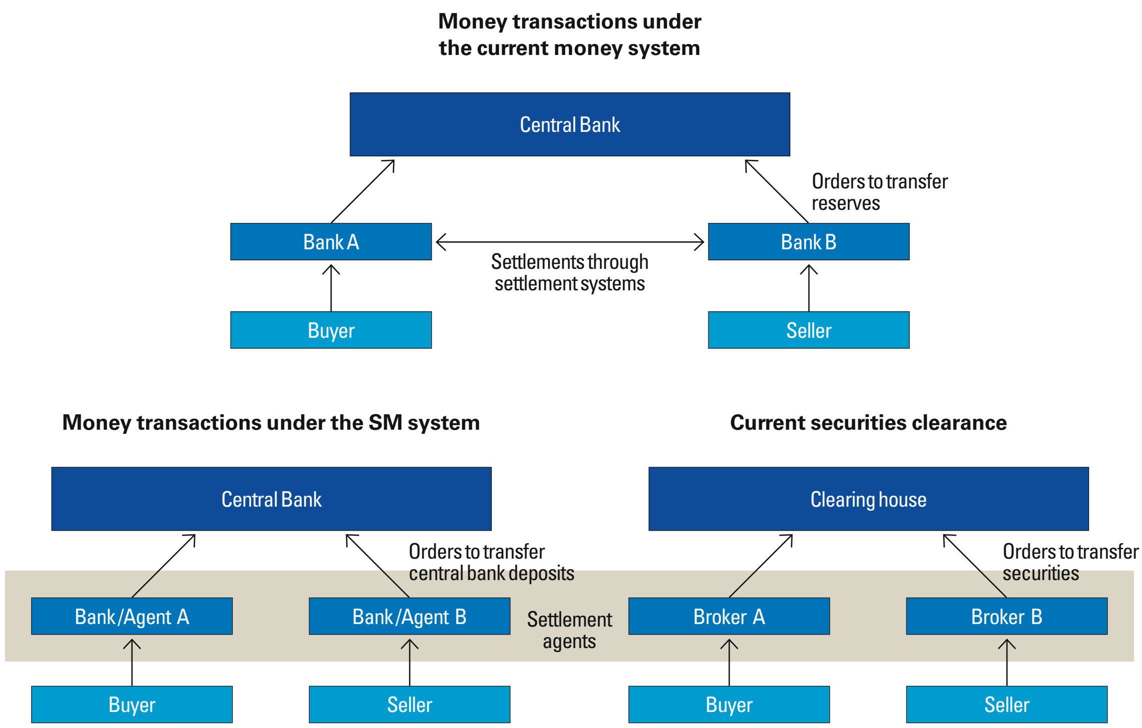
Payment system

The Sovereign Money system[11,12,13]

As money would be held off the commercial banks' balance sheets, their balance sheets would be unaffected by transactions between trading parties in the economy. The registered ownership of the money, however, would change. This could be done, for example, with a settlement structure similar to the structure currently used in securities clearing. The central bank would serve a role comparable to a clearing house in today's securities transactions and the banks would serve the role of brokers as settlement agents, settling the orders at the central bank. Settlement of deposits and reserves on the bank's balance sheets would no longer be necessary.

Customers of the banks would continue to transfer money through online banks and have debit and credit cards with the commercial banks under the SM system. As the banks would lose out on net interest income as a result of the contraction in their balance sheets, adopting the SM system would incentivise them to charge higher fees for payment services, altering their revenue composition.

Other payment system structures are possible, such as a less centralised (and more experimental) approach of block chain.



11 Huber, J. & Robertson, J. (2000)
12 Jackson, A. & Dyson, B. (2013)
13 Jackson, A., Dyson, B. & Hodgson, G. (2014)

Overview

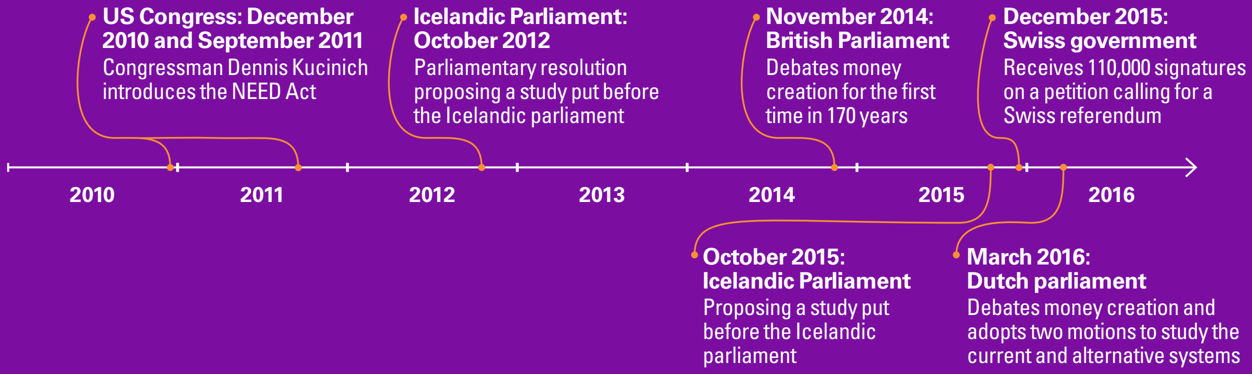
Comparison of monetary systems fundamentals

