

# From debt-based to cash-only - Q&A

Ons Geld has a vision for transitioning from debt-based to [debt-free money](#). This involves the introduction of [personal safe accounts](#) as a forerunning to [digital cash](#). When safe accounts are widely accepted as the basis of our payment system, the debt-based money system can be dismantled. Subsequently a “[modern jubilee](#)” should be organised to deleverage the financial system. In “[deleverage without a crunch](#)” a blueprint for such a jubilee was provided. This blueprint was based on the introduction of digital cash (“[virtual euro](#)”). This blueprint had theoretical value but lacked practical realism. Safe accounts offer a more realistic transition scenario. In this document, questions and answers are collected concerning the transition from a debt-based to a cash-based money system involving safe accounts. It will serve to develop a blueprint for the transition to debt-free money and an orderly dissolution of the present debt-based system.

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## 1. Is digital cash accounted for as an ASSET or a LIABILITY of the central bank?

*Digital cash is administered, not accounted for, neither as a liability nor as an asset of the agency that administers it. Digital cash is intangible property of the account holder. It represents money, not a claim to money.*

### Before and after the reform

Before the reform the monetary authority is a bank: the central bank (CB or NCB). After the reform the monetary authority is no longer a bank. I refer to this post-reform monetary authority as “MA”. The reform concerns the switch over from a debt-based system to a cash-based system.

The MA will supervise a network of national public depositories (NPDs), which issue personal safe accounts. After the reform the Eurosystem consists of the MA and the NPDs combined. I refer to this as the MA as well.

### Not liable for the digital cash supply

The MA will not account for digital cash on its balance sheet. It doesn't own the money supply, nor does it owe anything because of the money supply. Administration of the digital cash system will be more like the cadastral system. The cadastral agency does not own the land it administers. The MA will not have any self-interest in the money it issues. It doesn't need to finance that money either. (Digital) cash is an asset in itself. It needs no financial backing. The MA does not need to hold assets on its balance sheet as underlying value for the currency.

## No asset backing

In the present debt-based system, most money consists of claims to money (e.g. “deposits”) backed by underlying value (e.g. the assets of a bank). In this system, most money is always at risk because (the owner of) underlying value is at risk. Debt-based money cannot function without structural government support for (the owner of) the underlying value that backs the debt-money. In a cash-based system, the government doesn’t need to worry about underlying value nor its owner anymore. It only needs to take care for the money supply itself (direct quantity control). Hence no asset backing of the money supply.

## Cash is an asset itself

In both systems, present and future, cash is an asset (and not a financial asset). Presently, the CB doesn’t account for its cash in hand, though. Cash in its vaults is not reported at all. Cash enters the balance sheet of the CB upon withdrawal of cash by a member bank. At that point, cash seemingly appears out of nothing. It is called into circulation on demand of any member bank. Subsequently, the “reserves” of that bank are debited and money in circulation is credited to the amount of the cash withdrawal. Both events are reported on the liability side of the balance sheet of the CB. Cash which returns to the CB is exchanged for other cash or deposited by crediting the account of the returning bank. You can find more on this in [“What is debt-free money”](#).

## Cash for free

In the cash-based system, if the MA procures digital cash for circulation it hands it for free to the government. The government receives it as seigniorage and accounts for it as an asset (“cash in hand”). This is very different to the present debt-based system, in which cash is purchased by member banks.

## Answer to your question

So, the answer to your question is:

- (i) Digital cash is not accounted as an asset nor as a liability on the balance sheet of the MA.
- (ii) Digital cash is accounted as an asset (cash in hand) of the state, as soon as and as long as the state has it in hand.
- (iii) Digital cash can be lent into circulation, resulting in a financial asset (contractual money claim) on the balance sheet of the lender (the state or a dedicated state agency).
- (iv) Digital cash can be spent into circulation by the state, upon which it disappears from the balance sheet of the state.
- (v) In general, digital cash is accounted as an asset (cash in hand) of the accountholder. It is not a liability of the agency that administers the digital cash system. Digital cash

represents intangible property of the account holder. It is money, not a claim to money.

