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ScotPound: digital money for the common good

A new socially inclusive payment system for Scotland

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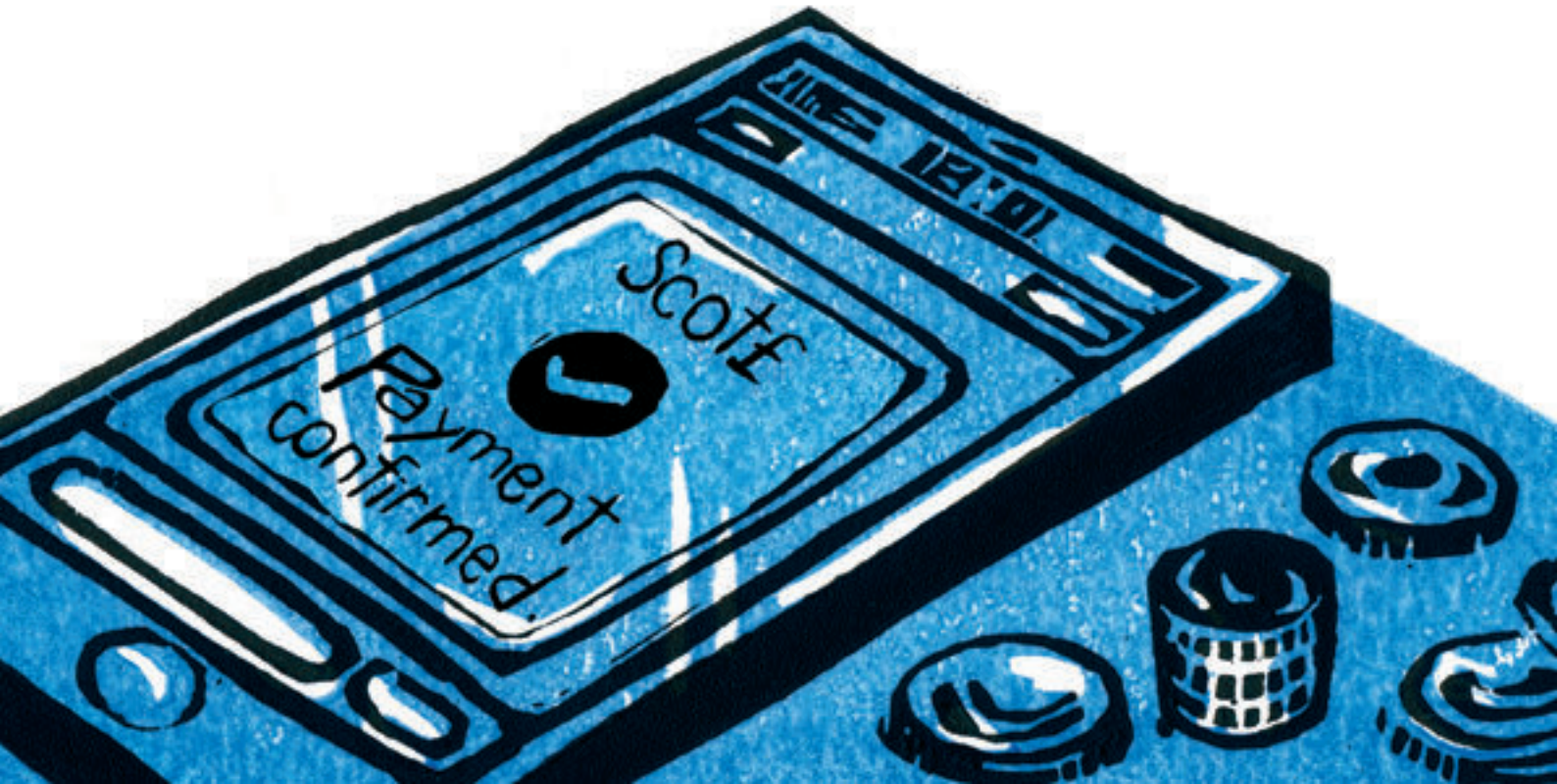


Executive summary

Digital innovation has opened up exciting possibilities for new kinds of money and exchange. As a clearly defined economic and physical area of 5.3 million people, with a strong national identity, and a devolved parliament, Scotland is perfectly placed to create a new digital currency and payment system. Such a scheme could stimulate local economies, create a level playing field for small businesses, and support social justice for all its citizens.

The question of currency loomed large in the Scottish independence referendum campaign. The fear of losing sterling was one of the decisive factors in the eventual result. But the debate lacked an informed analysis of what independence would mean for the pound, or what a new Scottish currency could look like.

Crucially, Scotland does not have to give up sterling in order to introduce its own new domestic digital currency. Such a new payment system could operate alongside sterling and provide social and economic benefits that complement the continued use of the UK's national currency.

Money is one of humanity's greatest inventions and a powerful social technology. But most people, despite using it every day, have never considered what money really is, how it works and its impact on society.

A growing group of innovators have realised the potential to change the design of money so that it better serves people and the planet. So far, most such schemes have been on a small scale, but developments in internet and mobile phone technology are offering new, bigger opportunities.

In the UK, 97% of new money is created by commercial banks in the form of interest-bearing debt - loans. Scotland, like the rest of the UK, would benefit from a pluralist monetary system that includes forms of money not based on bank debt creation to mitigate the worst consequences of the current system and create a more diverse and resilient economy.

This report outlines the creation of a new national digital currency, ScotPound, and free-at-point-of-use payment system, ScotPay, for Scotland. Our proposals draw on over two decades of research into top-down reform of existing national currency systems and bottom-up local and complementary currencies.

The new Scottish currency would be non-convertible and purely digital, operated through an arm's length public enterprise – BancaAlba.

The introduction of such a scheme, even if relatively small-scale at first, would have a number of social and economic benefits:

1. **An economic boost:** We propose a 250 ScotPound (S£) dividend be given to each Scottish citizen, increasing the overall purchasing power within the economy. The injection of funds would not add to the UK deficit and we estimate the payment infrastructure of the system would be low cost – in the region of £3 million – all at a time of austerity.

2. **Lower costs for business:** A new payment system – ScotPay – would provide the world's first publicly owned, not-for-profit national payment system, enabling Scottish businesses to accept payment for goods and services without being charged fees by banks and global credit card firms.

3. **Socially inclusive:** The currency would be available to all, with mobile phones the main instrument for making payment via text message or on an app. For those unable or unwilling to use the technology, a voice recognition system would also be implemented to ensure inclusion.

4. **Leading by example:** The project would demonstrate that a new national currency can be created and implemented. Successful implementation could significantly reduce the chances that any future debates about independence would be unduly influenced by the fear of losing sterling. The programme would improve understanding about how money works and its potential uses. Scotland would position itself as a world leader in financial innovation.

The specification and design of the ScotPound currency, the ScotPay public interest payment system, and the arm's length public enterprise operator BancaAlba set out in this report are not final blueprints. In highlighting the huge economic and social potential of financial innovation, we hope that Scotland's people and political parties will debate and consider such a scheme, with or without another independence referendum.

1. Introduction – why money matters

The study of money, above all other fields in economics, is one in which complexity is used to disguise truth or to evade truth, not to reveal it. The process by which banks create money is so simple the mind is repelled. With something so important, a deeper mystery seems only decent.[1]

J.K. Galbraith, economist (1975)

1.1 Money and independence

Many independence movements have demanded a new national currency and sovereignty over monetary policy. During Scotland's 2014 referendum debate, the main pro-independence party was unusual in proposing to continue to use British currency post-independence.[2] The degree of influence requested over monetary policy in the sterling zone was modest, consisting of minority representation at the Bank of England. This is in marked contrast to the nineteenth-century American revolution, about which Benjamin Franklin stated that 'the root cause of the Revolution was the act of Parliament that prohibited the colonies from continuing to issue their own money.'[3]

In the Scottish independence referendum campaign, the currency question was often marred by misinformation and misunderstanding. For example, the repeated assertions that Scotland was too small for a successful independent currency, and that Scotland could be prevented from using the British Pound post-independence, were without foundation. But the doubt and fear created within the Scottish electorate led to the currency question being the biggest single issue driving people to vote against independence.[4]

It bears underlining that, while Scotland could have been prevented from having any representation at the Bank of England, there was nothing that the Westminster government or the Bank of England could have done to stop Scotland continuing to use the pound after independence, and alongside a new currency. Indeed, Her Majesty's Revenue and Customs (HMRC) already allows individuals and companies to settle their tax bills in any major currency.[5]

Several countries have successfully launched new currencies as well as a host of formal and informal agreements for countries to use another nation's currency (Table 1).

Table 1. Countries that launched a new currency or entered a currency agreement.

Country (date currency launched)	Currency model
Ireland (1928)	National currency maintained de facto at parity with sterling. After independence, an Irish Punt was established but sterling was still widely accepted. Parity was only broken by Ireland joining the European Exchange Rate Mechanism in 1979.
Singapore (1967)	National currency was historically pegged to various currencies and is now monitored against a basket of goods. It is controlled by the powerful Monetary authority of Singapore.
Slovakia (1993)	When Czechoslovakia split, both countries (Slovakia and the Czech Republic) established their own currency. Although the currency initially devalued, especially against the Czech Krona, it quickly stabilised and helped facilitate the significant growth in the economy during the 1990s.

In short, the currency question should not have been a decisive factor in the question of Scottish independence. It is nonetheless an important question, and that is why it is particularly problematic that the debate was heavily skewed by two key false assumptions:

1. That Scotland could only use one currency, and so had to choose between the pound, the euro, or a new Scottish currency.
2. That the only method of creating new money is the current system of private bank credit creation with the resulting liabilities (deposits) underwritten by the central bank and the state.

This paper refutes both of these assumptions. We advocate a pluralist monetary system that includes forms of money that are not based on bank credit creation. Economies, particularly ones open to international trade, can benefit from the active use of more than one currency, and it is not only banks that can create new money.

The pluralist system we set out in this paper would create a more resilient monetary system as well as allow Scotland to increase its money supply without requiring individuals, businesses, or the government to go further into debt.

1.2 The importance of monetary devolution

The current debate and proposals on Scottish devolution are focused on devolving fiscal (tax and spending) power. However, if there is one lesson we can draw from the Greek tragedy that has slowly unfolded since the financial crisis, it is that fiscal independence is ultimately meaningless without at least some monetary sovereignty.

The Scottish government should beware of the danger of mimicking some of the defects of the Eurozone where fiscal autonomy is distributed, within certain limits, but where monetary policy is set centrally. This has not been a good recipe for countries out of step with the economic cycle of the dominant players in the Eurozone. Having joined the Eurozone, poorer countries in Europe were unable to devalue their currencies against much richer countries as a means of reflating their economies and boosting exports post the financial crisis. Without an established mechanism for recycling the surpluses of the richer Eurozone countries, the result has been economic stagnation, deflation, and very high levels of unemployment.

Monetary and fiscal policies are conventionally seen as very distinct activities under the responsibility of distinct entities:

- **Monetary policy** (as currently implemented) aims to keep the rate of inflation low and stable, and in normal times involves altering the central bank's interest rate in order to influence the money supply. It is today conducted by central banks that operate independently of political control.
- **Fiscal policy** involves the government changing tax rates and levels of government spending to support the economy and manage the national debt and the distribution of wealth.

Since the global financial crisis, the use of quantitative easing (QE) programmes as a central plank of monetary policy across the world has blurred the division between the two activities. Some have claimed that QE is fiscal policy since it involves the injection of liquidity (or money) into a certain sector of the economy (financial markets and banks) and has distributive impacts as it boosts asset prices.[6, 7, 8]

Just as there is no clear line between fiscal and monetary policy, devolution and control of these policies are not binary, or all-or-nothing issues. In reality, there are varying degrees of sovereignty.

Under the devolution settlement following the independence referendum, the Scottish government secured a commitment to increased fiscal autonomy that falls short of total independence. This proposal likewise increases monetary autonomy without requiring full monetary independence and the complete switch to a new single national currency.

1.3 What is money?

Most people use money every day, and many go to great lengths to acquire it. Yet despite its central nature to our lives very few people actually take the time to understand what money is, how it is created, how its design impacts our economy, or whether the monetary system could be improved.

We take money for granted as an integral part of any civilised society. Yet the origin and development of money are clouded in myth. The conventional story was immortalised by Adam Smith.[9] He saw money as emerging to overcome the inefficiency of barter. To get around the problem of the 'double coincidence of wants'[10] needed for barter, traders began to use commodities whose value was representative of other tradeable items. Later, according to this story, bank credit systems emerged, with credit notes backed by these original commodities.

Although this seems an intuitive theory, as anthropologist David Graeber has pointed out, 'our standard account of monetary history is precisely backwards. We did not begin with barter, discover money, and then eventually develop credit systems. It happened precisely the other way around.'[11]

Well before the invention of modern markets and commodity money, there is evidence that measuring value arose out of the need for societies to settle disputes via non-reciprocal gifting of widely valued goods. These became increasingly formalised and determined in public assemblies as societies became more complex.[12] The first documented 'money' systems were in fact centralised accounting systems overseen by temples or palaces that recorded credits and debits, typically in the form of agricultural commodities such as cattle, grain, and tools.[13]

Money originated then, not as a cost-minimising medium of exchange as in the orthodox economics story, but as the unit of account in which debts were settled. Graeber argues that the later development of metallic money – gold and silver coins – was due to the onset of wars when the networks of trust required for credit systems broke down and coinage was a simpler way of paying soldiers, themselves poor credit risks.[14] Modern fractional reserve banking began when goldsmiths issued receipts for the storage of precious metals and these 'notes' were used to settle debts. Over time technological developments have meant that in today's money system 97% of the money in circulation is issued as interest-bearing credit (debt) by commercial banks and destroyed when loans are repaid. These banks also act, in the collective, as today's centralised accounting system via interbank settlement.[15]

This history of money is important because it shows that money is neither predetermined in form, nor neutral in effect. It is, rather, a *social technology* that need not be fixed to any specific design features or rules. Laws prohibit certain activities and define money in certain ways, but these are merely human constructs and not natural laws.