Element	Current monetary system	SM system
Categories of money		
Notes and coins are created by and are liabilities of...	...the central bank	...the central bank
Electronic money is a liability of...	...the commercial banks	...the central bank
Money creation		
Money is created through...	...bank lending decisions	...MPC decision-making
Electronic money is injected into the economy through...	...bank lending	...government budget or lending to the banks
Money creation increases ...	...liabilities of households and businesses	...equity of households & businesses or the liabilities of the banks, depending on the MPC's decision
Bank lending and financial intermediation		
Lending by banks is...	...funded by deposit issued parallel with lending	...pre-funded
Lending by other financial institutions is...	...pre-funded	...pre-funded
Effects of bank lending on their balance sheets...	...balance sheet expand by the loan amount	...central bank deposits are replaced by loans on the asset side
Households and businesses obtain debt funding from...	...the banks and other financial institutions	...the banks and other financial institutions
Maturity transformation is...	...restricted by regulated liquidity requirements	...restricted by regulated liquidity requirements
Payment system		
Payment services are provided by...	...the commercial banks	...the commercial banks and other payment service providers

Political Development

Following the financial crisis of 2008 the nature of money and money creation has become a topic of debate and has at the present time been taken up by politicians in the US, Iceland, United Kingdom, Netherlands, Switzerland and the European Union.

In this chapter we will review some of the most notable discussions on alternative monetary systems in the field of politics since 2008.



USA

The National Emergency Employment Defence (NEED) Act[14]

In December 2010 and September 2011 Congressman Dennis Kucinich introduced the National Emergency Employment Defence (NEED) Act in the U.S. Congress. The act was intended to restore the authority to create money to a Monetary Authority within the Department of the Treasury. The bill was referred to the Committee on Financial Services but did not pass into law. Following is the full title of the bill:

"To create a full employment economy as a matter of national economic defense; to provide for public investment in capital infrastructure; to provide for reducing the cost of public investment; to retire public debt; to stabilize the Social Security retirement system; to restore the authority of Congress to create and regulate money, modernize and provide stability for the monetary system of the United States, retire public debt and reduce the cost of public investment, and for other public purposes."

14 Kucinich, D. (2011)

The United Kingdom

The British Independent Commission on Banking[15]

In November 2010 Positive Money, the New Economics Foundation and professor Richard Werner collaborated on submitting a proposal for the implementation of an SM system to the UK's Independent Commission on Banking (ICB). The report did not endorse abolishing the banking sector's ability to create money.

UK: British parliamentary debate 2014[16]

The Conservative MP, Steve Baker, successfully bid for a backbench debate in the British Parliament on 22 November 2014.

Party	Critical	Supportive
Conservative Party	2	2
Labour Party	1	4
Scottish National Party	0	1
Social Democratic and Labour Party	0	1
UK Independence Party (UKIP)	0	1
Total	**3**	**9**

Monetary commission proposal 2015-2016

In the parliamentary debate MPs Michael Meecher and Zac Goldsmith came out in favour of a monetary commission, as proposed by the Institute for Public Policy Research.[17]

"The UK has not effectively examined how its money and credit system operates since the Macmillan commission in the 1930s. Yet in that time the nature of money and the scale of credit has changed significantly. Moreover, how credit is created, circulated and accumulated has vital consequences for the UK's economic and social wellbeing, something increasingly recognised in mainstream debate. We therefore need a much better understanding of the nature and role of money and credit if we are to shape the monetary system to best support economic and social wellbeing. We therefore recommend that an in-depth parliamentary commission should be established to investigate the role of money and credit within the economy."

Martin Wolf (Chief Editor of the Financial Times) and Angus Armstrong (Director of Macroeconomics at the National Institute of Economic and Social Research) came out in favour of a monetary commission. The proposal did not get voted on in the parliament.

15 Independent Commission on Banking (2011)
16 UK Parliament (2014)
17 Lawrence, M. (2014)

Iceland

Parliamentary resolution 2012-13[18]

In October 2012, a parliamentary resolution was put forward in the Althingi, the Icelandic parliament, by Lilja Mósesdóttir, MP, proposing that Iceland's Minister of Finance and Economic Affairs should form a committee to review "how the separation of money creation and lending function of the banking system can be achieved by removing the banks' ability to create new deposits through lending."

The resolution was referred to Althingi's Economic Affairs and Trade Committee. The Committee received[18] written opinions on the resolution, most proposing acceptance of the resolution. However, rejection of the resolution was proposed in the following two instances.

In its review the Central bank of Iceland stated[19]:

"It is difficult to envisage that such changes could be implemented except in a context of international cooperation without risking prolongation of the country's economic isolation. A more feasible option would be to address the underlying risks associated with lending activities through other measures and in the context of what other countries are doing."

In its review of the resolution, the Icelandic Financial Services Association (IFSA) stated[20]:

"The structure of the Icelandic financial system must be in line with that of the European Union (EU),both in light of our EU obligations and to ensure that financial services are comparable with those in the EU. Consequently, it meaningless, in the opinion of the IFSA to begin investigating the pros and cons of these ideas."