### **Cash in hand**

I am using the phrase “cash in hand” to make clear what I mean by use of an existing concept. Cash in hand is not a financial asset (contractual claim). It refers to direct ownership of monetary objects. Cash in hand is not mirrored by a liability of any debtor. In the cash-based system, physical and digital cash will coexist. This requires the introduction of an equivalent to “cash in hand”, for instance “cash on account”, to distinguish between the digital and physical appearances of cash.

### **Contractual money**

The present money system is based on credit (“debt”) resulting in balance sheet relationships, in which financial assets, contractual money claims, are mirrored by liabilities recorded on the balance sheet of the debtor to these claims. Debt-based money is contractual money which always involves at least two parties: debtor and creditor. In the debt-based system the act of money creation and attribution of that money are one and the same. Debt-money comes into existence as it is attributed to the receiver. It is attributed in the form of a credit balance (financial asset) on the account of the receiver, mirrored by a liability of the issuer.

### **Paradigm change**

The debt-based system runs fully on credit. It is correct to state that 100% of the money quantity stems from credit extension. The role of cash is insignificant in the debt-based system. Surly, debt-based money can be converted into debt-free money: notes and coins. This does not affect the money quantity, though. It only affects the composition of the money supply. Notes and coins are not essential to the debt-based system. If they were abolished tomorrow it would not be a fundamental change to the existing system. By contrast, basing the system on cash is a huge paradigm change. The cash-based system is truly the opposite of the debt-based system. It offers a solution to all the problems that come with the debt-based system, such as inherent “fragility” of money, over indebtedness of society and subordination of democracy to oligarchy.

### **Cash is neutralised**

In the present system, cash is not a monetary policy instrument. It is issued fully elastic with demand from the eligible banks. If those banks don’t demand cash, no cash is issued. Cash is purchased into circulation. As banks purchase cash, they pay with “reserves”, upon which their accounts at the central bank are debited to the amount of their cash withdrawals. In the process, debt-money is substituted by debt-free money. The money quantity remains the same.

In the present system, cash is neutralised. This system is based on credit (balance sheet relationships) and not on monetary objects (assets). It is very untrue and misleading to state that we currently have a fiat money system, as most bankers and economists do. Fiat money is the opposite of debt-money. Debt-money is contractual money whereas fiat money is not. Fiat money comes into existence as a unilateral act of (or on behalf of) the sovereign.

Fiat money is sovereign money. Stating that we currently have a fiat money system is the same as stating that we currently have a sovereign money system. It puts the blame of the shortcomings of the present money system on the government, whereas the real problem with our money system is that money is made out of debt. The problem with our money system is not that any money is created as an expression of sovereign will. On the contrary, the fiat money in the present system (notes and coins) don't affect the money quantity at all. It is neutralised. The money quantity is entirely generated by contract and out of debt.

### **Cash is what we need**

In our narrative we use the term “cash” instead of fiat money or sovereign money. Cash has a good name (cash is king) and cash is debt-free; it is not a claim on the issuing entity. The fact that the central bank records cash in circulation as a liability is not because cash represents a monetary claim on the central bank (see [“What is debt-free money”](#)). Cash is not a claim to money; it embodies money. Cash is exactly what we need. However, it matters considerably how it is used; as a neutralised extension of the present debt-based system, or as the main instrument for monetary control, as in the cash-based system.

The cash-based system is a fiat money system, meaning that all money (representing the general unit of value) will be created as an expression of legitimate sovereign will. Creation of money and attribution of that money will be separated. The MA creates it. The state attributes it. In the debt-based system, creation and attribution of money are one and the same which puts the money power at the service of the rich instead of society.

In the cash-based system, cash is not neutralised. It is the principal monetary policy instrument, in the form of digital cash. The money supply is extended or contracted by injection or taxation of digital cash.