Most economists define money in terms of what it does and that is usually divided into the four core functions that it performs. The functions are that it acts as:

1. A medium of exchange allowing us to pay for goods and services.
2. A unit of account, meaning that it allows us to understand the relative price of a number of different things.
3. A store of value, giving people security that the money will still be worth the same in the future.
4. A means of making final payment or settlement.[16]

A potentially more useful way of thinking about money, and one which is extremely relevant to this proposal, is to define money as an 'agreement within a community to use something as a medium of exchange'.[17] This highlights two important issues: that any community can by agreement use something as money and that the most important function of money is to facilitate exchange. Another helpful description is that 'money is not metal; it is trust inscribed'[18] which highlights clearly that money does not derive its value from the fact that it is backed by some physical asset, usually a commodity such as gold, but that trust in the system, meaning that it can still be used tomorrow for something that one considers useful, is its most crucial asset.

The way that we design money empowers and enriches some, while disempowering and impoverishing others. It bestows power on banks that are able to create and allocate new money; it increases inequality through the impact of interest payments; and drives up asset prices, benefiting those who already have assets. We, as humans, created these money systems and it follows that it they are judged no longer fit for purpose, they should be changed accordingly.

1.4 New money for Scotland

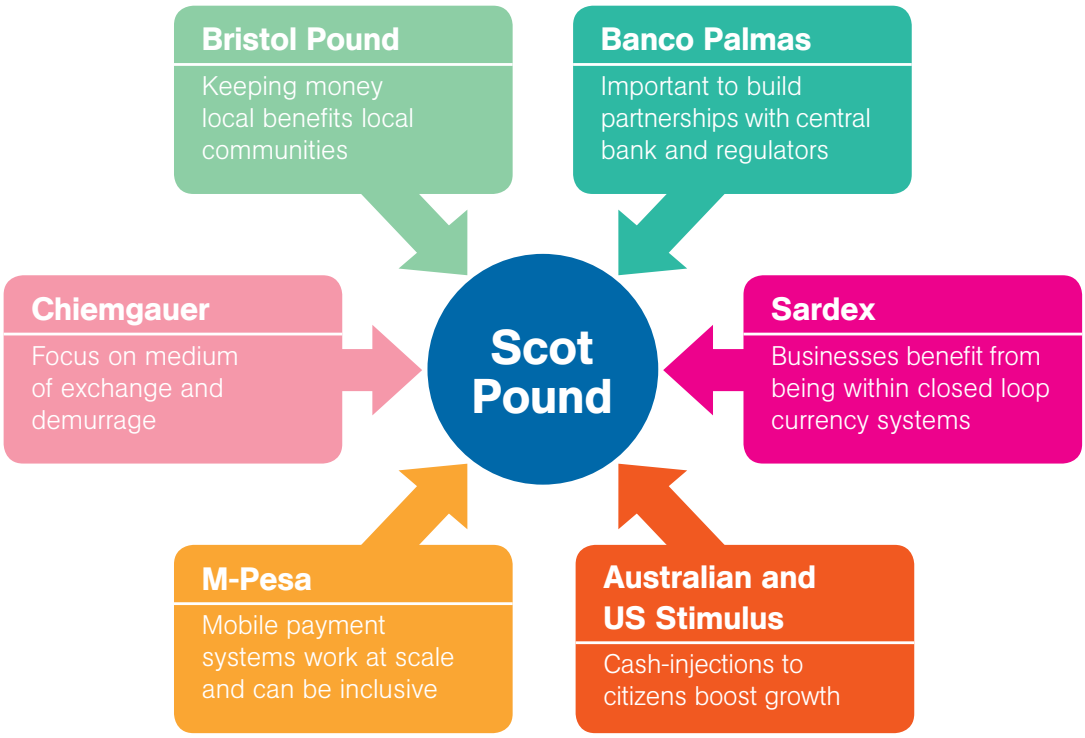
The implementation of a parallel currency, as outlined in this paper, would provide a new channel to inject additional purchasing power into the economy in order to act as a means of countering the recessionary effect of the imposed spending cuts. It would provide money directly to citizens who are most likely to circulate it through the economy. It would:

- Provide a free and inclusive payment system to allow all people and businesses to freely transact electronically.[19]
- Allow the 64% of SME businesses who do not currently accept digital payments to do so.
- Prove that a new currency can be implemented.
- Set the foundation for a prosperous Scotland.

This new money would not be created as interest-bearing debt, something that is not possible at the moment, and it would be distributed directly and equally to all adult citizens. This new monetary policy tool would be useful in times of austerity.

Our proposal for a new digital Scottish currency builds on the learning gathered from monetary reform and complementary currency movements over the last 25 years. Some of the best ideas from each field are merged into a new economically significant national complementary currency.

Figure 1. Proven elements of ScotPound in practice from six international case studies.



Our working name for this new currency is 'ScotPound'.[20] Its key features are as follows:

- Digital-only currency operated by mobile phone, land-lines and the Internet.
- Payment platform operated by a not-for-profit public enterprise (BancaAlba[21]).
- Accepted by the Scottish government in full or part payment of taxes and for public services.
- Accepted by many Scottish businesses in full or part payment for goods and services (Section 4.1.2).
- No fees or charges for businesses accepting payment in ScotPound.
- Currency units are equal in value to sterling (i.e., denominated in sterling), but cannot be converted into sterling allowing easier integration into the Scottish economy.

- Taxes paid on ScotPound transactions on exactly same terms as sterling, but tax evasion much harder because the currency is digital, all accounts are in legal person or business name, and it cannot be moved 'offshore'.
- Free account for every adult citizen, with an initial dividend of S£250 per person paid into the account.

The initial bonus of S£250 per person would launch the system with S£1billion of purchasing power.[22] Like other currency systems, such as sterling, euro, dollars, and yen, this initial issuance of S£1 billion, which would be new money that does not come from existing taxes, would not have to be purchased from anywhere, or backed by gold or another currency, but would be issued by BancaAlba.[23]

The currency's value would derive from a network of businesses, which would accept the new currency in exchange for their goods and services. Businesses could choose whether to accept payment in 100% S£ or only a proportion, say 50%, in S£. This would be especially relevant for higher value items. In addition to the recruitment of businesses, the Scottish government would accept[24] the new currency for certain local taxes, fines, and potentially social housing rent as well as certain public services. This would be feasible because many taxes are or will become devolved in Scotland (see Section 1.5 below). Businesses and government would then also spend the money that they collect through the payment of staff and the procurement of goods and services.

The new currency is not intended to replace sterling. It would be a supplementary source of purchasing power and a new socially inclusive digital payment system (Section 4.3). The differences between ScotPound and sterling are set out in Table 2.

Table 2. Key features of sterling and ScotPound.

	£ sterling	S£
Issuance	Central Bank printing notes and coins (3%), Commercial Banks when they make interest bearing loans (97%)	Issued by BancaAlba without interest and distributed directly into the economy
Distribution	New money distributed to those taking loans	Distributed equally to all eligible people in Scotland
Transaction medium	Notes, coins, and electronic	Electronic only
Backing	Bank of England promise, usable for taxes, faith that currency will be accepted	Usable for Scottish national and local taxes, faith that currency will be accepted
Geography	International	Can only be used in Scotland
Payment infrastructure	Fee-paying private infrastructure	Free at point of use payment system

Successful implementation would reduce the potential for the 'currency issue' to be a major part of any future vote on independence. ScotPound would demonstrate that creating and running one's own currency is feasible.

The project should be funded by the Scottish government (for more information on the potential costs of the project see Section 4.6).

1.5 Taxes in a devolved Scotland

There is a common misconception that, in the UK, tax is only payable in £ sterling. In fact as was confirmed in a personal communication with HMRC, it will in fact accept payments for tax owed in 'any currency'.[25] By 'any currency' HMRC actually means any currency easily convertible to sterling. As HMRC immediately converts the amount to sterling, it will charge the payer enough to ensure that not only is the tax liability met but also the conversion costs.

The devolution of tax powers has been an important part of the drive of the Scottish government for full fiscal autonomy over the last few years. The Scotland Office cites the Scotland Act of 2012 as 'the biggest transfer of fiscal powers in 300 years'.[26] The reality did not quite match the rhetoric however with the Act merely offering additional powers to vary the income tax rate by as much as 10% from UK rates as well as full devolved control over taxation on land sales and landfill. The fully devolved taxes only amount to 'devolving 1.08% of total Scottish revenue'.[27] This is in contrast to council tax, which was already devolved to local councils in the whole of the UK and which represented over 4% of total Scottish revenue.[28]

In order to administer these newly devolved taxes Revenue Scotland was created. Revenue Scotland is the tax authority responsible for the administration and collection of Scotland's devolved taxes. These taxes — Land and Buildings Transaction Tax and Scottish Landfill Tax — came into effect on 1 April 2015, replacing their UK equivalents. Revenue Scotland was established as a Non-Ministerial Department on 1 January 2015 with a Board, a Chief Executive, and 40 members of staff.

The 2015 Scotland Act has sought to further extend the powers of the Scottish parliament to be able to set the thresholds and rates of income tax. It will also control a portion of the VAT raised in Scotland and all of Air Passenger Duty. As already mentioned, the collection of council tax has been devolved to local councils, including in Scotland. Council tax pays for nearly a quarter of all local services.[29] In 2012/2013, Scotland raised just over £2 billion in council tax.[30]

Business Rates — also known as non-domestic rates — are the tax on business premises set by central government. Although they are collected locally by district and borough councils, the money raised is then passed to central government. The government then distributes the money back to local authorities. In 2012/2013, Scotland raised £1.9 billion in business rates.

Land and Buildings Transaction Tax (Stamp Duty in UK), which is a tax applied to residential and commercial land and buildings transactions and the Scottish Landfill Tax, which is a tax on the disposal of waste to landfill and is charged on a weight basis and dependent on the polluting nature of the material, are

both fully controlled by the Scottish parliament and collected through Revenue Scotland. In 2012/2013 Scotland raised £472 million and £100 million, respectively, through these taxes.

In addition, the Scottish parliament has full control of Air Passenger Duty due on all passengers leaving from Scottish airports. In 2012/2013, Scotland raised £235 million through this tax. During the referendum, however, the Scottish government announced plans to reduce and ultimately eliminate the tax.[31, 32] In addition, 50% of the VAT raised will now also be under the control of the Scottish government. This is by far the largest of the devolved tax powers. In 2012/2013 Scotland raised £9.3 billion through VAT.

The extent to which the tax powers will be devolved to the Scottish government in the future remains uncertain. That these powers will be extended beyond what they are today, however, remains pretty certain. The Prime Minister has confirmed that 'extra powers going beyond the commission, which gives Scotland nearly full control over income tax, air passenger duty and housing benefit' could be considered.[33]

The tax landscape in Scotland therefore offers significant opportunities for the Scottish government to accept ScotPounds for some taxes. The most obvious route for getting ScotPound accepted would be through the fully devolved taxes such as council tax, landfill tax, and the Land and Buildings Transaction Tax. These are taxes where the amount to be raised and the means to raise it are both controlled by the Scottish government. Based on 2012/2013 figures, this represents £2.57 billion in tax receipts. Therefore should the government wish, it has ample opportunity to collect taxes in ScotPounds.

There then remain opportunities to explore how ScotPounds could be accepted for taxes that pass through central government but are controlled by Scotland. This would be more complex and would require the agreement of the UK government. Future opportunities will also present themselves as further powers are devolved and Revenue Scotland starts to collect and administer a larger portion of the total Scottish tax base.

2. Why we need to change money

Monetary innovation is challenging because most people are not aware of the implications and impacts on society of the current monetary system. Common misunderstandings and confusion dominate discussion, and so in this section we offer a brief overview of money creation and why it matters.

Those who are familiar with how the modern monetary system works may wish to skip to Section 3, where we set out in detail some of the benefits of the new currency.

2.1 Money creation in the modern economy

There is a widespread lack of understanding about how the money system works and where money comes from. A survey of MPs commissioned by Positive Money showed that over 70% could not identify banks as a creator of money in the economy, with only 10% able to identify them as the principle creator of money.[34]

Misunderstanding the nature of money and how it works is shared by economists, bankers, and many lay people. For example, the major textbooks still describe the way that central bank reserves limit money creation through the money multiplier despite numerous and detailed refutations.[35] Some of the confusion stems from the fact the government, through the central bank, still has a monopoly on the creation of physical notes and coins. With the increased use of cards and online transaction systems, however, the ubiquity of physical money has reduced dramatically over the last century.

Today, the vast majority of money in modern industrial economies, 97% in the case of the UK,[36] is created by commercial banks when they make loans, not by central banks or other state actors. This is a new — or, more accurately, rediscovered — understanding of money. It has exposed the fact that the government, through its central bank, does not decide when or for what purposes new money should be created.

