Monetary Workarounds

Central-bank digital currency and sovereign money accounts – Intermediate approaches to monetary reform

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Introduction

Since about 2013/14 scholars have been looking for an intermediate or gradual approach to monetary reform. If a 'big bang' transition from bankmoney to central-bank sovereign money could not be achieved anytime soon, something less radical might be attainable. The common feature of various ideas put forth in this regard is introducing non-cash central-bank money into public circulation, but without directly challenging the present bankmoney privilege, that is, the banking sector's ability to create itself the bankmoney on which the banks operate in their dealings with the nonbank public. (For a brief glossary of terms see footnote[1]).

[1] Bankmoney = customer deposits with a bank, most often referred to as sight deposits, overnight deposits or demand deposits. These deposits are liquid or active bankmoney, in contrast to savings and time deposits, which represent temporarily deactivated bankmoney.

Central-bank money = cash and reserves. Cash consists of central bank issued banknotes and treasury issued coins. 'Reserves' is the technical term for central-bank money in a bank's central bank account.

Reserves are for interbank circulation only, also including government accounts with the central bank. Bankmoney is for public circulation only, again including government accounts with commercial banks. Nonbanks are firms, private households, other private institutions as well as public institutions. Even though the government can use central bank accounts, it is a nonbank.

To the extent that central banks today are national monetary authorities, central-bank money is sovereign money, that is, legal tender issued by a state body authorized to do so.

The idea is about giving the nonbank public the option to choose between bankmoney and central-bank money. The two would exist in parallel. By some supporters this is idealised as 'combining the best of two worlds', while others, more appropriately, hope for the approach to be a half-way house to full-blown monetary reform that would put an end to the bankmoney privilege. Over time, the central-bank money in public circulation would possibly drive out the bankmoney, thus reverting the wrong-headed development of the last hundred years by which bankmoney has driven out sovereign money to about 90 per cent now – so that what we have today is a bankmoney regime, pro-actively led by the banks, while the central banks have given up control over the stock of money.

Among the proposals put forth, six shall be discussed here:

- central bank issued digital currency (CBDC) based on blockchain technology, and
- sovereign money accounts as an alternative option to bank giro accounts. There are further variants of the latter approach, for example,
- central bank accounts for everybody, and
- mobile use of money accounts.

Two other approaches often mentioned in this context are

- helicopter money and
- safe deposits by way of a voluntary 100% reserve on individual deposits.

However, helicopter money and 100% reserve-backed deposits do not actually belong here as will be discussed in two related sections at the end of the paper.

Two developments that challenge the sovereign monetary prerogatives

The question arises today of whether it is possible to introduce sovereign money into public circulation, be it as central bank issued digital currency or in the form of separate and thus safe sovereign money accounts for everyone. From a chartalist point of view, either option is highly desirable. Otherwise, there is a great danger of finally losing out to two current developments both of which challenge the sovereign monetary prerogatives. The latter comprise a sovereign state's rights to determine the currency of the realm (the official monetary unit of account), issuing the money denominated in that currency, and benefitting from the seigniorage thereof, that is, the gain from creating new money.

The development of the present bankmoney regime for over a hundred years has already been driving back to a large extent the sovereign prerogatives of money creation and seigniorage to the benefit of the banking and financial industries. The two current developments that might bring matters to a head are the disappearance of traditional solid cash and the emergence of private digital monies, such as Bitcoin. The abandonment of sovereign solid cash together with

the dissemination of private digital currencies is probably the most effective way to dispense with the need for central banks and the monetary sovereignty of states altogether.

Solid cash is bound to dwindle or be abolished sooner or later. A hundred years ago, the ratio between bankmoney and sovereign cash (coins and notes) was about 40:60. Today, statistically, it is 80:20 in the eurozone; effectively, it is rather about 90:10, because a share of the cash is hoarded as a safety buffer or circulates abroad as a parallel currency, while the cash used in the internal underground economy is part of the active domestic money.

To create and maintain 100 euros in bankmoney, banks today need a reserve in central-bank money of only 2.5 euros, of which 1.4 euros are in cash for the ATMs, the rest being non-cash excess reserves (interbank payment reserves) and a 1% minimum reserve requirement. To become absolutely independent of central banks and fully complete the reign of the bankmoney regime, commercial banks would have to dispense with the small remainder of a 1.4% cash reserve and 1.1% non-cash reserve. Furthermore, handling cash is definitely more expensive than the computerised handling of money-on-account.