### **Balance sheet relationships**

In the cash-based system, extension of the money supply will only result in balance sheet relationships when digital cash is lent into circulation. In the debt-based system extension of the money supply always results in balance sheet relationships, no matter whether it is lent or spent into circulation. In the debt-based system, most money is lent into circulation. In the cash-based system, only a tiny fraction of the money supply will be lent into circulation. Most digital cash will enter circulation: (i) upon (overnight) conversion of the money on safe accounts into digital cash or (ii) via government spending.

## Deleveraging without a crunch

In [deleverage without a crunch](#) (DLWC) the transition was presented differently. DLWC did not work with safe accounts for a seamless and managed transition. Instead, DLWC would have digital cash (“[virtual euro](#)”) be sold into circulation during the transition period. The result is the same. No balance sheet relationship between the issuer and the receiver.

In [deleverage without a crunch](#) it was put this way (p.3):

[digital cash] is not a claim on the issuing entity.

It only adds to the balance sheet of the issuing entity:

- as *an asset*, if the issuing entity holds it as cash in hand;
- if the issuing entity has spent it into circulation, in return for *an asset*;
- if the issuing entity has lent it into circulation, resulting in *a financial asset*.

## Separation of powers

The MA creates digital cash and hands it over for free to the government. The governments puts it into circulation. As soon as the government receives the digital cash from the MA it adds to the money supply. It exists (as an asset of the state) even before it is put into circulation. The MA is not allowed to spend nor lend its currency into circulation. This way, self-interest in money creation by the MA is avoided, as well as democratically unchecked market distortion by the MA.

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## 2. Banks' accounts, government account and safe accounts are kept at the National Central Bank (NCB) correct? If so, are they recorded on the Liability side of the balance sheet of the NCB?

*Before the switch to [digital cash](#) the CB keeps on operating as it currently does. Banks hold reserves and other deposits at their NCB and the government has an account at its NCB. [Safe accounts](#) are held indirectly at the NCB, intermediated by the “full reserve” [public depository](#).*

*Upon the switch to digital cash the CB discontinues its operations. Safe accounts are disconnected from the balance sheet of the NCB, and both banks and the government will operate via safe accounts. The money on safe accounts is converted “overnight” into digital cash.*

## Full reserve institution

The transition process starts with the introduction of [personal safe accounts](#), which are held at a [public depository](#) residing under the finance ministry. Initially, safe accounts are “full reserve” accounts; the public depository undertakes nothing with its clients’ money. It keeps all clients’ money at its account at the NCB. The public depository (creditor) and the NCB

(debtor) have a balance sheet relationship, in which the NCB is the debtor. All money on safe accounts is backed by “reserves” held by the public depository at its account with the NCB.

### **Gradual phasing in of safe accounts**

Safe accounts are phased in gradually. During this period, the amount that each person can keep freely (free of progressive taxation) on his safe account is increased periodically. At the same time deposit guarantees are phased out.

For example, the deposits that can be held freely at a safe account could be limited to € 10,000 initially, and be increased annually by € 10,000, while the amount for which deposit guarantees apply is reduced by € 10,000 annually. In 10 years, the deposit guarantee scheme would then be replaced by a system in which money can be kept free of credit risk.

### **Accounting for clients’ money**

Initially, the safe account sticks to current accounting practices concerning deposits. Clients’ money is administered as a liability on the balance sheet of the public depository. The assets of the public depository (which back its clients’ money) consist solely of “reserves” (deposits held at the central bank).

