STAFF MEMO

Introduction of central bank digital currency – necessary legislative amendments

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HELGE SYRSTAD

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2 Introduction[1]

Norges Bank has been running a *central bank digital currency*[2] project since 2016. The project is now in its fourth phase, and as part of this phase an overview will be provided of required legislative amendments linked to the introduction of CBDC. For an overview of Norges Bank's CBDC project, please see the following website: https://www.norges-bank.no/en/topics/financial-stability/central-bank-digital-currency/. This memo assesses the legislative amendments that are expected to be required in order to introduce CBDC.

[1] I am very grateful to my colleagues Peder Østbye, Marius Ryel and Alexander Behringer, who have reviewed and provided helpful comments and suggestions on earlier drafts of this memo. Responsibility for the final result is, of course, mine alone, and the views expressed are my own and do not necessarily reflect the official views of Norges Bank. – A Norwegian version of the memo is published as Staff Memo 4/2023. The translation into English is made by Michael Krallmann, Legaltrans AS.

[2] The abbreviation CBDC is often used in English-language literature, and will also be used below.

Two important limitations on the discussed issues need to be highlighted. First, we only consider CBDC as a generally accessible means of payment for the public (so-called "retail CBDC" or "general purpose CBDC"[3]). This form of CBDC is often referred to as "digital cash". Conversely, we do not examine necessary legislative amendments linked to the introduction of CBDC for use in the financial sector only (so-called "wholesale CBDC"). The introduction of wholesale CBDC falls outside the scope of Norges Bank's project, and is therefore not considered further.

Second, we consider only *necessary* legislative amendments, i.e. legislative amendments that need to be made before CBDC can be introduced and become a well-functioning means of payment for general use by the public. The introduction of CBDC would constitute a significant change to the Norwegian payment system, and could have a major impact on, for example, Norwegian banks' deposit funding and Norges Bank's liquidity policy.[4] Such consequences may indicate that various regulatory adjustments should be made with regard to the liquidity of Norwegian financial institutions. Regulatory adjustments of this type are not considered in this memo.

Further, we do not assess legislative amendments that would be required if CBDC was intended to offer special functionality for different payment types. For example, we have not assessed what legislative amendments would be needed to make CBDC payments anonymous[5] or to give CBDC automatic payment functionality, for example with respect to tax payments. Broader assessment of the general regulatory framework for CBDC will have to occur during a later project phase.

CBDC can be based on different technical solutions. It is important to emphasise that the need for legislative amendments may vary depending on which technical solution is chosen. For example, different technical solutions may necessitate differing legal regulation of questions such as when Norges Bank can be regarded as the issuer and when final settlement between payer and payee takes place. Moreover, responsibility for transaction controls under the Anti-Money Laundering Act may have to be regulated differently depending on the adopted technical solution. In phase 4 of the project, Norges Bank has taken a closer look at blockchain-based CBDC solutions, and the assessment of necessary legislative amendments must be regarded in this light. In this memo, blockchain-based solutions are defined as solutions inspired by blockchain technology. This does not mean that the ledger is necessarily organised into blocks, or that it must be operated in a decentralised manner. The fact that a solution is inspired by blockchain technology primarily means that CBDC is issued in the form of digital tokens.

As we will see in section 5.1 below, Norges Bank does not have authority to decide the introduction of CBDC. Any such decision must be taken by the Storting (the Norwegian parliament) in formal legislation. Norges Bank's powers are limited to advising the political authorities on whether or not CBDC should be introduced. It is

[3] Although we do not exclude the possibility that CBDC could also be used as a means of payment in financial transactions, we will not analyse this particular use of CBDC in detail.
[4] See e.g. Norges Bank Memo 1/2021, page 49 onwards.
[5] The meaning of the term "anonymity" is not self-evident. It may refer to complete anonymity in the sense that it is technically impossible to trace the parties to a payment transaction. However, it may also refer to partial anonymity ("pseudo-anonymity"), where a payment is technically traceable but the law lays down strict conditions governing who can view payment settlement details, and how.

important to emphasise that Norges Bank has not made any decision to issue such a recommendation. Consequently, Norges Bank has not decided whether or not to recommend that CBDC should be based on blockchain technology. The decision as to which technological solutions should be recommended will have to be made at a later stage of the project, and the assessments to be done of necessary legislative amendments may depend on the final choice of technological solution.