Monetary policy makers, too, want to eliminate cash, since it is still a hurdle to imposing negative interest rates on the deposits of bank customers.[2] People can circumvent negative interest by holding their money in cash. If too many people try to do so at once, this would be a bank run straightaway – a disaster in-built in fractional reserve banking that policy makers will not want to provoke wilfully. Ironically, it is governments today that are most keen on abolishing sovereign cash, fostering the illusion that this would drain the swamp of underground money foregone to the revenue office.

The second current development challenging the sovereign monetary prerogatives extends even further than abolishing solid cash. The emergence of private digital currencies based on blockchain technology challenges central banks and banks alike. Bitcoin, Litecoin, Peercoin, Nxt and dozens more crypto-currencies need neither of the two.

Central bank issued digital currency (CBDC)

Having taken a wait-and-see stance for a while, central bankers have started to think about confronting the new challengers by creating a digital currency of their own, thus trying to continue the traditional sovereign monopoly on solid cash in a modern way by implementing sovereign digital money.

A. Haldane, chief economist of the Bank of England, and other staff of the Bank were among the first to reflect on central bank issued digital currency (CBDC).[3]

[2] Buiter 2009, Rogoff 2014. Larry Summers at the IMF Economic Forum of 8 Nov 2013, speech in full at www.youtube.com/watch?v=KYpVzBbQIX0.
[3] See Higgins 2015, also Ali/Barrdear/Clews/Southgate 2014a+b.

D. Andolfatto, vice president of the St. Louis Federal Reserve, also proposed 'Fedcoins' for public use.[4] The Basel Bank for International Settlements, the Swedish Riksbank and the central bank of Denmark as well as Chinas central bank followed suit.[5] Singapore and Canada are reported to have already tested a blockchain-based currency for internet business.[6] Furthermore, a number of scholars within the international monetary reform movement had started to look into central bank digital money.[7]

Introducing CBDC could be a substantial and perhaps even decisive step towards restoring the sovereign monetary prerogatives. Digital currency issued by a central bank is not intended to be an alternative to the national currency in place, rather, a cash-like legal-tender alternative to commercial digital currencies as well as bankmoney, with the potential to drive out the former soon and push back the latter again in the longer term.

Strictly speaking, CBDC is of course not about cash or currency in a traditional sense, something solid to touch and carry around. Rather, it is about another kind of money-on-account, whereby an account in the blockchain context is not a conventional bank account, but is called a 'wallet', a digital wallet. Direct transfer of CBDC-units between digital wallets is possible without monetary intermediation by a bank or the central bank. CBDC-units and central-bank money-on-account can be exchanged for one another, analogous to an exchange between solid cash and bankmoney (on account).

Rather than being 'minted' by an opaque stand-alone algorithm with no reference to the real world, the only 'miner' to insert digital money into the blockchain would be the central bank, following its own discretionary policy specifications. Processing the distributed ledger would need to be much less energy-intensive than is the case now and much faster, allowing for many thousand transactions in a second rather than only seven as is presently the case with Bitcoin.[8]

According to a model by Barrdear and Kumhof of the Bank of England, a central bank issuing digital currency would be 'granting universal, electronic, 24x7, national-currency-denominated and interest-bearing access to its balance sheet'. This can be seen as a modern variant of 'Tobin's 1987 proposal for *deposited currency accounts'*. CBDC would be 'implemented via distributed ledgers and competes with bank deposits as a medium of exchange'.

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[4] Andolfatto 2015.
[5] BIS 2015, Broadbent 2016, Barrdear/Kumhof 2016, South China Morning Post 2016.
[6] Peter Levring at *Bloomberg*, 11 Dec 2016, www.bloomberg.com/news/articles/2016-12-11/blockchain-lures-central-banks-as-danes-consider-minting-e-krone.
[7] Yamaguchi/Yamaguchi 2016, Wortmann 2016, Dyson/Hodgson 2016, Huber 2014 #ecash.
[8] Systems with high transaction capacity already exist, for example in various electronic payment systems, or in the systems of Google, Amazon, Twitter and Facebook.

The authors consider a pre-crisis setting 'in which an initial stock of CBDC equal to 30% of GDP is issued against an equal amount of government debt, and is then, subject to countercyclical variations over the business cycle, maintained at that level. We choose 30% because this is an amount loosely similar to the magnitudes of QE conducted by various central banks over the last decade.' According to the authors' DSGE model, this 'could permanently raise GDP by as much as 3%, due to reductions in real interest rates, distortionary taxes, and monetary transaction costs. Countercyclical CBDC price or quantity rules, as a second monetary policy instrument, could substantially improve the central bank's ability to stabilize the business cycle.'[9]

Being interest-bearing for the holder underpins the cash-like nature of CBDC. Early banknotes were interest-bearing too. The digital currency would be issued exclusively in exchange for sovereign bonds purchased by a central bank on the open market. The quantity of CBDC in circulation can thus be dispensed in a measured way and kept under control. A hypothetical landslide migration from bank deposits (bankmoney, in fact a money surrogate) to CBDC (the high-powered 'real thing') can also be prevented in this way. The government would redeem the bonds upon maturity, but the CBDC-units would continue to exist until used in a payment to the central bank (upon which act the central bank liability would be deleted).