The Bank of England finally made this clear in 2014, making it one of the first central banks in the world to explicitly state that:

> *"In the modern economy, most money takes the form of bank deposits. But how those bank deposits are created is often misunderstood. The principal way in which they are created is through commercial banks making loans: whenever a bank makes a loan, it creates a deposit in the borrower's bank account, thereby creating new money."*[37]

And:

> *"Whenever a bank makes a loan, it simultaneously creates a matching deposit in the borrower's bank account, thereby creating new money."*[38]

It is worth re-reading these statements alongside Galbraith's statement, 'the process of money creation is so simple that the mind is repelled.'[39] Banks create money in the act of issuing loans. The money 'lent' in this way does not exist prior to the loans being made and the decisions about the way that money is distributed throughout the economy are made by commercial banks.

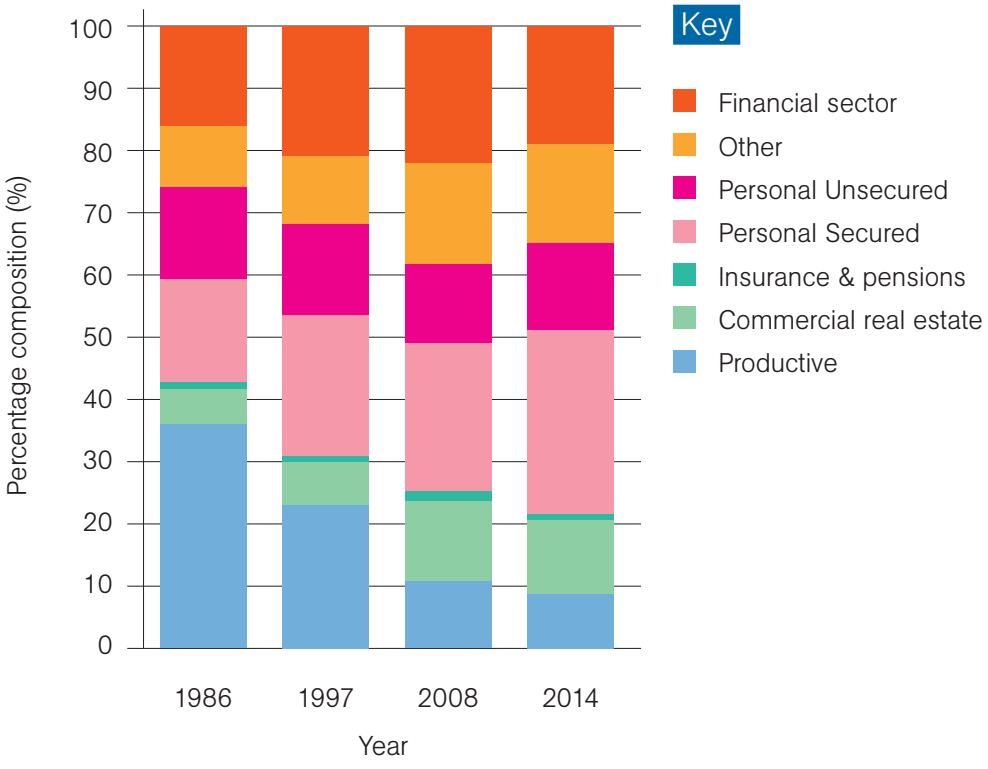
Neither are banks constrained by central bank reserves, another common misconception. The Bank of England can attempt to influence the cost of banks borrowing reserves from each other within the interbank settlement system via adjusting the short-term interest rate but in reality the Bank must always accommodate banks' demand for reserves to ensure the smooth functioning of the payments system. Banks make loans first and 'look for the reserves later'.[40] The only real constraints on banks' lending in today's economy are the demand for loans from customers and banks' own perceptions of the riskiness of any particular loan in relation to their capital and liquidity positions.

2.2 Problems with contemporary money creation

As we have seen, the quantity of new money and the purpose for which it is allocated is dictated by the commercial interests of private financial institutions. There is no sound reason on which to base this, outside the narrow, unrealistic assumptions of economics textbooks, which suppose that these interests will exactly coincide with the public interest in imagined economies where 'representative agents' with near perfect information optimise their utility to generate equilibrium states.[41] Indeed, the global financial crisis must be seen as conclusive proof to the contrary. In any event, what exactly is in the public interest is a political, not an economic, question. There is no allowance for social need in the current financial system or any co-ordination of money creation and allocation in line with key economic strategic aims or principles.

For example, in the UK only 8% of bank lending, and therefore 8% of new money, goes to productive business sectors and contributes directly to GDP. As shown in Figure 2, banks have directed the majority of their credit into loans secured against assets such as property. From the point of view of individual banks secured loans appear safer than lending against future cash flows, but when all banks expand lending for asset purchases it can inflate asset values leading to credit bubbles and financial instability that threatens the banking system as a whole. This long-standing bias against business lending in favour of property lending among British banks is reinforced by the Basel capital adequacy regulations that increase the cost of capital for business loans relative to mortgages and speculation in bonds.

Figure 2. UK domestic bank composition of net lending by industrial sector 1986–2014.



Another major impact of the current system of bank-credit money is that society essentially 'rents' the majority of the money supply from the banks. The amount of money in the economy, based on the Bank of England's broadest measure of the money supply (M4), stood at £1.821 trillion in May 2015.[42] The great majority of this money supply was created through bank lending and the cumulative interest payable on this credit is a substantial burden on the productive sectors of the economy and households. It feeds through into higher prices for all goods and services. This burden falls unevenly, however, as those with substantial bank deposits, other assets, and few debts will receive interest income from all those in the economy with net debt. Research suggests this leads to a transfer to wealth and income from the bottom 90% of the population to the top 10%.[43] Debt contracts do not all arise from the creation of bank credit — other examples include government and corporate bonds, and peer-to-peer loans — but in a money system based on bank credit creation, high levels of debt are necessary to maintain

economic activity. Ultimately, under such a system, we cannot reduce debt without reducing the money in circulation.

The allocation of credit has a significant impact on the distribution of wealth[44] – it has enriched those who are already asset rich, and impoverished those who are not. As shown in Figure 2, bank lending goes primarily to fund asset purchases which often results in an increase in the value of existing assets (houses, shares, etc.). This leads to a direct increase in the wealth of those who hold assets. The revolution in easy credit in the last few decades has also masked the dramatic increase in the levels of income inequality in western societies by allowing workers to maintain consumption, for example via equity withdrawal mortgages, even in the face of stagnant or falling real wages. The result is increasingly unsustainable levels of household debt.

2.3 Modern monetary reform

Monetary reform has a long history. The founding fathers of the United States were acutely aware of the impact and the power politics of money creation. Thomas Jefferson stated that:

> *"I believe that banking institutions are more dangerous to our liberties than standing armies. The issuing power of money should be taken away from the banks and restored to the people to whom it belongs."*[45]

There was significant concern that powerful foreign interests lay behind the money creation system and that they were not using this power in order to pursue the best interests of the American people. This suspicion was further exemplified by Andrew Jackson who ran for President in 1829, and won, on a platform of eliminating the Federal Reserve, the US central bank, and returning money creation to the public. This period was brought to an end in 1913 with the passing of the Federal Reserve Act 1913, resurrecting the American central bank.

In the twentieth and twenty-first centuries, major world economic crises led to a blossoming of interest in monetary reform. In the 1930s there was a series of theoretical proposals for new monetary systems, such as the Chicago Plan,[46] along with many, mostly small-scale, experiments using stamp scrips, especially in the USA, Germany, and Austria, based on the writings and ideas of Silvio Gesell.[47]

Although interest in monetary reform never died out, there were few new ideas or experiments between the 1940s and the 1970s when the economy functioned better during the post-war period of the welfare state, the Bretton Woods systems of international financial management, and strong regulation of bank money creation. Following the combination of falling economic growth and high inflation in the 1970s, however, there was a resurgence of practical innovation in money systems with the development of Local Exchange Trading Systems (LETS); time banks followed in the 1980s, local currencies from the 1990s, and digital currencies from the early twenty-first century. All of these experiments remain complementary to national fiat currencies[48] rather than replacements for them.

Despite a host of substantive contributions to the field of monetary reform in

the last few decades,[49] there has been no serious progress in implementing new monetary systems at a national level. All countries in the world currently use an identical form of money creation that vests the power principally with commercial banks, underwritten by central banks and states.

What is the scope for monetary innovation for a nation without its own central bank? We set out in the next section why a new complementary currency would benefit Scotland.

3. Why bother? The benefits of ScotPound

There are clear benefits from the introduction of a new currency and universal digital payment system for Scottish citizens, businesses, government, and the economy. Scotland would lead the world in ensuring truly socially inclusive digital innovation, while the increase in the circulation of money around local economies would offer new opportunities for employment and enterprise. The government would benefit from the additional tax revenue while promoting innovation and research.

In the following section we set out the benefits for Scotland of implementing a new complementary currency and digital payment system. Then e examine the technicalities of how the new currency, payment system, and peer-to-peer (P2P) platform would work and set out the case for the Scottish government showing vision and ambition in placing Scotland at the forefront of innovation in financial technology.

3.1 Benefits for the economy

Creates additional money without increasing the overall debt burden or level of interest payments

Implementation of this proposal would offer Scotland the unique ability to increase the amount of money in people's hands in order to spend into the economy without increasing the overall level of debt in the economy. Indeed, it may help people to pay down private debts.

Extra money stimulates more economic activity[50, 51, 52]

The extra money that would be put into the economy would lead to additional economic activity as Australian and US stimulus packages have demonstrated. In times of low growth and recession, when firms and businesses are not feeling confident to invest or take on new staff, the injection of new money will act as a stimulus to the economy as well as raise tax revenues. The injection via a new currency and payment system could be even more effective and socially beneficial because it would achieve a similar aim without forcing the government into increased borrowing to finance the stimulus.

ScotPounds stay within Scotland – keeping spending power in the local economy

Due to the design of the currency it would not be able to leave Scotland. This would ensure that each S£ stays in the country and does not escape the community, or be used as a means of avoiding or evading tax.

Payment systems as a public utility make digital transactions more affordable

Creating a free-at-point-of-use payment system would reduce the overall amount of money extracted by payment infrastructure owners outside Scotland, money which is therefore not reinvested in the Scottish economy.

Demonstrate that a new national currency can be created and implemented

Successful implementation would reduce the chances that any future debates about independence would be unduly influenced by the fear of losing sterling. Generally, the programme would raise awareness amongst the Scottish population about how money works and can be designed to support the common good.

Encourage the re-use of resources

As part of the project, 320,000 mobile phones would be re-distributed to people who do not already have a mobile phone. This would be achieved without purchasing any new phones but instead extending the life of phones (mainly old 'dumb' phones[53]) that are already in Scotland. The success of this initiative could lead to a greater overall level of product and resource reuse in Scotland.

Increase the resilience of the Scottish economy

The currency would create a more diverse currency ecosystem in Scotland. Research on Switzerland, which has the largest parallel currency in the world, shows that it provides 'spending power that is highly counter cyclical'[54] and that currencies like these can 'play a stabilising role that should be considered in monetary policy'.[55]

Create additional employment

The currency has the potential to create additional employment through increased economic activity. At a minimum there would be jobs created at BancaAlba. In addition, a number of businesses would be able to keep employees in work or create new jobs thanks to the extra business derived from the new currency.

3.2 Benefits for government

Generate additional tax revenue from increased spending

The government would see an increase in tax revenue. Even though people will pay for goods and services in S£, the VAT due will need to be paid for in pounds sterling.[56] If we assume that half of the S£1 billion is spent on goods and services that require the payment of VAT and that the money is spent only twice per year, then this would generate tax revenues of £200 million (author's calculations). If it managed to achieve the same velocity as the German regional currency, the Chiemgauer[57, 58] then the additional tax revenue could be as high as £1 billion per year.

Promote Scotland as an innovative technological, financial, and social hub

The financial technology (fintech) industry is flourishing in the UK and supporting it is a priority for the current government who would like to see the UK leading the world in this sector. Adoption of our proposals would be an opportunity to show Scotland as a source of innovation not only in fintech but, importantly, in socially inclusive digital innovation. A report from Accenture highlighted that in 2014 there was over $500 million of investment by the fintech industry in the UK — triple the level of 2013. Implementing this project would put Scotland at the forefront of this exciting new technology area.

3.3 Additional benefits for citizens

Each person receives S£250 to spend

The most immediate benefit to people would be to receive £250 to spend in participating businesses and on public services or local taxes. Experience of the Australian stimulus package of 2009 and the US tax rebates of 2001 and 2008[59] shows that this type of approach results in an increase in spending and demand in the economy.

Open access to a free and easy-to-use digital payment system

The creation of a free-at-point-of-use payment system would enable people to easily transfer their S£ between each other and to businesses without incurring any costs.

Reduce debt burdens for households

Although the behaviour of individuals is hard to predict, it is conceivable that some people who receive the dividend would use the S£250 on their essential purchases and use £250 of their existing money to pay down debt. Should this happen on a large scale, it could have an impact on the overall level of indebtedness in the Scottish economy.

Shape local community by the allocation of new money through participatory budgeting

In future years, people would be able to engage in helping to shape their local community more actively through the participatory budgeting process. This would enhance democracy in Scotland by encouraging people to get involved on a regular basis in how their community works, prioritising its needs, and investing in what is most important.