### **Additional credit for the banks**

During the phasing in of safe accounts, clients’ money flows from the banks to the public depository. Banks thereby lose part of their funding. Some banks will be able to refinance themselves with investors’ money. Others won’t and might need to rely on additional credit provided by the central bank. The central bank continues its business of providing credit to the banks on collateral, until the monetary system switches over to digital cash. As a result of this business, the central bank might become a huge [central bad bank](#), collecting a lot of bad debt as collateral on its balance sheet. This is not a problem though, if the system is switched to digital cash, and the assets of the central bank are used for a “[modern jubilee](#)”, in which debt with the banking system is repaid by distribution of “debt repayment vouchers” by the central bank. The concept of debt repayment vouchers is introduced in “[Deleverage without a crunch](#)”

### **Switching to digital cash**

When safe accounts have become widely accepted as the prevalent form of money, its time to switch over to digital cash. This doesn’t alter much in the public eye, as the use of safe accounts remains the same. What changes though, is the character of the money on safe accounts. It no longer represents a contractual claim to money on the public depository. It’ll represent the embodiment of money: cash. Unlike claims to money, which need reliable underlying value to substantiate these claims, cash doesn’t need to be backed by underlying value. Therefore, the reserves of the public depository at the central bank will no longer be

needed as a backing for the money on safe accounts. Credit balances on safe accounts are then no longer accounted for as a liability of the public depository. They then have become “debt free” money: digital cash. To the account holder they become “cash in hand” (or “cash on account” to distinguish physical and digital cash).

### **Windfall profit for the central bank**

This change implies that the public depository does not exert its claim on the central bank anymore, resulting in a windfall profit for the central bank. As a result, the liability of the central bank towards the public depository transforms in equity. The central bank now has the capital to deleverage the financial system, for instance by issuing debt repayment vouchers as described in [“deleverage without a crunch”](#).

### **Safe account scenario vs “Deleverage without a crunch”**

Note however, that the process involving the public depository differs from the process envisioned in “Deleverage without a crunch” (DLWC). In DLWC [virtual euro](#) is issued by the EU and the seigniorage derived from conversion of bank deposits into virtual euro is attributed to the Monetary Transition Fund (MTF). The public is expected to buy virtual euro (digital cash) to replace their bank deposits. This presupposes that the public is ready to accept a new kind of money and that the technical infrastructure for this new money is in place. This presentation had merit to illustrate the importance of digital cash. For practical reasons however, it’s better to have a more seamless transition scheme, which is provided by use of safe accounts.

### **Seamless transition**

Safe accounts fit into the existing framework. Just like deposits, the money on safe accounts consist of credit balances at first. There is no need of mentioning digital cash when safe accounts are introduced. At that point there is no “new money” (virtual euro/digital cash) nor new technology involved. The public depository takes in the same bank money that people are used to. It offers a [safe place for book money](#) on a [personal account](#) which can be accessed via a payment environment of choice. The innovation in the public eye will be the lifelong attachment of a safe account to its holder, provided as a public utility, and the portability of safe accounts to other payment service providers.

### **Deleveraging with seigniorage**

DLWC proposes the monetary transition fund (MTF) as the beneficiary of seigniorage concerning the conversion of the existing bank money stock. In the safe account setting, the central bank is the receiver of the seigniorage concerning the existing bank money stock. This seigniorage is attributed to the central bank when money on safe accounts is decoupled from underlying value (“reserves”). The central bank thereby takes the function of the monetary transition fund (MTF), as described in DLWC. So,



after it has discontinued its business of upholding the debt-money system, it serves to unwind the debt-based system in an orderly way. The financial system is thereby “deleveraged”, by removing unnecessary debt-burdens pertaining from the debt-money system. The deleverage operation happens via the balance sheet of the central bank. This balance sheet will be separated from the monetary authority, and liquidated overtime. At the same time the monetary authority can be merged with the public depository.

### **Monetary control**

As long as the central bank is operational, there is conflict of interest between the public depository, which is focused on safekeeping of money, and the central bank, which is focused on maintaining public trust in banks. This conflict of interests disappears, after the central bank has discontinued its operations (typically, interbank settlement and credit extension to banks) and its balance sheet is separated from the monetary authority to be liquidated over time. It then makes sense to attribute the monetary authority to the public depository. Monetary management is then conducted via the safe accounts (now containing digital cash), by direct control of the money quantity, in the form of digital cash. It is no longer conducted by providing credit to banks.