CBDC must be capable of serving different purposes, and be usable for different payment types. Accordingly, the possibility cannot be ruled out that CBDC could incorporate parallel but different technical solutions, for example if Norges Bank issues CBDC using both a blockchain-based solution and a pure hardware-based solution,[6] depending on the intended end user. It is also possible that CBDC could be issued in a closed account system, depending on the intended use. Such differentiation increases the complexity of the solution. We do not consider the specific legal issues that could result from such differentiation.

Our assessment of necessary legislative amendments thus reflects the work done up to the midpoint of the fourth phase of the CBDC project, and therefore represents a snapshot of the current situation. The assessment reflects the technological options that Norges Bank's working group has evaluated and tested so far. It is clear that no final assessment of necessary legislative amendments can be issued until any decision to introduce CBDC has been made, and different technological solutions may be available at that time. Nevertheless, we must assume that the assessments presented in this memo will be of considerable interest because it seems likely that we have identified the most important issues.

3 Summary

The Storting, Norway's legislature, will need to amend the *Central Bank Act* if CBDC is to be issued. The introduction of CBDC would necessitate amendment of section 3-4 on the issuance of cash means of payment, possibly including legal authority to regulate whether CBDC should be interest-bearing. If CBDC is also to have legal tender status, this will have to be specified in section 3-5 on legal tender. Moreover, if Norges Bank is to be responsible for issuing CBCD, this needs to be included in the list of central bank tasks in section 1-3 of the Central Bank Act.

A well-functioning CBDC solution will also require clarification of the provisions of the *Financial Contracts Act* on settlement methods (section 2-1) and the time and place of payment (section 2-2). This is necessary if CBDC is to preserve key characteristics of cash, as assumed in Norges Bank's project. The Financial Contracts Act could also be amended to specify that CBDC payments are deemed to be final, and that the payments are legally protected against the payer's creditors.

Section 16-4 of the *Financial Institutions Act* contains provisions on the obligation of banks to accept cash and make deposits available to their customers in the form of

[6] When a CBDC solution is purely hardware-based, this means that the money is only stored locally in a user interface, such as a payment card or smartphone, and that there is no communication with a central ledger.

cash. These provisions will need to be expanded to include CBDC, if CBDC and cash are to have equal status.

Various provisions in *special legislation* should be adapted to reflect the introduction of CBDC as a new generally accessible means of payment. Regulatory adjustments will be required if CBDC is to be used for public payments and receipts. Further, responsibility for transaction monitoring of CBDC payments pursuant to the Anti-Money Laundering Act must be clarified. The possibility of making CBDC interest-bearing raises a number of specific issues that should be resolved in both the Central Bank Act and special legislation.

A general point is that somewhat different legislative amendments may be required depending on the technical design adopted for CBDC. Both in Norges Bank's project and internationally, particular attention is being given to a solution where CBDC is issued and distributed using *blockchain-based solutions.* Compared to account-based solutions, blockchain-based solutions raise some specific issues. These include, for example, the legal status of CBDC if CBDC identifiers are converted between different blockchains, and whether Norges Bank will be identified as the issuer after such conversion. In this context, "conversion" simply means that CBDC is moved or transferred between different blockchains. Moreover, it must be decided whether the end user will be permitted to store CBDC in their own software (often referred to as "self-custody"), or whether only approved storage service providers should be allowed to store CBDC for end users. The legal status of and responsibility for entities that verify individual payments – so-called validating nodes – must also be clarified. It appears likely that such issues may be regulated in more detail, for example in regulations issued pursuant to the Central Bank Act or in other financial regulatory legislation.