The Economic Affairs and Trade Committee recommended that Althingi should adopt the resolution in the following form:

"Althingi proposes that the Minister of Finance and Economic Affairs forms a committee to explore the pros and cons of transferring money issuing rights from commercial banks to the Icelandic Central Bank. The committee will complete its work as soon as possible and the minister will report to Althingi on its conclusions within a month of completing its work."

It's statement of support stated[21]:

"It is important to consider whether these ideas are reasonable for Iceland. Also, it is important that specialists should estimate different alternatives in these matters (e.g. the Chicago Plan and Sovereign Money system) and utilize to the extent possible the research and knowledge already available on the matter. The majority of the committee acknowledges that this entails a fundamental change in the financial- and monetary system and the execution of monetary policy and therefore it is unlikely that any action will be taken without thorough academic research and evaluation of the changes that would occur, as great interests are at stake and it is therefore important to proceed with caution."

Althingi did not vote on the resolution.

18 Althingi's issue no. 239, parliamentary resolution (2012)
19 Central Bank of Iceland (2012)
20 Icelandic Financial Services Association (2012)
21 Althingi's commission of economics and trade (2013)

Parliamentary resolution and 2015-2016[22]

In September 2015, a resolution was proposed by eleven members of parliament from five parties in Althingi, which is summarised in the table below. The resolution calls for the establishment of a commission to "carry out a review of the arrangements of money creation in Iceland and to make recommendations for improvements". The resolution has been submitted to the Althingi's Economic Affairs and Trade Committee, where it awaits discussion. Eight out of nine opinions received by the committee supported the resolution.

MP's proposing the monetary commission

Party	MPs
Bright Future	1
Left-Green Movement	2
Pirate Party	1
Progressive Party	5
Social Democratic Alliance	2
Total	**11**

In its review of the resolution, the Central Bank of Iceland stated[23]:

"The Central Bank of Iceland views the discussion on the arrangements of money creation as generally beneficial and therefore does not propose any amendments to the resolution."

The Icelandic Financial Services Association reiterated its view in a review of the parliamentary resolution in 2016, concluding[24]:

"The structure of the financial system in Iceland must follow what's developed in the European Economic Union."

22 Althingi's issue no. 169, parliamentary resolution (2015)
23 Central Bank of Iceland (2016)
24 Icelandic Financial Services Association (2016)

Netherlands

Dutch parliamentary hearing in 2015

Over 100,000 signatures were collected in the Netherlands to put money creation on the political agenda in early 2015, easily surpassing the required minimum of 40,000 signatures. As a result of the initiative, and to prepare for the debate, a hearing on Money Creation took place in Parliament before the Finance Committee. Four representatives from the organisation Ons Geld, which initiated the collection of signatures, participated as well as representatives from the Dutch central bank, the Authority for the Financial Markets, ING and professors from the University of Groningen and the University of Utrecht.

Parliamentary debate in 2016

On 16 March 2016, the Dutch Parliament's plenary assembly debated the possibility of transitioning to an SM system.[24] The initiative gained support from five out of eleven political parties.

Motions for further research[25]

Following the debate several motions were adopted. One of the motions, tabled by MPs Pieter Herman Omtzigt and Arnold Merkies, requested the Scientific Council for Government Policy to issue an opinion on "the functioning of the monetary system, including all forms of money creation by banks and to take into account the pros and cons of alternative systems of money creation and the size of the seigniorage".

The motion was adopted with a 108 to 42 vote, with only the one party voting against.

25 Positive Money (2016)

Switzerland

Swiss referendum

According to the Swiss constitution, citizens can initiate a national referendum on a proposed change to the constitution if over 100,000 signatures can be collected within an 18-month period in a process known as a Swiss People's Initiative. The results of such referendums are binding.

In December 2015 over 111,000 signatures were handed in to Swiss authorities, which confirmed that the initiative fulfilled the required criteria and that there would be a national referendum.[26] As in the case of other Swiss People's Initiatives, the matter has to be discussed in the Swiss Federal Council, then in both houses of parliament, any of whom can propose another alternative change to the constitutional text. Following these discussions the referendum will be held.

In February 2016, the Federal Council made an initial statement, saying[27]:

> At its meeting today the Federal Council expressed its opposition to the popular initiative "For a currency safe from crises: currency issued only by the National Bank" (the initiative known as "Sovereign Money"). The Council justified its rejection by invoking the largely unforeseeable risks that the overhaul of the monetary system applied by the authors of the initiative would lead to in the financial sector and, consequently, threaten the whole economy.

Swiss Bankers Association review[28]

Following the announcement of a referendum to be held in Switzerland, the Swiss Bankers Association (SBA) announced that it "firmly rejects the Swiss Sovereign Money Initiative", and claimed it would put the "prosperity of Switzerland" at risk. Furthermore, it claimed it would:

- bureaucratise and restrict the supply of money to the economy. Borrowing would become more expensive for all companies. SMEs that are too small for the capital market and are reliant on bank lending would in particular suffer as a result.
- hinder sound investments, which would result in the loss of jobs.
- result in many years of uncertainty in terms of the Swiss financial market. The Swiss financial centre, which is of international significance, would be put at acute risk.