3.4 Additional benefits for participating businesses

Open access to a free digital payment network

The creation of a free-at-point-of-use payment system would enable businesses to receive electronic payments without incurring any costs or fees. This would expand the reach of electronic payments, especially to SMEs and micro-businesses, many of whom may judge the set-up and transaction costs of traditional payment systems too high. Secondly, it will allow those already taking electronic payments to do so without the loss of the 3% charged by most payment system providers. This could lead to modest price reductions or improved profitability of SME businesses.

Increase business for those businesses in the network

Unlike legal tender, which businesses are forced to accept, the new Scottish currency would be voluntary which means that, assuming that not all businesses sign up, those who do should see extra sales and revenue from people seeking spending options for their new currency. In addition, businesses who are part of the network would be able to use S£ to trade between themselves, thus freeing up £ sterling working capital for those transactions which require it.

4. ScotPound – how it would work

The new Scottish currency would be non-convertible and purely digital. It would be operated through an arm's length public enterprise using a free-at-point-of-use payment system. The currency would be distributed equally through a 'citizen's dividend'[60] to all eligible people in Scotland.

A new public-interest institution, named BancaAlba in this report, would become the sole issuer of new electronic money, called ScotPound (S£) in this report. Banca Alba would operate a new payment system to transfer money as well as oversee and manage the overall system.

Everyone on Scotland's electoral register would have an account opened for them with BancaAlba. The approximately 3% of people not on the register would be encouraged to open an account at designated public spaces and specific events. BancaAlba would then distribute S£ equally to eligible citizens. Our initial proposal is for it to amount to be S£250 per person.

All individuals would be eligible for their citizen's dividend when they turn 16 or 18, depending on how the rules are set. This would affect approximately 60,000 people every year. Based on the assumption that everyone gets S£250, this would add about S£15 million every year to the total money supply within Scotland.

The new payment system would be the only channel through which people and businesses can transfer S£. The existing legacy payment systems would continue to exist to transfer sterling and other currencies. This payment system would be free for everyone (businesses, government, and individuals) to use. Transactions would be carried out via mobile phone SMS or app as well as online. The operating costs of the system would initially be covered by revenue from the Scottish government (Section 4.5).

Before launch, a network of businesses and shops would be recruited who would accept the S£ alongside £ sterling.[61] In order to increase acceptance of the currency and maximise the benefits of the system, the public sector would also accept S£ for some local taxes and possibly also fines and public sector rent. In addition, public services (transport, leisure centres, etc.) would accept payment in S£.

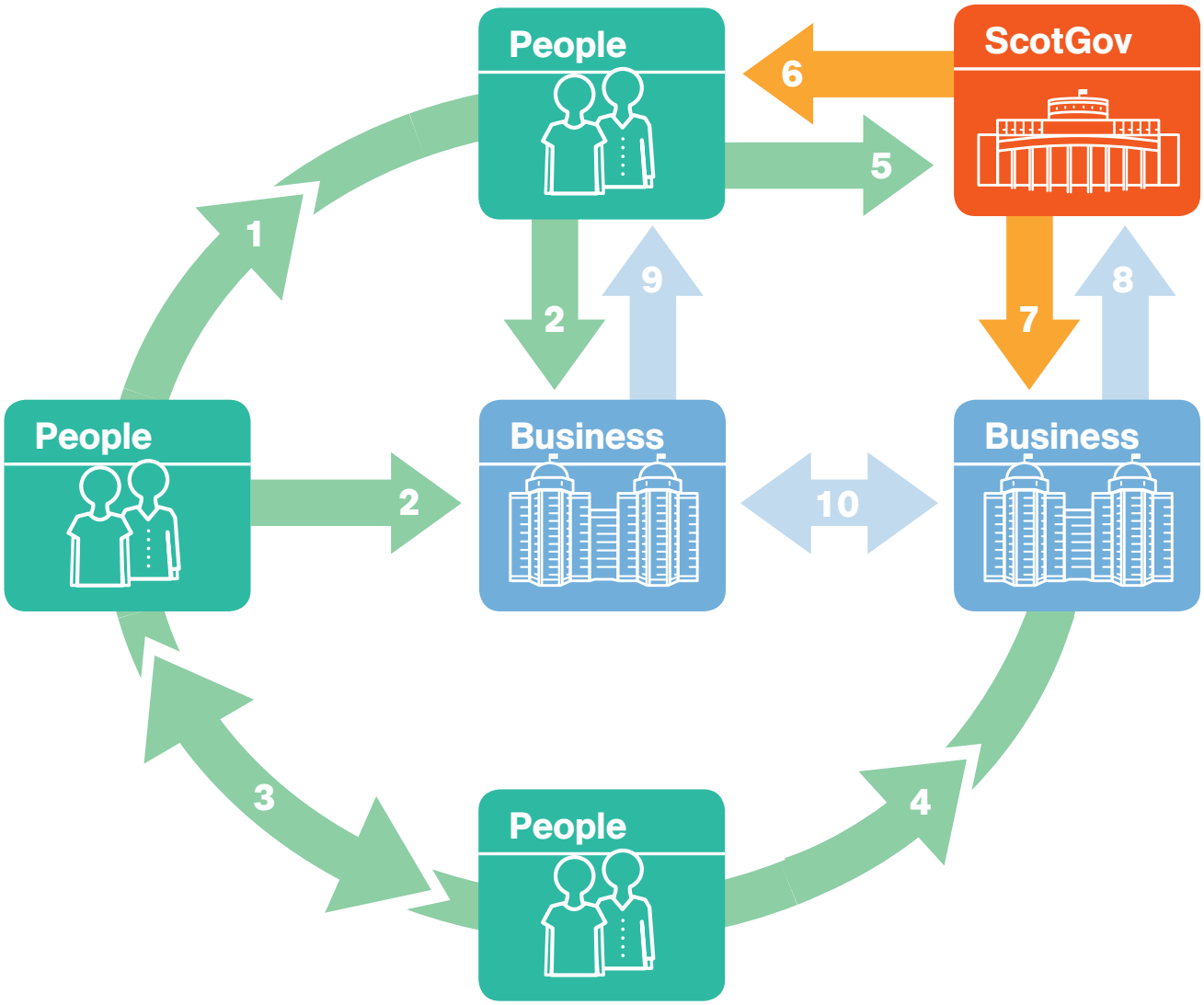
In order to create a functional circulation network, it would be vital to ensure that businesses as well as national and local government respend their S£. For businesses this can be done by encouraging customers to ask for and accept change in S£, buying goods and services, paying applicable taxes,

and part-paying their staff who agree in S£. The government should also procure goods and services as well as offer staff the option of being paid a part of their salary in S£.[62]

In addition, those not wanting to spend their S£ can use a P2P lending system to lend out their S£ to other individuals or businesses already accepting S£. Those taking loans through the system would be required to repay in S£.

The circulation network is graphically represented in Figure 3.

Figure 3. Circulation Network for ScotPound.



Key

1. People pay other people
2. People buy good and services
3. Loans made and repaid through ScotP2P
4. Borrowers spend loan on goods and services
5. People pay taxes and fines
6. ScotGov pays people's salaries
7. ScotGov procures goods and services
8. Businesses pay taxes and fines
9. Businesses pay staff and give change
10. Businesses buy goods and services from each other

The rest of this section covers the technical details and intricacies of the currency, payment system and P2P lending platform.

We consider a number of the design elements that need to be considered when creating a new currency system. The major features are dealt with individually in order to give a better understanding of how the new currency would actually work and be controlled.

In addition to outlining design and technological features of the payment system, we, explain how existing P2P platforms can be leveraged for the currency, before addressing the costs and financial viability of the new system, and ways to ensure it is both socially inclusive and enhances popular engagement with the money system.

4.1 Currency design

4.1.1 Function – what should the currency do?

The currency's primary function would be to act as a medium of exchange[63] and not as a store of value[64] or a unit of account.[65] Although economists might argue that money must exhibit all three functions in order to be properly classed as money, these functions can conflict with one another. In particular, the store of value and medium of exchange functions can come into direct competition when, during an economic downturn for example, people hoard money (store of value function) leaving fewer and fewer tokens circulating in the economy allowing people to transact with each other (medium of exchange function). Keynes, in his General Theory, observed this was a key dynamic of the capitalist system.[66]

The store of value function would not be prioritised in the design of the S£. First, because interest could not be earned by saving S£ with BancaAlba[67] and, second, because the money could not be moved outside of Scotland and nor could it be used for financial speculation. If we assume general inflation levels of 2% as targeted by the Bank of England, idle balances of S£ would effectively lose around 2% of their value each year. If inflation rates were to rise from the current record low levels, this would further stimulate holders of S£ to spend the currency.

A design feature known as 'demurrage' originally implemented in the 1930s stamp scrip currency systems, derived from the work of Silvio Gesell, took this further by introducing what can best be described as a negative interest rate on holding money, meaning that the money would reduce in value over time by even more than the rate of inflation. This design feature limits the use of the currency as a store of value while at the same time strongly encourages people to use it as a medium of exchange – i.e., to spend it. We explore demurrage further in Section 4.1.8.

But those who have no need or wish to spend their S£ immediately could lend them to someone else who does wish to spend it. The rise of P2P lending has allowed people to easily invest their surplus cash by transferring it to borrowers who immediately spend it back into the economy. People would therefore be able to take advantage of a P2P lender for this purpose. This process is entirely unlike accumulating savings in a bank: while depositing

cash in the bank does not directly lead to additional lending into the real economy, our scheme would ensure it does.[68]

4.1.2 Accounting for ScotPounds

The new currency would be worth the same as £ sterling, or in technical jargon its unit of account would be £ sterling. This is not the same as saying that the exchange rate would be one S£ for one £ sterling, because the S£ would not be convertible, or exchangeable, with the issuer, BancaAlba, for sterling.

This scheme has several benefits:

- This parity of unit of account has huge advantages compared with dealing in two different currencies such as the £ sterling and the USD.
- Businesses would not have to show separate prices for their goods and services and customers would not have to constantly convert S£ prices into £ sterling in order to understand or compare them.
- Transactions in S£ would not have to be accounted for separately in the books of businesses as it is equivalent to £ sterling for accounting and tax purposes.
- Finally, businesses holding S£ would not face any uncertainty or currency risk from volatile foreign exchange markets.

Experience from complementary currency implementations around the world, including ones which are non-convertible and non-redeemable, utilising the local legal tender as the unit of account has shown this strategy to be sound.[69] This is particularly the case for currencies accepted as tax because there is an inbuilt stabilisation mechanism in the currency design. Should ScotPounds trade at a discount to sterling on the private exchanges, it may emerge that anyone with UK tax obligations could take advantage of the exchange rate to give themselves a tax cut by purchasing ScotPounds and paying their taxes with them. This would help to create a healthy demand for ScotPounds that would 'reduce if not eliminate the discount through an inherent arbitrage mechanism'.[70]

Some businesses would prefer to accept S£ only as part payment for goods and services. This would be especially true for higher value purchases. The ability to make and accept part payments is already a feature of some of the most successful complementary currencies like the WIR[71] in Switzerland, and the RES[72] in Belgium. Although two transactions would need to be processed, one for the S£ portion and a second for the remaining amount in sterling, there should be no added complexities for their internal systems since the unit of account is the same and they can therefore be treated identically.

4.1.3 Making payments and transferring value

The only way to make payments would be through the new digital payment system (more details in Section 4.2). All transfers on this system would be free at the point of use. The currency would be digital and would not exist in physical form as a paper currency. There are many advantages to this:

- The system and later, additional design changes can be implemented quickly.
- Society in general is moving away from using notes and coins for everyday transactions.
- Data is automatically collected on digital transactions, making it is much easier to analyse the economic and social impacts of digital currency than a paper-based currency.
- BancaAlba would be able to identify businesses and individuals who have a high inflow without matching outflows and provide assistance in finding ways to spend the money.
- A digital-only currency that operates on only one payments system within one country restricts the possibility of theft and loss since a digital footprint will be left should anyone try and take money from someone else's account.
- ScotPounds could not be used for capital flight or tax evasion since all of the records sit on a system that only works in Scotland.
- The potential to be used in the black economy is also minimised by the fact that all the transactions are recorded just as bank transfers are used less frequently than cash for illicit transactions.

4.1.4 Eligibility for the citizens' dividend

The qualification to receive the citizens' dividend should be a matter for further debate by the Scottish parliament, but a reasonable starting point would be the eligibility requirements for voting in the Scottish referendum, which was broadly as follows:

- British citizens resident in Scotland.
- Commonwealth citizens resident in Scotland who have leave to remain in the UK or do not require such leave.
- Citizens of the Republic of Ireland and other EU countries resident in Scotland.
- Members of the House of Lords resident in Scotland.
- Service personnel serving in the UK or overseas with the armed forces who are registered to vote in Scotland.
- Crown personnel serving outside the UK with HM Government who are registered to vote in Scotland.

To ensure the currency is socially inclusive, every effort should be made

to ensure that each eligible citizen is able to claim their citizen's dividend. This would be aided by the recent surge in voter registrations linked to the independence referendum, where over 97% of the electorate signed up.[73]

The remaining 3% of eligible citizens represent about 120,000 people. An effort to cross-check NHS records and tax (NI) records as well as request that universities and colleges check whether students are on the electoral register could help identify most of these people.

Overall, we hope that the receipt of S£250 would provide a strong incentive to sign up for the scheme and that Scotland might achieve unprecedented levels of voter registration approaching 100% of the eligible population.