### **Reserve requirements**

To a large extent, bank-reserve accounts will be exhausted as safe accounts are phased in. During that period, the interbank settlement system is still in place, so minimum reserve requirements will be in place too. These requirements will be lifted when the monetary system finally switches to digital cash (direct quantity control). Until that time, the actual required reserves held by banks will diminish gradually as use of bank money loses out to use of safe accounts.

### **Remaining reserves**

After the switch to digital cash the remaining reserves held by banks can be settled against their debts with the central bank. In case a bank has a net-creditor position towards the central bank, it can transfer its remaining reserves to its safe account or keep them as an investment.

### **Government uses safe accounts too**

By that time, the government will operate solely via safe accounts. At some point during the transition period it will not be allowed to have a bank account, as to not provide any support to private forms of liquidity.



## **Some notes on “Deleverage without a crunch” (DLWC)**

I am aware that I must redo DLWC to adapt it to the safe account scenario. I should include the public depository and exclude the monetary transition fund (MTF) as a separate entity. In the safe account scenario, the role of the MTF is taken over by the central bank, as receiver of the seigniorage derived from conversion of bank deposits into digital cash. In DLWC seigniorage is received by the MTF during the transition period, as bank deposits are increasingly withdrawn as digital cash. In the safe account scenario, the seigniorage is received at once, by the central bank, as the money on safe accounts is converted, overnight, into digital cash. In the safe account scenario, there is no need to separate the central bank and the MTF. There are no conflicting interests because the function of the MTF starts as the central bank terminates its operations. Upon receiving the seigniorage the central bank transforms into a fund with the sole purpose of deleveraging the system in a controlled and balanced way.

The first two steps in the transition process as described in DLWC will differ as follows.

### **Conversion (1) - Absorption of reserves**

Due to safe accounts, reserve accounts of the banks will decrease as money flows out of these banks to the public depository. This is similar to “conversion (1) - Absorption of reserves” in DLWC. A difference however is that clients’ money on safe accounts is not yet digital cash (“cash in hand” to the account holder). Consequently, banks don’t have to buy digital cash to accommodate clients’ demand for it. Clients’ money just transfers from bank accounts to safe accounts. The public depository is the receiver of the bank reserves at the central bank, instead of the MTF.

### **Conversion (2) - EU credit extension**

When bank reserves reach the level of actual minimum reserve requirements, the central bank will provide extra credit to the banks to keep them afloat. This is similar to “conversion (2) - EU credit extension” in DLWC. There are some differences though:

- (i) DLWC does not take into account minimum reserve requirements during the transition period. It presupposes a fast transition to digital cash. In DLWC digital cash is in play from step one. The safe account scenario takes a more realistic approach in which the transition period can take years, during which the debt-money system remains in place, until it can be unwound completely. The switch-over to digital cash happens when the safe account has become the prevalent place to hold money, and the basis for most payment services in the economy.
- (ii) In DLWC banks are kept afloat during the transition process by lending them digital cash. In the safe account scenario banks are kept afloat by the central

bank in the regular course of its business. This shows that DLWC converts directly to digital cash, whereas the safe account scenario take a more gradual approach, in which the present system is not altered until the new system has proven itself.

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- 3. How do you account for digital cash after the transition? I double-checked your other paper Deleverage without crunch -- on page 8 it says that when money creation is for government spending "nothing happens on MA balance sheet". How can it be? If the government account is kept on MA balance sheet (just like today government has an account kept at Central bank), there must be an accounting entry increasing government account balance when new digital cash is created and deposited into the government account... I don't understand this...**

*The government will hold digital "cash in hand" (or "cash on account", to distinguish between digital and physical cash). This becomes possible if the legislature calls digital cash into existence, as an intangible property.*

### **Intangible property**

Digital cash is handed for free by the MA to the government, to be put into circulation. It is an asset to the government, and not a claim on the government agency that administers the digital cash system. This agency is not the owner of the money supply. Nor does it need to hold assets to back the money supply. Neither does the MA need to finance the creation of digital cash by holding assets. Digital cash is created as an expression of legitimate sovereign will. No accounting nor financing is needed for that. This is what makes it a truly sovereign money system.