Furthermore, SBA claimed the initiative would also affect Swiss citizens as it would:

- punish depositors, and they would earn even lower interests on their savings.
- shrink the economy and the resulting tax deficits would have to be compensated by us all. The promise of increased profit from money creation (seigniorage) to the benefit of the general public is a fairy tale.
- render mortgages more expensive. The dream of owning one's own home would thus become viable for a reduced number of Swiss citizens.

The Vollgeld initiative, which initiated the signature collection, has responded to SBA's criticism, in a public letter.[29]

26 Vollgeld Initiative (2015)
27 The Swiss Federal Council (2016)
28 The Swiss Bankers Association (2015)
29 Dawnay, E. (2016). (2016)

Notable Publications

Public discussions on SM system

As expected in the case of a proposal for fundamental change, the SM proposal has come under a fair amount of criticism as well as support since its introduction. It has gained interest and prominent persons are pointing at the monetary system as a fundamental problem and calling for further exploration of the SM system. Below are some key remarks from written sources and formal speeches on the matter.

> [A Sovereign Money System] would bring huge advantages. It would be possible to increase the money supply without encouraging people to borrow to the hilt. It would end "too big to fail" in banking. It would also transfer seigniorage – the benefits from creating money – to the public.

Martin Wolf, Chief Economics Commentator at the Financial Times (April 2014)

> We can end the alchemy (creation of money by banks) without losing the enormous benefits that money and banking contribute to a capitalist economy.

Mervyn King, Former Governor of Bank of England: The End of Alchemy (2016)

> The crucial point is that these proposals for replacing private debt-created money with government-created money are perfectly feasible and would bring substantial benefits: far less private debt and far less private indebtedness.

Martin Wolf Chief Economics Commentator at the Financial Times: Shifts and Shocks (2014)

Following are quotations from publications following Frosti Sigurjonssons's report from March 2015.

> Reykjavik should give sovereign money a shot. Nations far bigger and meaner than Iceland have struggled to come to grips with financial excess through conventional means. As well as showing other countries a potential way forward, by bringing the axe down on fractional reserve banking the Icelanders might just regain some control over their economic destiny.

The Financial Times (April 2015)

> Overseeing gradual liberalisation of post-crisis capital controls (which we expect to begin this year) will remain a priority for Iceland during the forecast period. However, once this has been completed, we expect attention to turn to overhauling the monetary system. If successful, Iceland's experience could serve as an important case study for global monetary reform.

The Economist (April 2015)

> Sigurjonsson's plan for Iceland is an intriguing beginning that hopefully will lead to more debate about the future of the financial system. If implemented, it would dramatically improve the ability of central bankers to stabilise nominal spending without distorting the composition of economic activity.

The FT Alphaville, Matthew Klein (April 2015)

> The Sigurjonsson plan is a plausible blueprint for better banking and Iceland is a good place to start.

Reuters, Edward Hadas (April 2015)

Elements of public money

In addition to discussions and publications on public money systems, the interest of policymakers and influential figures in specific elements of public money systems has been rising recently. Below are a few recent examples.

Central banks as electronic money issuers

In recent years, there has been growing interest in a system of electronic currency issued by central banks for households and businesses. Most recently, specialists at the Bank of England conducted a study indicating that 30% of GDP issuance of sovereign money (in the paper termed as "central bank digital currency") could permanently raise GDP by as much as 3% as a result of reductions in real interest rates, distortionary taxes, and monetary transaction costs. Their research also showed that countercyclical price or quantity rules, as a second monetary policy instrument, could substantially improve the central bank's ability to stabilize the business cycle.[30]

People's quantitative easing

While conventional quantitative easing entails the central banks' investing new money in government bonds, under people's QE new money would be injected into circulation by government spending or investing, which is an option under the SM system.

People's QE entered the European political debate in February 2016 when Molly Scott-Cato, Paul Tang, and Fabio De Masi, all members of the European Parliament, sponsored a conference in the European parliament on people's QE.[31] In June 2016, 18 Members of the European Parliament sent an open letter to Mario Draghi, the President of the European Central bank, an indication of the rising political focus on these options. The letter proposes people's QE and helicopter money.[32]

Helicopter money

Helicopter money entails distributing new money directly to households & businesses, e.g. through tax cuts, which is an option under the SM system.

Asked if helicopter money is part of ECB's toolbox, Mario Draghi responded: "We haven't really thought or talked about helicopter money. It's a very interesting concept that is now being discussed by academic economists and in various environments. But we haven't really studied yet the concept."[33]

In Japan it was anticipated that the Bank of Japan might issue helicopter money, causing fluctuations in the Japanese financial market.[34]

Also, Janet Yellen, Chairwoman of the Federal reserve has responded in an interview that Helicopter money is something the Fed might "legitimately consider" — but only in "a very abnormal, extreme situation."[35]

The European Parliamentary Research Service has reviewed opinions and arguments put forward in the debate on helicopter money[36], concluding:

> "Some empirical studies show that tax rebates have had positive macroeconomic effects in certain countries."

And, on the other hand:

> "Helicopter money, it is argued, could also undermine the stability of the euro, by triggering 'runaway' inflation or reducing the incentive to work."