4.1.5 Issuing new money and removing it from circulation

All S£ would be issued by BancaAlba. Initially there would be a single bulk issuance of S£1billion with the only other means of issuance being upon the sixteenth or eighteenth birthday of a newly eligible person. For a period of 12 months after the first issuance, it is advised that no further S£ be issued pending analysis of the currency dynamics and macro-economic impacts of the initial emission of funds. After this period has elapsed, BancaAlba would decide whether, and if so how much, more S£ to issue into the economy. We examine the proposed governance of BancaAlba further in Section 4.1.6.

The quantity of money

The quantity and flow of money in circulation is critical to an economy. With too little money, or monetary hoarding, the economy grinds to a halt, as insufficient media of exchange for people to conduct transactions exist. With excessive amounts of money, monetary tokens lose their value leading eventually to hyperinflation. But there is no automatic link between the quantity of money in circulation and inflation. In the UK, for example, money supply grew by 3.6% in the year ending May 2015[74] resulting in £64 billion of new money being created by banks making loans. In the same period inflation fluctuated between 0% and 1%. In the eight years prior to 2010, the banks created over £1 trillion of new money, an average growth rate of over 11.8%, but inflation remained at historically low levels of between 0% and 5%. At present, the widest measure of the total UK money supply (technically called M4) sits at £1.821 trillion.[75]

Indeed, there is considerable evidence that it is not so much the quantity of money per se but its allocation in the economy that drives economic performance. An assumption is often made in economics that banks create the majority of new funds for businesses for investment. The reality is that in the last three decades banks have actually created much more money for domestic and commercial mortgage financing. (See Figure 2).[76] In 1986, the percentage of outstanding net debt backed by mortgages was 22%. This increased to over 41% in 2014 with overall outstanding debt across the private sector increasing ten-fold.[77] With a constrained supply of new housing, this leads to rising property and land prices but not necessarily to increased output. This explains why we have had a huge rise in the money supply but no consumer price inflation – we have had house price inflation instead.

However, central banks have, for mainly historical reasons, been much more focused on preventing consumer-price inflation. Some may also

argue that their anti-inflation mandate arises because the economy is run in the interests of the wealthy, who are generally net creditors and holders of assets, rather than the poor, who are usually net debtors. Meanwhile, the Bank of England's mandate to control inflation at 2% through the regulation of the base interest rate has all but broken down. Since the financial crisis of 2007/2008, consumer price inflation has fluctuated between 5% and negative whilst interest rates have been unchanged at 0.5%. In addition, banks have decreased the rate of money created by lending to businesses, in particular SMEs, which is one reason for the slow recovery.

Our proposal is to create S£1 billion at the first issuance that would go directly to citizens who would then spend this money into the economy. This amount is large enough for it to have a significant macroeconomic impact and small enough to ensure that any adverse large inflationary effects are kept at a manageable level. The digital nature of the currency would allow the operators, BancaAlba, an unprecedented ability to assess the economic and social impact 'live'. We would encourage Scottish economists to collaborate with BancaAlba to analyse the data and draw out the key lessons.

Putting money into circulation

In the first year, the money would be put into circulation by dividing the amount issued by the total number of eligible people in Scotland. This method of issuing and distributing money directly to people is sometimes called 'helicopter money'. In recent times economic experts have come out in favour of the idea, with 19 recently signing an open letter in the Financial Times arguing that the European Central Bank (ECB) QE programme would be much more effective if 'each Eurozone citizen could be given €175 per month, for 19 months, which they could use to pay down existing debts or spend as they please'.[78] Proponents argue that when the conventional central bank approach of lowering interest rates and 'traditional' QE no longer stimulate bank lending, 'the costs of maintaining this approach might turn out to be high.'[79]

The Bank of England has confirmed that traditional QE has mostly benefited the richest 5% through the increase in asset prices that it has engendered.[80] Although demand should not necessarily always be increased, the economist Willem Buiter concluded in a recent paper that, when properly executed, 'a helicopter money drop always boosts demand',[81] which in turn, could be beneficial. In addition, evidence from the USA points to the success of such an approach. A recent analysis, concludes that the 'The Economic Stimulus Act of 2008 was aimed at increasing disposable income temporarily through tax rebates in the hope this would stimulate spending and end or at least mitigate the severity of a US economic slowdown. We find that to a significant extent they succeeded.'[82] This proposal seeks to achieve a similar aim, without forcing the government into increased borrowing to finance the rebate.

Accounts that are not touched within six months of the launch would have their initial allocation of S£ removed. All these sums could be aggregated and re-distributed to participating charities with an online voting system allocating the money based on the preferences of the people of Scotland.

Furthermore, it would not be possible to buy S£ from BancaAlba, or redeem

it for sterling or any other currency. There are significant costs and risks to maintaining a fixed exchange rate as this requires large reserves of foreign currency to enable the central bank, or in this case BancaAlba, to continuously buy and sell the currency to maintain the peg. Redeemability with the issuer is therefore a concept that would be too costly and too risky for this proposal. However, even though exchange would not be officially permitted, it is conceivable that private exchange networks may appear and offer rates that may differ from the 1:1 valuation. The risk posed by this would be marginal since, provided that the currency could be accepted for some local taxes, it should retain a reasonable value against sterling. This would limit the potential exposure to receiving a currency that is valued at well below par on private exchanges. As Trond Andersen has argued, as soon as the value of a new currency drops too low on these private exchanges, then all those with payable tax obligations will have a strong incentive, through a discount, to purchase cheap money on these private exchanges to pay their tax bill.[83] Should the value of the S£ appreciate against sterling, it would be more expensive to pay taxes or buy goods and services in S£, relative to sterling, promoting conversion. This would push the value back down again, restoring parity. The same would be true to a much lesser extent if it is only accepted at businesses for goods and services.

The simplest way to issue new S£ after the first year, would be to repeat the initial citizens' dividend, distributed equally to all those eligible. This would be the best way of ensuring widespread acceptance and use of the new currency.

An alternative proposal that is being trialled by Green Party councillors in Edinburgh is the concept of participatory budgeting,[84] in which the allocation of public money is decided directly by the public at town-hall meetings. This concept could be extended to the issuance of the new S£. Scotland could be divided into a number of relatively equal areas (wards or some other existing local division could be useful here). The total amount of money to be issued would then be divided between the number of areas and then each area would decide how to allocate the money.

If Scotland were divided into 1000 equal areas of about 4500 people, and it was decided that another S£1 billion should be issued, this would give each area and the 4500 people who live within it S£1 million to decide how to allocate. They could decide to distribute it directly to people (including themselves), NGOs, charities, small businesses, or local infrastructure projects and public facilities and amenities.

These two alternatives should not be considered to be mutually exclusive, but rather a graduated spectrum. As well as all of the money being allocated using either the citizen's dividend or the participatory budgeting, a proportion of the new money to be allocated could be assigned to both methods of issuance.

As well as democratising the issuance of new money, ensuring it goes first to where the local community wants it to go, this might also have a positive impact on how people interact with each other, politics, and the state. In modern democracies, most people's participation is limited to a vote every

few years. Under this proposal communities would be encouraged to actively debate and decide where money is allocated. This could give them a sense of being part of the economy that they live in and empower them.

Taking money out of circulation

As well as the Scottish government playing a vital role in re-circulating money, during periods of high inflation it may be necessary to remove money from circulation. The easiest way to remove money from circulation would be for the S£ received by the Scottish government for certain local taxes and services to be set aside and removed from the system by being simply deleted from the Scottish government's account. Should there be a need to take additional money out of circulation, a demurrage system could be implemented (explained in detail in Section 4.1.8). Under this mechanism, which is akin to a negative interest rate, S£ would flow back to BancaAlba at regular intervals.

4.1.6 Backing – the importance of a circulation network

What gives a currency its value? What guarantees that people will accept it as payment for their goods and services? This is often conceived in terms of what stands behind the currency, or what is 'backing' it. However, no national currencies are currently backed by an asset with intrinsic value, such as gold, for which the currency can be exchanged by right. The notion of backing money with physical commodities fell out of use when Nixon took the US dollar off the gold standard in 1971.

If you look at a Bank of England note you will see that the only promise it makes is to 'pay the bearer on demand the sum of'.[85] The Bank of England confirms that 'Exchange into gold is no longer possible and Bank of England notes can only be exchanged for other Bank of England notes of the same face value. Public trust in the pound is now maintained by the operation of monetary policy, the objective of which is price stability.'[86] This illustrates that the answer to the question 'What gives money its value and guarantees its acceptance' is quite simply that people trust that it will have value and be acceptable in the future. The Bank of England even states this explicitly:

> *"We trust that banknotes can be exchanged for the things that we want to buy. We trust 'The Promise' that they will be accepted by others for their face value. This trust gives banknotes their value."*[87]

As historian Niall Ferguson puts it:

> *"Money is not metal, it is trust inscribed."*[88]

For those who recoil at the prospect of money being created out of nothing, and backed by nothing, they should be reminded that all national currencies, including the euro, the pound, the dollar, and the yen, currently operate on this basis.

As American economist Hyman Minsky once observed, 'anyone can create money, the difficulty is getting it accepted.'[89] So, if physical backing is not the means for getting people to trust a currency,[90] what is?

Historically there have been two key tools used by governments to enforce acceptance of state money. The first is tax. Requiring taxes to be paid in a

certain currency creates a huge demand for that currency, since we must all pay taxes, either directly through our earned income or indirectly in the goods and services that we buy.

Recognising this, complementary currencies all over the world are trying to work more closely with local governments in order to allow local taxes to be paid in these new forms of money. In the UK, both the Bristol and Brixton councils accept the local currency for business rates and in Bristol citizens can also pay the council tax using the currency.[91]

The second is the designation of 'legal tender'. It might surprise many to learn that the money in their bank current account is not legal tender. At present, the strict legal definition is confined to physical money, notes, and some coins and its only application is with regard to the settlement of debts. Since 97% of the money supply which exists as virtual numbers on a bank computer system is used to settle most debts, the economic significance of legal tender is marginal. The Bank of England states that 'legal tender status has a very narrow meaning in relation to the settlement of debt which is of little relevance to most everyday transactions.'[92]

What is of relevance to most everyday transactions is not whether we can exchange money for an ounce of gold, or that the state determines it legal tender, but that we can use it for something useful, be it to pay taxes, transfer value, or to acquire and consume goods and services.

For this reason the most important task for most complementary currency operators is creating, maintaining, and building a network of shops, businesses, and public services in which the currency can be spent. Only one currency has succeeded without first creating such a network and that is Bitcoin. In this case, entrepreneurs and innovators independently started to accept the currency after it came into existence, often because they had a financial stake in the success of the currency. This was helped by the clever issuance method (the 'mining' algorithm) which rewarded early adopters with a large quantity of Bitcoin. This can, however, be contrasted with over 300 other failed cryptocurrencies[93] where no redemption network has emerged and the value of the currency remains low.[94]

As part of the ScotPound project, a strong and diverse network of partners would need to be built before the launch, including at least 1 or 2 large businesses. Potential candidates are organisations — such as Co-Op Scotland, with a shop in every postal region or ScotMid, with over 200 shops — which already look beyond the bottom line and are part of the retail fabric of Scotland. The large community of SME businesses in Scotland, numbering about 332,000 and employing about 1.1 million people,[95] would be important to bring on board.

As well as accepting the money in exchange for goods and services, businesses, along with Scottish and local government, would also respend it to ensure that the new currency functions properly. (See Figure 3). This is a vital activity that mirrors the importance of it being accepted. If the currency is not respent, it would not really be a currency but would look more like a single-use voucher system.

Experience from other currency systems shows that the most common ways of recirculating currency are:

- **Paying staff** who have voluntarily opted to receive the new currency as part payment of their salary.
- **Giving change** through initiatives to get customers to ask for their change in the new currency. Since it is a digital currency, there should be a drive to encourage people to ask for their change from sterling cash purchases in ScotPound.
- **Purchasing goods and services** from other businesses who accept ScotPound.

4.1.7 Governance

Good governance and oversight are essential in order to maintain confidence in a currency and protect against any abuse of the power to create, issue, and manage the new currency. Although many models and examples exist, we list some of the broad principles and concepts that should be followed when developing a sound governance structure for ScotPound:

- **Non-profit-making.** The currency should be independent of any commercial interest with no profit motive.
- **Politically impartial.** BancaAlba should be independent of any political party or other interest group.
- **Democratic in decision-making.** Multistakeholder processes should enhance democracy within the organisation by increasing opportunities for those most directly impacted by decisions, particularly those at the grassroots who are so often voiceless in these processes, to effectively participate.
- **Transparent and accountable.** BancaAlba should provide access to clear, accurate, up-to-date information in order for the public to evaluate and judge its performance and impact

The structure of the organisation could learn from some of the better features of the BBC, which is an independent corporation, funded by government (through the licence fee) and run by a Trust, whose members are appointed by government. The Trust then appoints people into key positions to run the organisation. The operations of the BBC are governed by a Charter which is renewed every 10 years. These features could all be transplanted to the running of BancaAlba.

4.1.8 Demurrage

Demurrage can be thought of as a built-in reduction over time of the nominal value of a currency[96] or it can be thought of a circulation incentive or retention fee. This discourages hoarding and incentivises spending by essentially levying a tax on currency holders. Ideally, demurrage should involve a charge of a simple negative interest, applied as regularly as practical. Historically, with paper-based currencies, demurrage required the regular (monthly, quarterly) purchase of stamps that were required for the notes to maintain their validity

at face value, hence the term ‘stamp scrip’.