One might ask whether Gresham's law might apply to the relation between CBDC and bankmoney, expecting the 'high-powered' and safe CBDC to drive out the not-that-trustworthy bankmoney. The question will be resumed in the next section.

The question of why sovereign fiat money should be 'secured' by collateral at all may be raised on this occasion. Why could it not be accounted for as an addition to a central bank's equity, adding to a nation's monetary endowment, rather than adding to the sovereign issuer's liabilities? As the authors themselves observe, the arrangement of their plan creates increased and direct interdependence of monetary and fiscal policy. This can be seen as a problematic feature of the plan.

Sovereign money accounts as an alternative option to bank giro accounts

In some of the working papers on CBDC, it is not entirely clear whether the issue concerns central-bank money in digital wallets, liquid reserves in central bank accounts or even 'e-cash' related to a central bank account. For example, the Fedcoin idea was portrayed as 'Fedwire for all', and CBDC was said not necessarily to require a distributed ledger. Apparently there are still some 'details' to be clarified.

[9] Barrdear and Kumhof 2016 3–18.

The desirable effects of a CBDC can in fact also be achieved by introducing a new type of current account – sovereign money accounts, or money accounts for short – as an alternative to the present bank giro accounts containing bankmoney.[10] Money accounts would offer nonbanks (firms, households, government bodies without a central bank account and non-monetary financial institutions) the option of reserves-on-account, just like banks and government bodies with a central bank account have, rather than having bankmoney-on-account, as is the case today. Such money accounts would also be an answer to the question of safe deposits, which regularly resurfaces in banking crises.

Money accounts can be managed by banks or other payment service providers. The money would be kept in a separate central bank account in the form of a customer transaction omnibus account of a bank or other payment provider. That transaction account would have its own address in the respective electronic payment system so that money could be transferred directly among money accounts without monetary intermediation by the banks. Therefore, a customer transaction money account ought to be an off-balance item, separate from a bank's own reserves, analogous to customer securities accounts. Money then is the property of the customer and is neither an asset nor a liability on a bank's or other payment provider's balance sheet. The proposal could thus also be referred to as an approach of separate accounts.[11]

Introducing money accounts means the separation of a bank's proprietary means from the means of the bank's customers. Non-segregation of a bank's proprietary means and customer means is a core feature of the present bankmoney regime on the basis of fractional reserves. The split-circuit reserve system (split between the interbank reserve circuit and the public bankmoney circuit) would still exist, but customers would have the choice between bankmoney and central-bank money (= reserves = sovereign money). All nonbanks could in fact maintain both types of account.

Offering money accounts to customers could be optional or made compulsory for the providers. As soon as such an offer exists, many customers will not hesitate to make use of it. Firms and people would decide which kind of account they prefer. Indirect transfers between money accounts and giro accounts would be possible, in the same way as it is possible today to transfer an amount of money from a government central bank account to any bank giro account (by way of the recipient bank crediting the respective customer account), and, in the

[10] I have proposed sovereign money accounts, which are safe because they are separate from the banks' balance sheet, at first in connection with QE4P, arguing that monetary financing, with regard to monetary reform, would make much more sense if accompanied by the introduction of sovereign money accounts (Huber 2014 #offbalance) – which of course also applies to CBDC.

[11] Cf. Dyson/Hodgson 2016. That proposal converges in its basic features with the proposal of safe and separate sovereign money accounts as outlined here. The paper also discusses the idea of central bank issued digital currency based on blockchain technology.

opposite direction, to transfer an amount of money from a bank giro account to a government central bank account (by way of the remitting bank deleting the bankmoney and transferring the respective amount of reserves to the government account). The banks as monetary intermediaries receive and pay out transfers in liquid reserves anyway.

Reserves would enter public circulation in that the government or the banks would make payments to customers in reserves into such money accounts. The government would obtain the money in its central-bank accounts in much the same way as it does now (by receiving bank payments), and the banks would continue to receive the reserves from the central bank.