30 Barrdear, J. and Kumhof, M. (2016)
31 Jourdan, S. (2016)
32 QE4people.eu (2016).
33 Karakas, C. (2016)
34 Akama, N. and Takeo, Y. (2016)
35 Insana, R. (24 June 2016)
36 Karakas, C. (2016)

Academic publications

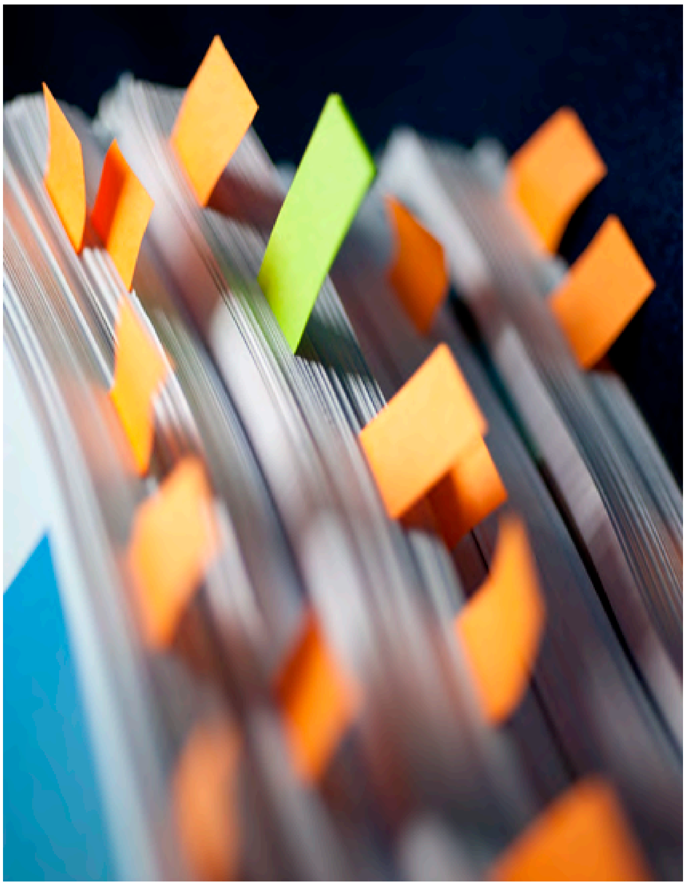
The Chicago plan (proposing full reserve banking) from the 1940's, proposed the injection of new money through public finances as in the case of the SM system. Some academic publications address the SM and full reserve banking in parallel. Hence, we apply the term "public money system" as a common term for these proposals henceforth in this report.

We cover academic publications on public money systems in the following review, focusing on conclusions regarding the consequences of adopting a public money system.

Key findings

The majority of reviewed academic publications indicate that the adoption of a new monetary system will decrease public and private debt levels, enable lower inflation level and limit the systemic risk and risk of bank runs. Conclusions differ more regarding bank liquidity, interest rates and the transition to the SM system, indicating more uncertain behaviour.

If consideration is given only to publications presenting the results of three economic modelling methods (Dynamic stochastic general equilibrium model, System dynamics and stock-flow consistent model) the unanimous conclusion is that a public money system would improve control of the business cycles, allow for zero inflation economy and decrease, or eliminate, public debt.



Academic publications

The following tables summarise the conclusions of academic papers discussed in this chapter regarding specific effects.

Details	Key conclusions
Authors: Benes, J. and Kumhof, M. **Year of publication**: 2012 **Title**: The Chicago plan revisited **Publisher**: The International Monetary Fund (Working paper) **Covering**: The Chicago plan (full reserve banking) **Research method**: Dynamic Stochastic General Equilibrium (DSGE)	Adoption of the Chicago plan will entail: • Better control of a major source of business cycle fluctuations. • Complete elimination of bank runs. • Dramatic reduction of the (net) public debt. • Dramatic reduction of private debt. • Output gains approach 10 percent. • Steady state inflation can drop to zero without posing problems for the conduct of monetary policy.
Author: Charlotte Van Dixhoorn **Year of publication**: 2013 **Title**: FULL RESERVE BANKING - An analysis of four monetary reform plans **Publisher**: The Sustainable Finance Lab **Covering**: The Chicago plan, Sovereign Money, Narrow banking and Limited purpose banking **Research method**: Interviews with 70 experts from academia, the financial sector, the central bank and supervisor.	Adoption of public money system will entail: • Lower house prices, reduced environmental degradation and lower inequality. • Possible general loss of economic efficiency as liquidity is reduced, or it may be the financial sector itself that will bear the burden. • Realignment of the responsibility of the costs (risks) and benefits of money and credit creation. It is this principle of public justice that drives this form of full reserve banking.
Author: Margeirsson, O. **Year of publication**: 2014 **Title**: Financial Instability and Foreign Direct Investment (Ph.D. thesis) **Publisher**: Olafur Margeirsson **Covering**: Sovereign Money **Research method**: Independent analysis	Adoption of the SM system will entail: • Threat of lack of savings to be lent by banks into the economy. If savers do not want to put money into investment accounts at banks, for one reason or another (they do not trust them, the rate of interest is not high enough, etc.) there can be a lack of savings in the economy to finance planned investment projects. • …the rate of interest and the level of investment may not be "self adjusting" towards the "optimum" level as Keynes pointed out: a sub-optimal equilibrium in the economy, where interest rates, due to a high liquidity preference of savers, are too high to maintain a stable and a high level of employment, can develop and permanently set in. • Finally, it is possible that under a debt-free money system the rate of interest could fluctuate, even violently. Fluctuations in the interest rate make planning, including investment planning, about the uncertain future difficult as cash flows due to credit and interest rate costs become hard to estimate. • We therefore conclude that debt-free money has some serious flaws, most notably the risk of high and fluctuating rate of interest, possible lack of private investment and high and/or fluctuating level of employment.