Although not part of the initial proposal, there are good reasons for discussing demurrage during the creation of S£ and once the currency has launched. First, BancaAlba may need an additional tool to withdraw money from circulation. Being a digital currency, upon going through the proper procedures, BancaAlba could implement a demurrage fee easily. Second, there may be a desire at some future stage to increase the speed with which the money circulates in the economy. This feature could be especially effective if the demurrage fee were only applied to idle money rather than to all money.

Since the ScotPound would be digital, demurrage could be achieved very simply by merely coding it into the currency’s software. Demurrage could then be applied as frequently as daily or weekly and without any administrative burden on the holder of the currency to affix a stamp. A more frequent but smaller demurrage would reduce the tendency, visible in quarterly demurrage systems, to create a spike in spending just before a new stamp is required.

Even with a very low rate of demurrage, a relatively significant amount of money could be permanently or temporarily withdrawn from circulation. A quarterly rate of 1% would generate S£10 million every quarter.

Should the money need to be recirculated, then BancaAlba could create a socially positive way to redistribute this money back into the economy. Some potential ideas are to:

- Allocate £10,000 to 100 projects voted on by all those who have active ScotPound accounts.
- Redistribute the money equally to all account holders – this would act as a small redistributive effect as all those below the mean would gain a little whereas those who had accrued a large balance would be net losers.

4.2 Payment system

Just as a train is useless without rails, so a digital currency is useless without a payment system. Cash offers the simplest example of a payment system whereby anyone can exchange a piece of paper with anyone else willing to accept it for good and services. No infrastructure is required to process these payments. However, we are increasingly moving towards transacting digitally either by using cards or online payment systems. 2015 was the first year that non-cash transaction volumes overtook cash transactions.[97] Complementary currencies like the Bristol and Brixton Pound have seen the volume of electronic transactions significantly outnumber paper-based transactions.

There is a rapidly growing new industry looking to innovate in this area: the fintech sector. The Chancellor of the Exchequer last year vowed to create the best environment possible for fintech businesses wanting to set up and grow in the UK.[98] Many fintech businesses are seeking to improve or disrupt the payment space. Some recent examples are PayM, Transferwise, and BitPay.

Denmark[99] and Nigeria[100] have recently announced strategies to move

towards a cashless society by downgrading the notion of legal tender and allowing shops and businesses to decline cash, reinforcing the shift towards digital payment. It is important to consider the social and ethical impacts of such a transition. There are concerns about consumer protection if individuals are disconnected from the only means of making a payment. Some consumers will also be wary of the lack of anonymity offered by conventional digital currencies.[101] There is also a need to diversify the 'well protected oligopoly'[102] that currently controls the payment infrastructure. Finally, it will be important to mitigate against payment systems being used as a political weapon, as was the case against Wikileaks in 2011, Iranian banks in 2012, and Russian banks in 2013.[103, 104]

A new payment system in Scotland – ScotPay - would offer an opportunity to learn about how to address some of these legitimate concerns and position Scotland at the forefront of the digital payment revolution with a uniquely ethical and socially responsible dimension.

One of the unique features of the new payment system is that it would be free at point of use for both the customer and the retailer with the costs being met through the funding provided by the Scottish government raised through general taxation.

All digital payment systems levy charges that are usually invisible to consumers who pay with a debit or credit card. A per transaction fee of between 8 and 25p is normally charged for using debit cards while for credit cards the charge is normally 1 to 3% of the transaction value.[105] Only large retailers with significant bargaining power are able to access the lower rates. It is these charges, as well as the set-up and monthly fees, which discourage many small businesses from using these systems, and distorts competition by handing large businesses an unfair advantage in the much lower charges they can negotiate with payment providers. Research conducted by Paypal in 2013 suggests that over 60% of UK businesses do not currently accept card payments.[106] A survey commissioned by Judo Payments showed that 21% of people have left a business without making a purchase because of the lack of availability of card payments and 19% have avoided businesses for this reason.[107] Judo also discovered that 61% of UK consumers would spend more with a business if it took cards, while none of them would spend less. In order to create a level playing field for the new currency, there would be no charge to anyone for using the payment system. Meeting the cost of creating and running the payment system would be the largest cost associated with the project (Section 4.5).

4.2.1 Choice of technology

There exist many different options for setting up a payment system. The main choice would be whether to set up an independent system or leverage an already existing system. Both of these options are feasible and it would depend on the budget, functionality, and thoughts on future developments. As part of our research we contacted respected and established technology providers, who currently operate various payment systems around the world, and could support either option. They confirmed that the functionality described in this paper could be delivered.

The payment system would be digital only and transactions would be conducted through a phone or computer. Phone-based transactions could take a number of different forms: SMS, a smartphone app or using voice recognition software which would enable fixed-line phones to also be used.

In addition, a mobile app and website would be created for internet banking. This should ensure that a payment can always be made, since almost all dwellings and businesses are connected to at least one of the fixed-line phone network, the Internet, or 2G, 3G, or 4G mobile phone networks.

Paying by SMS

The Brixton Pound in London was the first currency in the UK where payments could be sent via text message. This facility was launched in September 2011 and has since been adopted by a number of systems. The system requires a user, who is recognised by their own mobile phone number, to send a simple text to a dedicated system phone number inputting the merchant's name and the amount. Once the system has settled the payment, a confirmation text is provided to both merchant and customer as receipt.

Paying by app

Traditional banks and some fintech entrepreneurs have started to develop apps that can be used to send money. Some notable examples are Pingit, PayM, and Zapp. Their design varies but all try to make the experience of sending money as easy as possible. Some, like Pingit and PayM, use the phone number as the key identifier to send money. There are many possibilities and the ScotPay system could either leverage an existing app or create its own. Although most of these apps have been primarily designed for phones, they could be very easily adapted to work on tablets and computers.

Paying over a landline

This functionality would be the least used but crucial to ensure the goal of social inclusion. There are areas without mobile signal but with access to a landline. There are also people who find it hard, for a variety of reasons, to use either SMS or apps. This service would offer users the ability to call a dedicated free number where they would be able to talk to an automated system in order to make their transaction. The process would be similar to the pay-by-text method with the user opening the number and identifying themselves with their account number and PIN. They would then give the merchant name and the amount they want to transfer. Once they confirm the accuracy of the information the system has gathered, they could then initiate the transfer. This technology already exists and is in widespread use by commercial banks today.

4.3 Ensuring social inclusion

One of the main goals of the currency and payment system we propose is to be truly socially inclusive. Notes and coins are inclusive in the sense that no technology or infrastructure is required to use them (other than a pocket or purse). Access to bank accounts and digital payments systems are not nearly so inclusive. Somewhere between 1.5 and 3 million UK adults do not have a bank account[108] and as already mentioned 64% of UK businesses to do not accept card payments.

The main barriers to full inclusion in the new payment system:

- Some people do not own a phone.
- Some people cannot afford a mobile phone contract.
- Some people find it difficult to use mobile phones.
- Some people and businesses have no mobile phone signal.

Can we overcome these barriers?

Not all people own a phone
Currently in Scotland mobile phone ownership is at about 92% of the population with over 60% of those owning a smartphone. This leaves 8%, about 320,000 people, without a mobile phone.

Many thousands of phones are currently estimated as being stored, unused, in people's houses. Evidence suggests that many people put their old mobile phone in a drawer when they get a new one[109] and that as many as 90 million phones are unused in UK homes at the moment.[110] BancaAlba would encourage people to donate their old mobile phones to be redistributed to those who do not have a phone.

Although the basic goal would be for everyone to have a phone with text messaging capabilities, a potentially more interesting goal could be for Scotland to become the first country to achieve 100% smartphone penetration. This could be done in collaboration with some of the big handset producers or major refurbishers to provide old, used handsets.

Not all people can afford a phone contract
Some people who get a phone may not want to pay any fees or indeed use the phone. Free pay as you go SIMs should be available to these users. Making payments via text message using the phone would be free for everyone.

People who are visually impaired or find it hard to use a phone
In the UK, 360,000 people are registered as blind or partially sighted, with about 25,000 of these in Scotland.[111] A total of 2 million currently live with some level of sight loss, about 143,000 of whom live in Scotland.[112] In the case of mobile money, because the information is on a small screen, there are no size, texture, or colour differences between the various transaction media. Adoption by those who are blind, partially sighted, and/or disabled

could be more difficult. For other reasons, the same might be true of people who struggle with financial literacy.

Serious efforts would need to be made in order to ensure that the payment system accommodates these criteria and is as accessible as possible. Many phone apps for smartphones are available that could be used to help. These apps can read all of the data on the phone while others can recognise a user's voice and write in the data. Such software can be expensive so we would need to make sure that this was provided free or at a low cost to potential users. Care also needs to be taken not to expose any sensitive information.

In Kenya, a survey found that over 90% of visually impaired and blind people interviewed had subscribed to and used a mobile payment service.[113]

People and shops with no mobile phone coverage

In June 2014, 99.5% of premises in Scotland were in areas with 2G mobile coverage[114] and 98.1% of premises were in areas with 3G mobile coverage.[115] 2G is considered satisfactory for telephone calls and text messaging. Of course, the coverage of individual mobile service providers is less than this. In order to mitigate this issue the payment system, like emergency calls, should be able to make use of all networks

4.4 P2P lending platform

The market for P2P lending has developed and grown along with the emergence and acceptance of P2P networks and technology, and was boosted by the financial crash in 2008. During this time, banks were offering relatively low rates of return, so people with liquid financial assets sought higher yield elsewhere. In tandem, entrepreneurs and SMEs found it extremely difficult to raise funds through traditional means.

P2P lending platforms allow savers collectively to lend directly to borrowers with the P2P company acting only as the intermediary. P2P companies have become sophisticated at assessing credit risk and using technological innovation to lower costs and increase speed, convenience, and transparency for both savers and borrowers.

Leveraging a P2P lending platform is another tool to encourage the circulation of the new currency and discourage potential hoarding. Some people who receive the dividend might either not wish or need to spend it immediately. Under both of these cases money would remain 'dormant' in their accounts and not flow through the economy. These people may be enticed into lending out their S£ through a P2P lending platform which would ensure that the currency ends up in the hands of someone who will use it to perform transactions and increase economic activity.

Importantly, because the lenders' money would not be 100% safe, a set fee or reasonable interest would need to be charged. The interest payments, and potentially even the principal, could be repaid in sterling should the borrower find it hard to acquire S£.

We do not propose to design a new P2P platform but should this part of the proposal be enacted, then an existing platform should be leveraged to create a specific portal for use in lending S£, either commissioned by BancaAlba or emerging naturally from existing private providers expanding into this new market.

4.5 Financing BancaAlba, ScotPound, and ScotPay

In order to meet the operational costs of BancaAlba, the Scottish government could fund it from general government expenditure. This would be the simplest solution. However, it would leave the institution exposed to annual pressures on government finances and vulnerable to political interferences in its operations, which would need to be mitigated against.

Although the exact costs will be driven by the final currency design, choice of vendor to provide the infrastructure and software, and implementation strategy, Table 3 lists some approximate costs for the various stages of development of the currency. The estimates were calculated based on NEF's experience in implementing currency systems and discussions with other experts in the field. The table below shows that although there are some significant implementation costs, such as creating the new payment system and doing the necessary communication and marketing, once the currency is up and running the running costs would be relatively low.

Table 3. Estimate of potential project costs.

Project phase	Area	Detail	Approximate cost
Development	Currency	Consultation process	£1,000,000
Implementation	Currency	Performing the drop	£250,000
Implementation	Payment system	Set-up, testing, and implementation	£1,000,000
Implementation	Payment system	Datacentre equipment	£50,000
Operation	Payment system	6/8 people to do admin for payments	£300,000
Operation	Payment system	Software maintenance	£50,000
Implementation	P2P platform	Update existing platform to take S£	£50,000
Operation	P2P platform	Maintenance and support	£10,000
Implementation	Marketing	Detailed nationwide communication strategy	£1,000,000

4.6 Co-production and people participation

In this report, we offer a rationale and a blueprint for ScotPound. However, for a currency to be successful the community that is going to use it should have some meaningful ownership and control over it. Co-production means professionals and citizens sharing power to plan, design and deliver support together. It's about recognising that everyone has an important contribution to make to improve quality of life for people and communities. The co-production approach should be used in the currency design process itself to help establish the currency as a true citizens' currency. There is no definitive co-production process but rather certain guiding principles that can be used to steer a project.

In addition to co-producing the overall currency design, there are also a number of features that have been discussed in this proposal designed to engage and involve people. Complementary and parallel currencies cannot force anyone to use them, unlike national legal tender currencies. It is therefore very important to ensure that people feel included and involved in the design, implementation, and operation of the currency in order for it to be a viable success. Competitions have proved to be excellent to help involve people. A national competition to decide on the actual name of the currency as well as design the logo would be a great way to engage the public. Issuing the currency through a dividend would ensure the currency has as wide a user base as possible. Future issuance through participatory budgeting would involve people in decisions that affect their local community on a regular basis. The suggested mobile phone redistribution scheme would create and improve networks to reuse and share old equipment.

5. Learning from other currency systems

Our ScotPound proposals are based on experience of working with complementary currency and innovative payment systems around the world, as well as new approaches to monetary and fiscal policy. The proposal can be seen as part of a wider international monetary reform movement. In this section we review some of these ideas.

5.1 National currency reform

There is a strong movement, both within the UK and around the world, working to reform the way national currency systems work and trying to improve these systems' impacts on the economy, people, and the planet.