Operating the two types of accounts in parallel and in mutual exchange would not pose a problem. For a bank, no disadvantage or advantage would arise (in contrast to QE4P or monetary financing without money accounts, as discussed below, in which banks are free riders of the arrangement). The reason is that payments within and between customers omnibus accounts are neutral for the banks, meaning that in this case a bank will not have to use its own money, nor will that bank receive additional reserves.

In a payment from a money account to a giro account, the recipient customer's bank will obtain the reserves, whereas the customer will receive a demand deposit (bankmoney) in the giro account. The reserves obtained in this way, however, are in fact not discretionary for the banks but will largely be committed to payments in the reverse direction, when the giro customers of that bank make payments into money accounts. On balance of all the payments in and out, larger surpluses or deficits are unlikely; should they occur, they can be offset on the interbank money market.

In this way money accounts could be a meaningful start of a gradual transition from the present bankmoney regime to a full-blown sovereign money system, depending on the market decision of money users regarding which type of account they would prefer to use. The more the use of money accounts would propagate, the bigger the shift in payment volumes from giro to money accounts would be. As a result, the extremely low fraction to which banks refinance today would increase.

This would induce higher, though distributed, refinancing costs for the banking sector. The actual refinancing costs of banks can be expected to be about the same as if people made more payments in cash again rather than using cashless transfer of bankmoney via giro accounts. Around 1900, banks in Europe actually had no problem with a cash-to-bankmoney ratio of about 60:40. Until the 1950–60s, the ratio was still about 50:50. In the eurozone today, it is currently about 20:80, statistically. Why should the banking industry have problems with a money-to-giro account ratio coming closer again to 50:50?

Upon the introduction of money accounts, one might at first glance expect a landslide shift from giro accounts to money accounts. However, running giro and money accounts at the same time raises the question of whether Gresham's law would apply again. With regard to traditional coin currencies, that law stated that bad coins (with lower silver content) were driving out good coins, as people tried to dispose of bad coins while preferring to obtain and keep the good ones for themselves. As regards safety, giro accounts are the bad ones in comparison with money accounts containing high-powered central-bank money. Consequently, people might try to be paid into a money account, while making payments from a giro to another giro account. At the same time, keeping a money account might cost a little more. The safety of money is a hot issue only in times of crisis, while in normal times people pay more attention to the costs of banking.

In view of the cost issue and the Gresham situation, the option of money accounts will not automatically result in an immediate mass migration away from giro accounts. This renders obsolete another concern, which is how banks could provide enough acceptable collateral to take up the additional reserves at the central bank in a landslide shift from giro to money accounts.

Central bank accounts for everyone?

An even simpler proposal than separate accounts is to call for a central bank account for everyone, as put forth, for example, by Schemmann and Andresen.[12] Gocht, a former member of the Bundesbank board of governors, suggested in 1975 assigning all regular payment functions to the postal giro office to separate the payment functions from the credit and investment business of banks.[13]

The proposal sounds plausible, but most national giro offices no longer exist. They have been incorporated into the commercial banking industry, been successfully contained by the improved giro and payment systems of the banks, or suffered from a low image as 'poor people's banking' because a considerable proportion of their customers were or are welfare clients. As a result, the crux of the matter today is that a central bank would have to make a huge effort to build up the respective infrastructure almost from scratch, while the banks would have to bear huge sunk costs and lay off employees.

Independently, one may ask whether mass management of accounts is a reasonable task for the national monetary authority. Some companies, concerned about the safety of their bankmoney at the height of the crisis, wanted to open a central bank account but were repelled, in a few cases even by a court decision. A central bank today acts primarily as the bank of the banks, residually as a manager of government transaction accounts, while no longer

[12] Schemmann 2012, Andresen 2014.
[13] Gocht 1975 pp.81.

conducting business with the public. Money accounts for firms and households, however, can be run perfectly well by the banks themselves or by other payment service providers, as described above: by way of separate customer transaction omnibus accounts, as a sub-account or additional account of a bank or another payment service provider with the central bank, managed by the banks or other providers.

Mobile use of money accounts

Sovereign money accounts in whichever form can be equipped with today's transfer tools, for example credit cards, so-called cash cards or, which are the same, e-cash cards, as well as the corresponding pay-as-you-go functions implemented in mobile phones.

Activation of a money transfer by making use of such a card or mobile-phone function results in the transfer of money-on-account, today normally from a bank giro account into another such account. The term 'cash' or 'e-cash' is thus misleading, because there is no money on the magnetic strip or chip of such cards or phones, either e-cash or money-on-account. Instead, the strip or chip stores the information about a respective amount (an account balance). The information has been downloaded from a bank giro account onto the device, upon which act that individual giro account is debited and the amount transferred (credited) to a bank's e-cash omnibus account, from where the bankmoney is then transferred to a recipient when a customer 'pays' – more precisely, triggers a payment from a bank's e-cash omnibus account to an individual bank giro another – with a cash card or phone.