Academic publications

Details	Key conclusions
Author: Patrizio Lainà **Year of publication**: 2015 **Title**: Money Creation under Full-reserve Banking: A Stock-flow Consistent Model **Publisher**: University of Helsinki **Covering** (as "Full-reserve banking"/"FRB"): The Chicago plan and Sovereign Money **Research method**: Stock-flow Consistent Model	• Full-reserve banking can accommodate a zero-growth economy and provide both full employment and zero inflation. • Money creation through government spending leads to a temporary increase in real GDP and inflation. • FRB leads to a permanent reduction in consolidated government debt. • FRB would not lead to a credit crunch or excessively volatile interest rates. • At all times banks could grant all demanded loans to creditworthy borrowers by adjusting the interest rate on time deposits.
Authors: Sheila Dow, Guðrún Johnsen and Alberto Montagnoli **Year of publication**: 2015 **Title**: A critique of full reserve banking **Publisher**: The University of Sheffield **Covering** (as "full reserve banking"): The Chicago plan and Sovereign Money **Research method**: Independent analysis	• Some of the plans rely on the view that the money supply is a key causal variable and that it is feasible for central banks to identify and enforce an optimal quantity. • By removing profit-making opportunities from banks, the proposals may unduly tip the balance further in favour of shadow banking. • While a return to a traditional separation of retail banking (regulated and supported by the central bank) from investment banking (regulated differently but not supported) would contribute to financial stability, it is argued that the full reserve banking proposals go too far.

Academic publications

Details	Key conclusions
Author: Kroll, M. **Year of publication**: 2015 **Title**: The monetary system in crisis **Publisher**: World Future Council **Covering** (as "Vollgeld"): The Chicago plan and Sovereign Money **Research method**: Independent analysis	• A significant one-off seigniorage profit which could be used to pay off public debt. This would, however, entail significant regroupings of long-term capital investments as a large part of state securities would no longer be available for investment. • It is very doubtful that a transition to a Vollgeld system would be possible with a few simple regulations. • The complexity and the danger of system failure is severely underestimated in current discussions. • It is to be expected that the development of the monetary supply would continue to be dominated by the lending desires of the banks rather than by the central bank. • If the lending preference of banks for lucrative financial investments leads to the entire banking system running out of money, because a limited monetary supply means not all credit demand can be serviced, it could not only lead to a steep increase in loan interest rates but even to a situation where credit demands of the real economy would not be serviced at all. • The goals of the money reformers that go beyond what a Partial Sovereign Money System could achieve, could – as demonstrated – not be achieved by a Vollgeld [Sovereign Money] system either. Thus, sticking with a more modest Partial Sovereign Money System over a complete Vollgeld reform would be of no objective loss.

Academic publications

Details	Key conclusions
Authors: Egmond, N. D. and Vries, B. J. M. **Year of publication**: 2016 **Title**: Monetary Reform; dynamics of a sustainable financial-economic system **Publisher**: Utrecht University **Covering**: The Chicago plan and Sovereign Money in parallel **Research method**: System dynamics model	• The Central Bank, who has the required oversight of the system, does not have the possibility to control the decentralized money creating process. The Bank's ability to determine the (lending) interest rate is not effective, in line with the growing insight that 'the interest rates appear as likely to follow economic activity as to lead it' (Werner, 2012). • The current financial system appears to be fundamentally unstable, confirming Minsky's instability hypothesis. Lacking central coordination, euphoric herd behavior of the many private banks causes the unjustified creation of too much money, fueling ever increasing (asset) prices, GDP, wages, consumption and loans until financing cost becomes unbearable for individual households. As a consequence they will default on their loans, after which banks go bust and have to be recapitalized by the government, which has to increase taxation and decrease expenditures, altogether turning the system into the downward spiral of the bust, with subsequent stagnation of the economic system as a whole. • Money which has been created as debt, accumulates on the deposits of the non-lending consumers. An increasing part of this 'dead' money does not take part in the productive economic process, while stimulating the increase of asset prices over net income, thus contributing to the instability of the system. • The forward model simulations suggest that another crisis will occur if the present system is unchanged within a few decades, depending on such unknowns as the trends in ICT-applications in the financial sector. • Control, or at least significant weakening of the boom-bust cycle, and herewith avoiding inflation during the boom- and deflation during the bust-phase, can be achieved by centralized control over money creation. The model experiments show that in such a Reformed Monetary System money creation by the government, can stabilize the boom-bust cycle. • The residential quote [The ratio between debt servicing (interest plus repayment) and net income] as an important measure for the risk on significant defaults is more stable, given the increased stability of both net income and financing costs, which in turn benefit from lower interest rates and more gradual, less volatile development of asset prices. The (modeled) interest rate is lower in the baseline case as the funding needs for the government are lower, resulting in less demand for liquidity and subsequent lower interest rates. • Nevertheless, also in the reformed monetary system crises may occur, although less likely than in the current money-as debt system. • A smooth transition to the reformed monetary system seems feasible. • In the current simulations government debt was gradually eliminated. Full employment as a societal goal could be achieved within the context of the current model assumptions, in particular with respect to the propensity to consume.