The movement is growing and is more vibrant than at any time since the 1930s. The UK debate has been particularly lively in the last decade with the campaigning group Positive Money helping to raise awareness amongst the public and the media about the issues with private-bank-dominated money creation. The New Economics Foundation (NEF) has played a core role providing some of the intellectual foundations for alternative monetary thinking including publishing two landmark books, *Creating New Money*[116] and *Where Does Money Come From?*,[117] as well as reports such as *Beyond Yes and No*[118] and *Strategic Quantitative Easing*.[119]

Some notable recent milestones include the UK parliament having its first debate on money creation in almost 200 years, the Icelandic parliament publishing a detailed report on the potential benefits of changing the money system, citizens' initiatives in Switzerland and the Netherlands almost reaching the threshold to trigger political debate, a number of political parties adopting monetary reform as part of their manifestos,[120] as well as numerous NGOs now working on the issue around the world. Establishment figures such as the *Financial Times*' Martin Wolf[121] and former Chair of the Financial Services Authority Lord Adair Turner[122] have publically questioned the current monetary system architecture and suggested alternatives.

All of these initiatives are seeking, to a greater or lesser degree, to democratise the creation and allocation of money, by removing the private bank near monopoly on money and giving it to an independent public body. The proposals go by many names from full reserve banking, to plain or sovereign money and 'the Chicago plan'.[123] Although they vary in some of their technical details, their broad objectives and fundamentals are quite similar.

5.2 Complementary currencies

Many innovators working together with community organisers have focused their efforts on the creation of new complementary currencies. These are currencies that can operate in tandem with other currencies and seek to achieve specific outcomes. These are the hotbeds of monetary innovation that are teaching us about how we could better design our current monetary system. We outline in some detail the specific projects and innovations that have influenced our Scottish currency proposal.

Complementary currencies can pursue a variety of objectives. They can manifest as economic, environmental, or social instruments designed to address issues or problems that are not addressed by conventional currencies, national or international. Complementary currencies can stimulate local economic development, improve social inclusion, provide liquidity to SMEs, localise production and consumption, build an active civil society, and facilitate digital transactions as well as help implementing local solutions to global problems (i.e., decreasing CO2 emissions).

There are a huge variety of examples worldwide falling to varying degrees into certain generic models, which include local currencies (referred to as transition currencies, Regiogeld, MCL), timebanks and LETS, loyalty schemes, business-to-business currencies, closed-loop payment systems, virtual currencies, game currencies, and even reputation currencies.

One important design feature that unifies many complementary currencies is that they have sought to focus on the medium of exchange function of money. This is the function that concerns most of us, since we transact every day, and the one that really matters to economic activity, since this is what generates taxes, oils the economy, and pays wages.

5.3 Learning from around the world

We have incorporated elements from six different practical and successful local currencies and economic stimulus policies. These are summarised in Figure 1.

5.3.1 Bristol Pound (£B)

Bristol is the sixth largest city in England[124] and launched its own currency in 2012. It is the largest 'transition' local currency in the UK and one of the biggest examples of this currency type in the world. It currently has about £700,000 in circulation and more than 800 businesses signed up.[125]

The primary purpose of the £B is to strengthen the local economy by incentivising people to shop at independent local businesses as well as reinforce the strong sense of identity and civic pride that people in Bristol feel for their city. By incentivising spending in independent businesses, the £B helps wealth created in Bristol to 'stick locally' – research shows that smaller businesses are likely to respend more of every £1 that they receive in the local area as well as employ more people than larger chains.[126] Local businesses are encouraged to trade with each other and create or maintain local supply chains. This way, the £B can help deepen and diversify the connections between local business people and all the citizens of the wider

'city region' – an important part of building a sustainable regional economy that provides high quality employment.

As well as being spent at retailers, the £B can also be used to pay council tax, business rates, staff wages, bus fares, and to purchase business to business (B2B) services.

The key lessons for the ScotPound project are that creating locally restricted money ensures that money facilitates more economic activity in a particular region, or country in this case. In addition these systems also prevent money from flowing out of the economy to be used to evade tax, to speculate, and for other socially useless activity.

5.3.2 Sardex

In Sardinia, Italy, the Sardex, is helping to regenerate local SMEs in the region, without needing to go into more debt. Sardex.net is a B2B clearing system.[127] Launched in 2009, it is an example of a trade, or barter, exchange, where businesses within the network can trade with each other without using the euro. In this system every enrolled business determines, on a yearly basis, the amount of goods or services they want to make available for sale in Sardex in the exchange network. When they need goods or services, firms can contact each other directly via the online marketplace or discuss the trade opportunities with a broker. After a transaction has taken place, the online account of the seller receives the Sardex units corresponding to whatever was agreed with the buyer for the good or service exchanged.

Table 4. Sardex currency system in numbers [128]

	2010	2011	2012	2013	2014 (projection)
Members	237	439	852	1457	2550
Transaction volume	€304,366	€1,171,703	€3,499,122	€14,935,267	€35,545,937
Number of transactions	402	1195	4550	24991	75723

As evidenced in the table above the currency has enjoyed significant growth since its creation, attracting more businesses into the network and generating more transaction and volume. The main aim of the currency system was initially to revitalise the local economy during the financial crisis. Sardex was introduced as a means of facilitating economic transactions and creating new economic opportunities between local enterprises that were heavily affected by the recession. In practice, it offers new ways to increase business turnover on an ongoing basis as well as to conserve euro. A vibrant local business sector is vital, because without it comes a stagnant economy, unemployment, and a lack of disposable income. This is especially true of SMEs as they account for the majority of employment and economic activity in most countries and regions.

The Sardex has shown that, where a wide range of businesses are signed up to the network, such closed-loop credit-clearing systems can stimulate trade between members as well as free up legal tender for activities that happen outside the network.

5.3.3 Chiemgauer

Chiemgauer is the largest Regiogeld (literally regional currency) system, operating in Germany since 2003. The scheme aims to increases local trade and employment by stimulating the consumption of local goods and services. Furthermore, it opens up opportunities for supporting local charitable associations via the fees users pay to keep the scheme running.

As of December 2013 the Chiemgauer had 3,700 users, 627 participating businesses, and 160,000 paper Chiemgauer and 360,000 e-Chiemgauer in circulation driving over €7 million equivalent of turnover.[129]

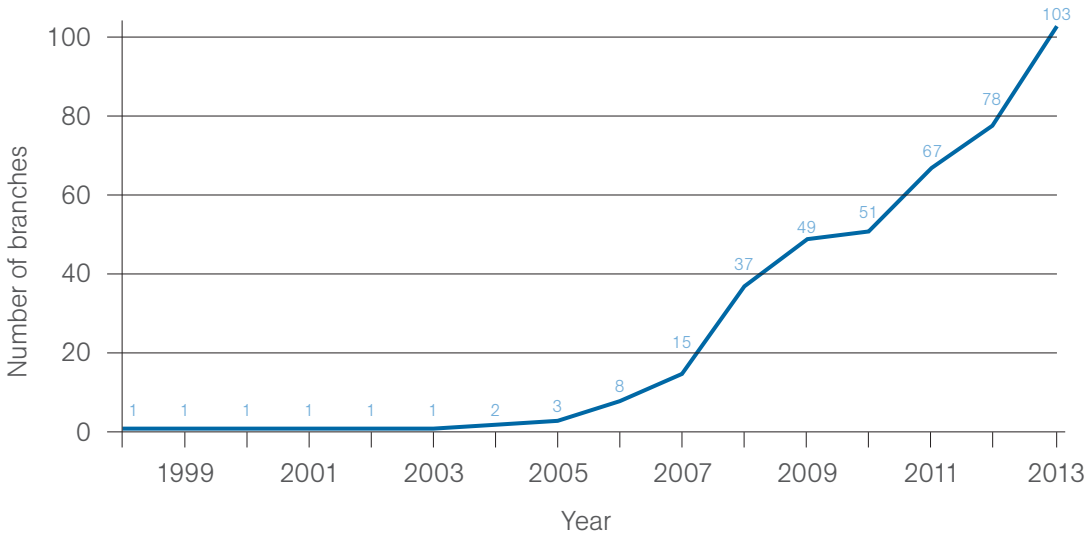
A key feature of Chiemgauer is demurrage: in order to incentivise circulation rather than hoarding, users have to attach a token every three months to keep their Chiemgauer notes valid. This acts as a negative interest rate for holding the currency: the fee amounts to 2% per quarter or 8% on a yearly basis. Chiemgauer users must purchase and attach a stamp on the notes to keep them a valid means of payment: this gives users an incentive to spend their Chiemgauers, thus keeping circulation rates high. The Chiemgauer has a velocity that is three times greater than that of the euro, meaning that each Chiemgauer unit is used for three times the economic activity as its legal tender counterpart.[130]

Chiemgauer has demonstrated that medium-of-exchange currencies can flourish and that demurrage can be a tool to increase the velocity of money in defined regions and multiply its impact.

5.3.4 Banco Palmas

In Brazil there has been a revolution in community banking. The Banco Palmas in Fortaleza has been issuing interest-free microloans in a local currency called the Palmas since 1999. Over the last few years the number of community banks copying the Banco Palmas model has mushroomed, as can be seen in the figure below.[131]

Figure 4. The expansion of Palmas community banks.



The objective of these loans is to enable more local production, through the creation and expansion of small and family-owned businesses as well as to encourage people to spend their money with local businesses. Because the currency was only accepted in local shops, the money circulates solely within the community, thereby promoting local commerce, increasing the circulation of wealth within the community, and generating both employment and income.

These community banks operated outside of the regulated banking system before 2009, when the Central Bank of Brazil lost its case in 2009 against the Banco Palmas bank. Instead of seeking a change in the law or appealing, it embarked on a period of cooperation that would ultimately lead to the flourishing of the community banking system.[132] This expansion may never have been possible without the support of the bank and regulators. Although it may seem attractive to try to remain outside of the system, as many in the Bitcoin community have tried to do, having the support of public institutions can provide much needed confidence in the system.

The Banco Palmas system has shown that working together with central banks and regulators is the best way to ensure that a successful and effective currency is launched. A copy of this report has been shared with the Bank of England and the Financial Conduct Authority; however neither organisation has commented on these proposals.

5.3.5 M-Pesa

In March 2007, the leading mobile phone company in Kenya, Safaricom, launched M-Pesa, an SMS-based payment system for e-money that allows individuals and businesses to deposit, transfer, and withdraw funds using

their cell phone, to anyone with another phone. Between 2007 and 2013, Safaricom rolled out more than 78,000 mobile payment agents nationwide. It is now the world's most successful mobile payments platform with over 18 million registered users. In July 2013, M-Pesa transactions accounted for a significant portion of Kenyan GDP.

One of the main impacts of M-Pesa has been to provide the unbanked with access to secure and affordable financial services. The use of mobile phone financial services, which was at a rate near 0% in 2005, rose to 28% to in 2009 and then to 68% in 2013, with 43% of those users not having access to a bank account otherwise.[133] As well as facilitating remittance payments within Kenya from the urban working to the rural poor, Safaricom M-Pesa's customers can now receive international money transfers.

M-Pesa is at the forefront of socially inclusive payment systems, but would still pale in comparison with the new Scottish system. M-Pesa demonstrates that at-scale mobile payment systems work, even with a sub-optimal infrastructure and widespread poverty (by western standards), and that these networks can include those excluded by the traditional financial system and even allow those with visual or other impairments to access them.

5.3.6 Australian and US stimulus packages

In 2009, the Australian government decided to give every Australian registered with the tax authorities and earning less than $100,000 a payment of up to $950 as part of a large package of stimulus measures. This amounted to over 8.7 million eligible people. Australians were urged to spend the money on locally owned businesses to keep their fellow citizens in employment. The USA also initiated similar programmes in 2001 and 2008.

Although, in the Australian example, there were some difficulties in distributing the money, with about 44,000 payments, just 0.2% of the population, unable to be made due to insufficient information about the recipient, in the vast majority of cases the money was successfully distributed and spent. Newspaper reports at the time gave anecdotal evidence on shops seeing an increase in activity showing that people preferred to spend their one-off payment rather than save it for a rainy day.[134]

The experience in Australia shows that when you give money directly to people, even if they think that it is a one off, they will spend it on goods and services thereby creating economic activity. It also shows that a large injection of money into a system which is at low/no growth does not cause inflation and that many of its implications are, in fact, positive.

Analysis of the 2008 US stimulus package clearly showed that 'households with low income or low wealth spent more than those with higher income or wealth.' Meanwhile, those households with an annual income less than $15,000 'increased their non-durable consumption on average by more than 6% per week when their rebates arrived, almost twice the response of the typical household'.[135] The analysis concluded that 'the rebates are providing a substantial stimulus to the national economy, helping to ameliorate the ongoing 2008 downturn.'[136]

6. Understanding the challenges

Establishing a successful new currency is challenging and requires consideration of many issues. Our research indicates that our proposal is robust in terms of regulatory compliance and technical feasibility. In this section we set out a number of risk factors together with strategies to overcome them, and conclude that the currency could be implemented without delay within the existing legal, technological, and economic context.

6.1 Regulatory compliance

The legal status of ScotPound would not be that of a fiat currency, legal tender, or even e-money.

6.1.1 E-Money regulations — non-convertible closed-loop money systems

EU- wide e-money regulations,[137] based on the 2009 European Electronic Money Directive,[138] clearly state that in order for the regulation to apply, the e-money must be purchased by the initial user.