DLWC starts with this statement: "Virtual euro represents an *intangible liquid asset*. It is not a money claim on the issuing entity." An intangible liquid asset is something which doesn't exist in accounting terms. To make it come into existence the law maker must define it, just like intellectual property rights arise from legislation.

To get a grip on this matter I recommend: Jean Bacon, Johan David Michels, Christopher Millard & Jatinder Singh, [Blockchain Demystified](#): A Technical and Legal Introduction to Distributed and Centralised Ledgers, 25 RICH. J.L. & TECH., no. 1, 2018. They describe the legal implications of intangible property, in the context of block chain based currencies. Block chain is not essential for our narrative. But intangible property is.

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- 4. How do you account for creation of new Physical Cash on MA balance sheet?**

*Currently the CB does not account for the cash in its vaults. The MA won't do that either.*

The situation of physical cash will be quite similar in the digital cash system, as it is under the debt-based system. Physical cash comes into circulation as it is withdrawn by an eligible entity. In the present system only banks (MFIs) with an account at the central bank are eligible for cash withdrawal from the originator, the CB. In the digital cash system, everybody with a digital cash account can withdraw physical cash from the originator, the MA.

I expect that the withdrawal of physical cash will be discouraged in the future system, as it is discouraged currently by the banks, for instance by putting a maximum on daily withdrawals. Physical cash has two functions: (i) provide anonymity for small transactions and (ii) keep the economy going during power failures. Circulation of physical cash beyond that is discouraged, as it is discouraged now.

In the digital cash system, digital cash is administered as the property of the account holder. It is not a financial asset (contractual money claim). Neither is the administration a debtor to the account holder. When an account holder withdraws physical cash from his account, the administration will add this withdrawal to the records it keeps about the physical cash circulation. When physical cash returns this will also be recorded in the administration. I guess it'll be possible to record these events at the level of individual notes, so that the administration will know who withdrew a certain note, and who brought it back.

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**5. Can citizen exchange digital cash for physical cash? Will this increase the amount of money in circulation? Accounting treatment?**

Anybody with a digital cash account can withdraw physical cash from his account. This will not increase the amount of money in circulation. It only changes the composition of the money circulation, just like it does in the present system.

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**6. I understand that under your proposal, the same 2 separate payment systems (payment circuits if you will) will stay in operation as is the case today in bank money system: a/ accounts kept on MA balance sheet, b/accounts kept at banks' balance sheets, correct?**

*Certainly not!*

Presently one can speak of "two systems" because in general only MFIs (banks) are eligible for an account at the central bank. Only a few insiders can bank on the originator of the currency. All others must do business with lesser entities, the business of which is to commercially exploit the money system.

The safe account starts out within the present debt-based system, and initially sticks to the rules that apply in that system, albeit that it introduces a full reserve institution (the public depository). This full reserve institution is a tool for a seamless and controlled transition to a

debt-free money system, which entirely consists of cash, in digital and physical form. At some point in the transition process the money on safe accounts is deemed digital cash. This is done by legislation, and for a purpose: to dissolve the debt-based system in an orderly way. As digital cash comes into existence the central bank discontinues its operations and transforms into a fund used to deleverage the financial system. From then on, the public money system consists entirely of cash, in physical and digital form.

Deposits which are not transferred to safe accounts, and which have thus not been converted to digital cash are demonetized. This means they no longer exchange at par with the currency. This coincides with the switch to digital cash and the closing down of the central bank.

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- 7. MA will be some kind of legal entity, it will have some assets and liabilities, employees, office furniture, etc. AND money (digital or physical cash). As a legal entity, by law, it must keep accounting books and record everything that happens during its operation. Therefore, it must somehow account for digital (and physical) cash as well. Correct?**

The MA will account for the money it owns or owes. It only needs money to cover its operational costs (employees, office, furniture, computers...). The MA will not account for the (digital) cash that circulates in the economy. It will operate the digital cash system. It doesn't own nor owe the money that circulates in it.