With sovereign money accounts, in which ever form, the procedure would be analogous. The cards themselves would not carry 'sovereign cash' but represent a balance of money-on-account, and using such cards would trigger a money transfer from a money account to some other account.

Helicopter money

Helicopter money is also known as QE4P (Quantitative Easing for People) and as monetary financing.[14] The different terms have the same meaning, that is, direct central-bank funding of government expenditure. Helicopter money is often seen as a first step towards sovereign money reform, which however it is not, because helicopter money is not about introducing non-cash central-bank money into public circulation. Instead, it might contribute to a permanent mix-up of monetary and fiscal responsibilities.

Technically, today's money system is no longer based on cash nor dominated by it, as was the case with the Greenbacks, the US Treasury notes, in the 19th century, when strongboxes were shipped across the country. In today's basically

[14] See www.qe4people.eu; Turner 2016 pp.218.

cashless monetary and banking system, when the government spends reserves from its central-bank account, firms and people get a deposit entry (bankmoney), while the banks obtain the reserves for free. The banks would thus be free riders of the arrangement. The more extensive monetary financing would be, the less the banks would still have to refinance at a cost. If traditional solid coins and notes, which banks still have to refinance to 100%, are then replaced with still more bankmoney and 'e-cash' originated by the banks themselves, any of the existing monetary policy instruments will ultimately be pointless.

Helicopter money could be helpful to a degree as an economic stimulus when there is a pronounced lack of effective demand. But a first step towards monetary reform it is not, for it does not create a cashless public circuit based on central-bank money. Apart from this, the legal admissibility of helicopter money under EU law – Art. 123 (1) TFEU – is questionable, which represents an additional hurdle.

Safe deposits by way of a voluntary 100% reserve

In the aftermath of the banking crises in 2008–12, a number of scholars, as well as bankers managing the accounts of companies or wealthy individuals who were scared about the safety of their deposits, produced the idea of backing up the deposits in bank giro accounts by way of a voluntary 100% reserve on such deposits.[15] This would certainly create safe deposits, but the idea is very unlikely to succeed and to create a public circuit based on those reserves.

There are a number of reasons for this, starting with the fact that implementing a 100% reserve on deposits, in lieu of the existing 1% minimum reserve requirement, is costly for a single bank. A bank pioneering the idea would suffer a significant disadvantage in cost competition. Ultimately it would be the respective customers who would have to bear the additional costs. Most customers would not be prepared to accept the additional costs – which makes the idea appear to be another kind of safe haven for the rich only. Furthermore, in a mixed setting of 100%-reserve banks and fractional-reserve banks side by side, it would be next to impossible to make sure that the reserves accompanying customer payments stay attached to the deposits, even more so under the present condition of non-segregation of customer money from a bank's own means.[16] In comparison with 100%-banking, the approaches of CBDCs as well as safe and separate money accounts are clearly preferable.

[15] Mayer 2013a+b, Gudehus 2015.

[16] On the shortcomings and cost disadvantage of 100% banking, cf. www.sovereignmoney.eu/100-per-cent-reserve-chicago-plan.

Final remarks

CBDCs and money accounts can be promising contributions to modernising money, and they can be an additional and perhaps decisive method of monetary reform by increasingly re-expanding the role of sovereign money while diminishing the share of bankmoney and pre-empting a general take-off of private digital currencies. However, this cannot be taken for granted. Using CBDCs or money accounts in parallel with bankmoney and private digital currencies might equally contribute to stabilising and even strengthening the latter. We cannot be sure about the final outcome. In any event, however, CBDCs as well as money accounts will be a positive element in the entire picture, contributing to the safety of money and, up to a point, a higher degree of effectiveness of monetary policy.

Notwithstanding, it should be pointed out that all these considerations do not mean that introducing central-bank money into public circulation, in whichever form, would provide an easier and better method of monetary reform than a full-blown sovereign money reform. The latter is designed to become effective on a set conversion day, but phasing out bankmoney is also a gradual process also in a conversion-day scenario, stretching over a number of years. In both cases the political, financial and operational disputes and collision of diverging interests are unavoidably about the same. Moreover, CBDCs or separate accounts will not by themselves change the dysfunctions of pro-active bankmoney creation by way of primary bank credit. Ultimately, a full conversion-day scenario remains the more consistent approach to sovereign money reform.

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