Academic publications

Details	Key conclusions
Author: Dittmer, K. **Year of publication**: 2014 **Title**: 100 percent reserve banking: A critical review of green perspectives **Publisher**: Institut de Ciència i Tecnologia Ambientals **Covering** (As "100 percent reserve banking", "C-PeRB"): The Chicago plan, Kotlikoff's Limited Purpose Banking and Sovereign Money in parallel **Research method**: Independent analysis	• The proposal could serve to constrain new investments by the availability of savings, thereby checking economic growth. However, this would strongly increase interest rate volatility. • A transition to C-PeRB would allow debt levels to be drastically cut. This is technically possible, but politically a tall order.
Author: Yamaguchi, K. **Year of publication**: 2010 **Title**: On the Liquidation of Government Debt under A Debt-Free Money System. **Publisher**: The System Dynamics Society. **Covering** (As "full reserve system", "system of debt-free money"): Full reserve banking **Research method**: System Dynamics.	• Government debt could be liquidated without cost under an alternative macroeconomic system of debt-free money. • Higher economic growth can be attained under new monetary system.
Author: Yamaguchi, K. **Year of publication**: 2011 **Title**: Workings of A Public Money System of Open Macroeconomies **Publisher**: The System Dynamics Society. **Covering** (As "system of debt-free money"): Full reserve banking **Research method**: System Dynamics.	• Government debt liquidation under this alternative system [system of debt free money] can be put into effect without causing recessions, unemployment and inflation as well as foreign recessions. • Public money policies that incorporate balancing feedback loops such as anti-recession and anti-inflation are introduced for curbing GDP gap and inflation. They are posed to be simpler and more effective than the complicated Keynesian policies.

Academic publications

Details	Key conclusions
Author: Yamaguchi, K. **Year of publication**: 2012 **Title**: On the Monetary and Financial Stability under A Public Money System **Publisher**: The System Dynamics Society. **Covering** (As "Public money system"): Full reserve banking **Research method**: System Dynamics	• Monetary and financial stability is shown to be accomplished under the public money system.
Author: Yamaguchi, K. **Year of publication**: 2014 **Title**: From Debt Money to Public Money System **Publisher**: The System Dynamics Society **Covering** (As "Public money system"): Full reserve banking **Research method**: System Dynamics	• A six-step transition process can be carried out peacefully without causing inflation and systemic chaos.
Authors: Yamaguchi, K. and Yamaguchi, Y. **Year of publication**: 2016 **Title**: Head and Tail of Money Creation and its System Design Failures **Publisher**: The System Dynamics Society **Covering** (as "Public Money System"): Full reserve banking **Research method**: System Dynamics	• Under the full reserve system monetary stability is fully attained, eliminating causes of booms and depressions. • As a by-product, government debts are also shown to be gradually liquidated.
Authors: Sawyer, M. and Fontana, G. **Year of publication**: 2015 **Title**: Full reserve banking: More 'Cranks' than' Brave Heretics' **Publisher**: University of Leeds **Covering** (as "Full reserve banking / FRB"): The Chicago plan and SM system **Research method**: Independent analysis	• FRB would do little to enhance financial stability and could well lead to growth of the shadow banking system, • The consideration of the intimate links under FRB of changes in the money supply and budget deficit lead to the conclusions that i. budget deficits would often be smaller under FRB than under present arrangements, ii. FRB could nullify the automatic stabilisers of fiscal policy, and iii. will lead to a de-facto dominance of monetary policy and the central bank over fiscal policy and democratic decision making. Finally, the argument that debt-free money would be created is examined and found wanting.

Academic publications - Summary

The following tables consolidat key conclusions for specific effects of academic papers discussed in this chapter.

Effects	Supporting conclusions	Critical conclusions
Economic stability	• Better control of a major source of business cycle fluctuations[37] • Control or significant weakening of the boom-bust cycle can be achieved by centralized control over money creation[38] • Under the full reserve system monetary stability is fully attained, eliminating causes of booms and depressions[39,40]	• It is to be expected that the development of the monetary supply would continue to be dominated by the lending desires of the banks rather than by the central bank[42]
Systemic risk & bank runs	• Complete elimination of bank runs[37] • Full reserve banking would not lead to a credit crunch[43] • Another crisis will occur within a few decades if the present system is unchanged[38] • Risk of significant defaults is more stable[38] • Crises may occur, although it is less likely than in the current money-as debt system[38]	• The complexity and the danger of system failure during the transition process is severely underestimated in current discussions[42] • FRB would do little to enhance financial stability[41] • FRB could nullify the automatic stabilisers of fiscal policy[41]
Public debt	• Dramatic reduction of the (net) public debt[37] • A significant one-off seigniorage profit which could be used to pay off public debt[42] • In the current simulations government debt was gradually eliminated[38] • A transition would allow debt levels to be drastically cut[45] • Government debts are shown to be gradually liquidated[39]	