The regulation states that 'electronic money means electronically stored monetary value as represented by a claim on the electronic money issuer which is issued on receipt of funds for the purpose of making a payment transactions'.[139] The two important considerations are:

- whether or not there is any 'claim' on the issuer of the e-money; and
- whether the receipt of funds for the government to set up the scheme could satisfy the 'receipt of funds' criterion.

Although there is monetary value stored in every account because it can be used to purchase goods and services, since the currency is non-convertible there is no claim against the issuer for that value. It can be used or not used but there is no right for the holder to have it converted into any equivalent monetary value in sterling or any other currency.

It is also debateable whether the new currency would be issued in exchange for any funds for the 'purpose of making payment transactions' in the case of ScotPound. Although funds would be spent by the government to set up and run the payment system for the country, it is contestable whether the relatively small amount of money going towards the government making payments in proportion to the total monetary value issued would meet the criterion.

This is ultimately academic, since the lack of claim on the issuers means that the receipt of funds issue is not decisive in terms of determined scope. Since e-money, as legally defined, is not being issued, there is no need for BancaAlba to be licensed as an e-money institution.

6.1.2 Payment Services Regulations 2009

It would appear at first glance that there would be a need to comply with the provisions of the Payment Service Regulations because BancaAlba would clearly be providing payment services through ScotPay.

Upon closer inspection it is clear that since the regulations cover payment transactions defined as 'an act, initiated by the payer or payee, of placing, transferring or withdrawing funds' with 'funds'[140] defined as 'banknotes and coins, scriptural money, and electronic money as defined in Article 1(3)(b) of the electronic money directive',[141] the system outlined in this paper would not be considered a payment service.

This is in line with how these regulations cover closed-loop non-convertible currencies, where current practice sees all such similar currency systems around the EU run without being required to register as payment systems.

6.1.3 Data Protection Act

The 1998 Data Protection Act makes provision for the regulation of the processing of information relating to individuals, including obtaining, holding, using, or disclosing such information. Where the currency operator stores any personal information, it is vital that appropriate technical measures be taken to ensure the protection of this data on- and offline. It is also considered best practice to have an internal data protection policy.

Not-for-profit organisations which only collect and share information with people and organisations as far as is necessary to carry out the purpose of the organisation do not need to register under the Data Protection Act. A self-assessment questionnaire is available for those unsure as to their obligations.

6.2 Objections

6.2.1 Could lead to inflation

The fear that the new currency could push inflation too high, even if not to levels of hyper-inflation, is overstated under present circumstances. There are a number of reasons for this.

First, the economy is currently running at a very low rate of inflation, with the March 2015 rate being 0%. Clearly under these circumstances, under normal economic rules, we should be stimulating inflation in order for the Bank of England to meet its 2% target. The Bank of England itself only expects inflation to rise to its target of 2% in two years.[142]

Second, only an economy functioning at full capacity would be at real risk of extra money creating inflation because more money would be chasing the same amount of goods and services. The Bank of England currently predicts that for at least a year there will be sufficient spare capacity to allow for growth in the money supply.[143] Numerous reports and publications also highlight the availability of spare capacity in the Scottish economy specifically.[144] Also the

money is being distributed widely across the economy, rather than into one particular sector. This means that there is less chance of causing inflation in specific sectors due to supply bottlenecks.

Third, as explained in Section 4.1.8, it would be relatively easy for BancaAlba to extract money from circulation by imposing a demurrage fee or not re-circulating the currency after it has been extracted in the form of tax.

6.2.2 Concerns over public 'hand-out'

The project might be construed as a 'hand-out' to the Scottish people and it is clear that any intervention in the economy of this type will have distributive impacts. However, it is equally true that current monetary policy in the UK and in Europe more generally has strong and, in the main, regressive distributional impacts. For example, QE in the UK has led to increases in asset prices and supported wealthier citizens and home-owners at the expense of those who are asset-poor.[145] In contrast, the available economic evidence suggests tax rebates and 'helicopter money' of the type this proposal suggests, have more progressive impacts by encouraging spending amongst the poorer sections of the population who have a higher marginal propensity to consume.[146]

6.2.3 Could reduce overall efficiency of the economy by moving away from one currency

There is a trade-off in complex systems between efficiency and resilience. Orthodox approaches to currencies have focused on increasing efficiency by enabling more trade to take place with fewer currencies, making price comparison and trade easier and therefore competition more effective. The Eurozone is an example of such a huge currency zone. However, hyper-efficient systems may be less resilient to shocks, since there is no alternative established means of exchange to fall back on to enable counter-cyclical exchange if the dominant currency is threatened. Multiple currency regimes are likely to be more resilient. This can be best evidenced by the research done on the WIR B2B currency in Switzerland. It shows that having a second national currency in circulation, far from making the economy function less well, actually contributes to the prosperity and stability that the Swiss economy enjoys.[147] In the case of the WIR, when the Swiss franc dries up because of recession or of banks becoming risk-averse, there is an increase in the usage of the WIR franc and vice versa. Most other countries do not have a second currency to fall back on.

6.2.4 Might foster a 'money-for-nothing' culture

It is a common criticism of initiatives like citizens' incomes or the current proposal of a citizen's dividend that they foster a 'money-for-nothing' culture, which seeks to provide all of the basic needs of a person through an unconditional regular payment. In this case we are talking only about receiving a small amount of money on an irregular basis which is very unlikely to change people's expectations.

6.3 Risks

With any new initiative, there is a risk of unforeseen and negative impacts. We assess the level of risk to be low but not insignificant, and we deal here with some specific foreseeable risks. Ultimately, the proposed scale of the initial issuance or S£1 billion is small in comparison to both annual

Scottish GDP (£240 billion in 2010) and the existing stock of money supply attributable to Scotland (£150 billion).[148] The risks of any severe unforeseen consequences, therefore, is low. This, together with gradual expansion in subsequent years, enables the system to be adjusted in response to analysis of the impacts that unfold in the real economy in real time.

6.3.1 Negative macro-economic impact

The importance of avoiding any negative economic impact is the main reason why transactions during the first year would be closely monitored, businesses interviewed, and users surveyed to make sure that there is a real understanding of how the currency works and its impact. Only if the analysis was positive would more of the currency be issued and the proposition extended.

6.3.2 Potential for political abuse of the power of money creation

This is a serious but often overplayed risk. There are actually very few examples in history where governments have put pressure on central banks to print money prior to an election or to meet a political objective and this led to dangerous inflation or hyperinflation. Nearly all instances of hyperinflation are caused by wars or massive economic dislocations.[149] This notwithstanding, proper governance arrangements would need to be established to ensure that politicians could not be the sole deciders of whether or not to create more money.

6.3.3 Most people may decide to exchange out on the black market

Even though exchange would not be officially permitted, it is conceivable that private exchange networks may appear and offer rates which differ from the 1-1 valuation. Private exchanges would need to comply with the relevant obligations and would probably be treated in a similar way to Bitcoin exchanges.

The risk posed by this would be mitigated because if the currency can be used to pay national or local taxes, there should be a natural balancing mechanism for it. As soon as the value of the new currency drops too low on these private exchanges, then all those with payable tax obligations would have a strong incentive, through a discount, to purchase the new currency for sterling, which should correct the price.[150]

Should there be a huge exodus out of S£ to sterling, then those who do accumulate S£ would have a hugely disproportionate volume of the new currency. This would give them an incentive to ensure that the currency continues to work.

6.3.4 Technology does not work properly

The implementation of the payment would be made in conjunction with a company with experience in this area and would not go live without the appropriate rounds of testing and controls. Any procurement contract for technology providers should demonstrate a fair split of risks and rewards to provide effective incentives for efficient and good value technology implementation.

6.3.5 Fails to drop money to everyone and therefore misses the social inclusion goal

It would be impossible to reach 100% of people and some may actively not want to receive the new currency. The electoral register has just been updated and contains over 97% of eligible people and as highlighted previously, there would also be an initiative to enlist the remaining 3%. After four years, the Australian government was still not able to locate 44,000 people representing about 0.2% of the population.

6.3.6 System might be used for a short while and then collapse

Collapse of the system after launch is the largest risk to the system. The worst-case scenario is that the currency is issued to all individuals and a large number of them go and spend their S£ on goods and services. Then, for whatever reason, there is a collapse in confidence and businesses are left holding the majority of S£ with no ability to spend the money. This would mean that they had sold their goods and services for a currency which no longer had any value. This 'all-or-nothing' scenario is extreme, but even then the ability to use the currency to pay taxes would provide an underpinning to businesses who should always be able to find a use for unspent ScotPounds.

6.3.7 Fraud and theft

Bank-grade security must be implemented in the system in order to protect the network against fraud, theft, and hostile hackers. These risks would be mitigated because the currency would operate in a closed loop — money would not be able to escape the visibility of BancaAlba and could not be withdrawn from the network making it less attractive to steal. BancaAlba and the users of the currency would need to remain vigilant on this point.

6.3.8 Money gathers in sinks

There is a potential that money may gather with certain institutions who end up accepting more S£ than they are able to spend. The BancaAlba team should run periodic reports on where money is gathering in sinks and work with the businesses, or in rare cases individuals, to help them find avenues and opportunities to spend the money.

7. Conclusion

Scotland could grasp the opportunity opened up by digital innovation to create a new currency and payment system for all citizens and businesses. The ScotPound would stimulate local economies and support social justice.

Our research into top-down reform of existing national currency systems and bottom-up local and complementary currencies suggests the introduction of such a scheme, even if relatively small-scale at first, would have a range of social and economic benefits.

The issuing of an initial dividend in ScotPounds to each Scottish citizen would increase purchasing power without adding to the deficit, and could be supported by the world's first publicly owned, not-for-profit national payment system, ScotPay.

ScotPay, being available to all, would promote social justice, with mobile phones the main instrument for making payments via text message or on an app. Scottish businesses would be able to accept payment for goods and services without being charged fees by banks and global credit card firms.

As well as being politically impartial and not-for-profit, the arm's length public enterprise operator BancaAlba could ensure new levels of transparency and accountability, and promote more democratic decision-making.

The specification and design of the ScotPound, ScotPay, and BancaAlba we set out in this paper are not final blueprints. Our aim has been to show the potential of such an innovation with the hope that Scotland's people and political parties seriously debate and investigate the feasibility of such a scheme.

In order to take these proposals forward, the political parties in Scotland should include a commitment in their manifestos for the 2016 Holyrood elections to either:

- implement the proposal contained within this paper;
- carry out a feasibility study on the proposal; or
- establish a steering group comprised of representatives of key stakeholder groups (civil society, business, etc.) along with an advisory group composed of technical experts to analyse the issue of parallel currencies and public payment systems in order to establish which model best suits the needs of Scotland and its people.

Setting up a currency system is not an overnight project and could take between two and four years to establish correctly. But we have shown that the potential rewards are high: the creation of a new, complementary currency could see Scotland position itself at the forefront of socially useful financial innovation.

NEF and monetary innovation

NEF is the UK's leading not-for-profit institute studying money, credit and financial innovation. Our work involves research, education and advocacy for national level monetary reform and complementary currencies. We also have a strong record in supporting communities develop alternative money systems, on the ground.

Monetary reform

Our 2011 book, 'Where Does Money Come From' is the first comprehensive analysis of the functions of the UK monetary system. This has sold over 4000 copies, been quoted by the Bank of England, and is used by a growing number of economics departments for undergraduate teaching.

Our 2013 report, 'Strategic Quantitative Easing', analysed the failure of Quantitative Easing to boost the UK economy and suggested the Bank of England should instead purchase assets to support investment in infrastructure.

Complementary currencies

During the 2000s, NEF helped introduce timebanking to the UK. From 2011–2012 NEF developed the UK's first ever mobile payment platform – 'Pay by Text'– for the Brixton and Bristol Pound community currency schemes. This enabled these paper-based currency models to increase in scale and influence, and for the currency to be accepted as payment for taxes by local authorities in Bristol and Brixton.

From 2013–2015, NEF was a key partner in the largest ever transnational community currency project – 'Community Currencies in Action' (CCIA). This project was part-funded through the INTERREG IVB North West Europe Programme and bought together think tanks, NGOs, public banks and municipalities from northwest European countries and co-ordinated six pilot currencies across England, Wales, Belgium, the Netherlands and France.

NEF developed a rigorous evaluation framework for these currency pilots and

put together a package of support structures, including legal and financial advice, to help promote the schemes as credible policy vehicles.

Innovating the financial system

In 2015, NEF contributed to the United Nations Environment Programme (UNEP) 'Inquiry into the Design of a Sustainable Financial System' examining the drivers of disruptive change in the financial sector and their implications for designing a green and inclusive system.

The five drivers analysed were: disintermediation of capital and payments, new forms of credit creation, long-term environmental and social impacts, technological innovation and innovations in economics and financial policy. The report outlines the scale of the challenges posed, and calls for flexibility and experimentation with a diverse set of policy approaches.

Further reading:

Monetary policy
For an overview of NEFs work:
www.neweconomics.org/issues/entry/monetary-policy

'Strategic Quantitative Easing' NEF report:
http://www.neweconomics.org/publications/entry/strategic-quantitative-easing

Community currencies
An overview of NEF's publications, blogs and involvement in community currencies:
www.neweconomics.org/issues/entry/community-currencies

Information about the CCIA initiative:
www.communitycurrenciesinaction.eu

NEF evaluation of CCIA pilot currency schemes:
http://www.neweconomics.org/publications/entry/money-with-a-purpose

Financial innovation
An overview of NEF's work:
www.neweconomics.org/issues/entry/innovating-finance

'Financial system impact of disruptive innovation' NEF report:
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