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- 8. In current system, when my bank account balance is 1000 EUR that means I have a claim on my bank for 1000 EUR physical cash.**

No. You have a monetary claim of 1000 EUR. Whether you can convert this into a claim to physical cash depends on the contract you have with your bank. Withdrawal of physical cash is best compared to a purchase. The seller (the bank) will decide whether it offers you cash or not. If he does, he sells you cash and debits your account in order to have you pay for it.

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- 9. After I transfer my 1000 EUR electronic account balance ("bank deposit") from my bank to the safe deposit digital cash account with MA, I have no claim on my bank anymore, BUT from my point of view I now have a claim on MA (...)**

We don't call this institution the MA yet. We call it the public depository, which is the full reserve institution that issues personal safe accounts. The public depository starts its business within the debt-based system and in compliance with that system. After transfer of bank deposits to your safe account, you have safe "full reserve" deposits. These deposits represent a monetary claim on the public depository.

At this stage, the central bank is still the monetary authority and we are still in the debt-based system. When safe accounts are widely adopted this will change. This change requires legislation in which digital cash is defined. Digital cash is intangible property. Like intellectual property this can only exist if it has a basis in legislation. As this basis is created, money on safe accounts will be legally declared digital cash. It thereby becomes the property of the accountholder. It transforms from being a claim to money ("monetary value") in being the representation of money. From then on, you don't have a claim to money anymore. You own that money. It becomes your property. You had a financial asset, which is now declared, by law, to be an asset.

After the change, the focal point for monetary control will shift from the central bank to the public depository. This will then become part of the MA. In the Eurozone the monetary authority currently consists of the ECB and the eurozone NCBs combined. After the change the central banks discontinue their operations and are separated from the MA. Their balance sheets are used to deleverage the financial system. The national public depositories replace the central banks and become part of the MA.

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**10. (...) because now I can come and ask MA to give me 1000 EUR in physical cash. Is this correct?**

No. You do not have a claim on the public depository because you can ask for 1000 EUR. You have a claim on the public depository because you transferred funds to the public depository which is, at that stage still a full reserve institution and not a digital cash administration.

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**11. If it is, then how will MA account for this fact?**

I take your question as: how will the public depository / MA account for physical cash withdrawals.

We have two situations here. The situation before and after the switch-over to digital cash.

Before the switch to digital cash

The public depository has an account with the central bank and can theoretically withdraw the entire sum of that account in physical cash. The central bank will print the notes required for any cash withdrawal by the public depository and deliver them to the public depository. Consequently, the central bank will debit the account of the public depository at the central bank, to an equal amount as the cash withdrawal. The central bank does not report the notes in its vaults on its balance sheet. Consequently, it cannot balance its books by debiting its cash

in hand. It has another way to balance its books though, by crediting “cash in circulation” on the liability side of his balance sheet.

As it receives the cash, the public depository credits “cash in hand” and debits its deposits at the central bank. If holders of safe accounts physically withdraw money from their safe accounts, “cash in hand” is debited, as are the safe accounts of these holders.

#### After the switch to digital cash

After the switch, the central bank terminates its operations and the public depository does not exert its claim on the central bank anymore. The public depository becomes part of the MA. Just like the central bank, it will not account for the physical cash it has in its vaults. If physical cash is withdrawn by the holder of a safe account, his safe account is debited. A registration of “physical cash in circulation” is credited to the same amount. If physical cash returns to the public depository it is credited to the safe account for which it was returned. The cash goes back to the vaults and remains unreported again. This is how it works now, and how it will work after the reform.

Note that after the switch, a safe account registers intangible property of the account holder. It does not register a liability of the public depository anymore. The public depository does not need to balance its books by holding assets to back the safe accounts. By the switch to digital cash, it has become a public key registry instead of a financial institution.

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Edgar Wortmann – October 1, 2019.

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