37 Benes, J. and Kumhof, M. (2012)
38 Vries and Egmond (2016)
39 Yamaguchi, K. and Yamaguchi, Y. (2016)
40 Yamaguchi, K. (2010, 2011, 2012 & 2014)
41 Sawyer, M. and Fontana, G. (2015)
42 Kroll (2015)
43 Lainà, P. (2015)
44 Margeirsson (2014)
45 Dittmer (2014)
46 Dixhoorn (2013)

Academic publications - Summary

Effects	Supporting conclusions	Critical conclusions
Private debt	• Dramatic reduction[37] • permanent reduction in consolidated government debt[43]	
Economic growth	• Output gains approach 10 percent[37] • Money creation through government spending leads to a temporary increase in real GDP[43] • Higher economic growth can be attained under a new monetary system[40]	• Accommodation of a zero-growth economy[43] • Possible lack of new investments would check economic growth[45]
Employment	• Can provide full employment[43] • Full employment could be achieved[38] • Government debt can be liquidated without triggering unemployment[39,40]	• Liquidity preference and interest rates may be too high to maintain high level of employment[44]
Liquidity	• At all times banks could grant all demanded loans to creditworthy borrowers by adjusting the interest rate on time deposits[43] • The funding needs of the government are lower, resulting in less demand for liquidity[38] • Government debt could be liquidated without cost under an alternative macroeconomic system of debt-free money[40]	• Possible general loss of economic efficiency as liquidity is reduced, or it may be the financial sector itself that will bear the burden[46] • Threat of lack of savings to be lent by banks into the economy[44] • Paying off public debt would entail significant regroupings of long-term capital investments as a large part of state securities would no longer be available for investment[42] • Lending preferences of banks could lead to the credit demands of the real economy would not be serviced at all[42]
Interest rates	• Full reserve banking would not lead to excessively volatile interest rates[43] • The (modelled) interest rate is lower in the baseline case[38]	• High liquidity preference of savers may cause high and volatile interest rates[46] • Lending preferences of banks could lead to a steep increase in loan interest rates[42] • Interest rate volatility might be strongly increased[45]

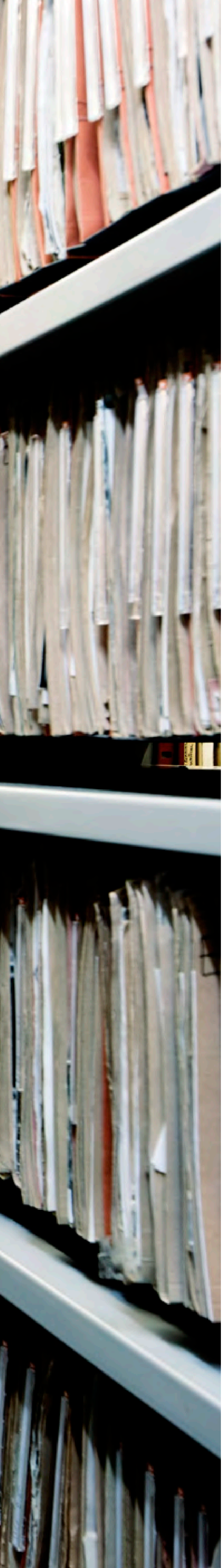
Academic publications - Summary

Effects	Supporting conclusions	Critical conclusions
Inflation	• Steady state inflation can drop to zero without posing problems for the conduct of monetary policy[37] • Can bring about zero inflation[43] • Money creation through government spending leads to a temporary increase in real GDP[43] • Avoiding inflation during the boom- and deflation during the bust-phase, can be achieved[38] • Government debt can be liquidated without triggering inflation[39,40] • Public money policies are introduced for curbing GDP gap and inflation[40]	
Asset prices	• Lower house prices[46]	
Investments		• Possible lack of private investment[44] • The proposal could serve to constrain new invest-ments by the lack of availability of savings[45]
Transition to SM system	• A smooth transition to the reformed monetary system seems feasible[38] • A six-step transition process can be carried out peacefully without causing inflation and systemic chaos[40]	• It is very doubtful that a transition would be possible with a few simple regulations[42]

Areas of further research

Academic conclusions differ in some areas, but in many cases they are decisive and indicate that adopting an alternative monetary system could prove important in many economic aspects. This indicates an urgent need for further research in this field.

The increased political interest is creating a demand for more in-depth research of the SM system. Since money and the monetary system are a foundation of the economy it is essential that any steps towards the adoption of an SM system should be taken based on careful consideration of all potential consequences. Further research is needed on viable means of optimising the structural requirements and possible implementation of the SM system, e.g. with respect to the payment system, monetary policy and the transition process to the SM system. Also, further research is needed regarding the effects of reforming the monetary system on public finances, financial markets, financial stability and the real economy with the aim of resolving conflicting conclusions in these areas.



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Aðalgötu 5

Vestmannaeyjar
Kirkjuvegi 23

Tel. +354 545 6000

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