4 On *Lex monetae* and the relationship with state sovereignty

A state has sovereignty over its own monetary system. The Norwegian legislature is free to decide which monetary unit the state should have, and which means of payment – if any – should have legal tender status. The introduction of CBDC would fall within the scope of this general state sovereignty. International legal literature often refers to the doctrine of *Lex monetae* when discussing the sovereignty of states over their monetary systems. This doctrine is primarily an international private law rule stating that when a contractual obligation is denominated in a particular currency, the monetary legislation of the state which issues that currency governs the monetary value of the contractual obligation. For example, if a contract states that a monetary obligation is valued at NOK 100,000, it is Norwegian legislation on the Norwegian krone (NOK) which governs the obligation. *Lex monetae* becomes particularly relevant in the event of changes to an actual monetary unit, as when EU member states switched from their national currencies to the euro, or when the purchasing power of a currency changes materially – typically when there is hyperinflation. Such issues must therefore be resolved based on the legislation of the country that issued the original currency.

Lex monetae is also relevant when considering general principles of international law on state sovereignty. Under international law, other states are obliged to recognise a state's decisions regarding its monetary unit and types of legal tender. This is also

true when legislation is applied to sovereign debt. If Norway makes decisions that devalue the Norwegian krone, other states must respect these. An important historical example is that other states had to accept both Norway's decision to give up the Norwegian krone's gold peg in the interwar period and the effect this decision had on Norwegian sovereign debt.[7]

The introduction of CBDC is unlikely to raise particular problems related to the doctrine of *Lex monetae* or international law principles on state sovereignty in general. We can assume that CBDC must be introduced by means of formal legislative amendments, and that CBDC will be denominated in Norwegian kroner. Pursuant to section 1-9 of the Central Bank Act, "[t]he Norwegian monetary unit is the krone", and this legal provision will not be amended. CBDC will be a new means of payment, but not a new monetary unit. Contractual obligations denominated in Norwegian kroner will thus be unaffected by the introduction of CBDC.

An agreement may specify that monetary obligations denominated in Norwegian kroner shall be settled with *legal tender*. At present, only banknotes and coins issued by Norges Bank are legal tender; see section 3-5(1) of the Central Bank Act. If CBDC is introduced and given legal tender status, the decision to do so will have to be respected not only by Norwegian citizens, but also by the citizens and authorities of other countries. This would create a situation where there are two types of legal tender. Accordingly, where existing payment obligations have to be settled by means of legal tender, it will be unclear whether banknotes and coins or CBDC should be used for settlement. This question will have to be resolved by reference to national contract law – i.e. pursuant to an individual interpretation of the particular payment obligation – not by reference to the doctrine of *Lex monetae*. While separate statutory regulation of this issue appears unnecessary, consideration could be given to introducing a presumption rule stating that, in the absence of clear evidence in support of a different outcome, "legal tender" shall be understood to mean only banknotes and coins in the case of obligations that arose before the introduction of CBDC. Such a rule could be included, for example, in the Financial Contracts Act. For obligations arising after the introduction date, the parties must specify themselves whether payment is to be made in cash or in CBDC, or that the debtor or creditor may decide this at the time the payment falls due.

[7] This was judicially tested by the Supreme Court in the so-called gold clause case (Supreme Court Reports (Rt.) 1962/369), where the court concluded that suspending gold redemption was not contrary to the prohibition against retroactive legislation in Article 97 of the Norwegian Constitution; see Viggo Hagstrøm; *Obligasjonsrett* [The Law of Obligations], 3rd edition (Oslo 2021), by Herman Bruserud/Ivar Alvik/Harald Irgens-Jensen/Inger Berg Ørstavik, page 192. The bondholders had first brought proceedings against Norway before the International Court of Justice (ICJ) in The Hague, but that court had dismissed the case because it considered the issues to be governed by Norwegian law; see ICJ Rep 9 (1957); see also Charles Proctor, *Mann on the Legal Aspect of Money* (7th edition), London 2012, pages 538–539. Regarding *Lex monetae* in general, see Helge Syrstad, *Statlig pengeteori? - Pengebegrep, pengekrav og statsmyndighet* [State monetary theory? – The term "money", monetary claims and state authority], Norges Bank Occasional Papers No. 54 (Oslo 2019), page 144 onwards.

5 On legal tender and Norges Bank's authority to issue means of payment

5.1 General provisions on means of payment

Section 3-5(1) of the Central Bank Act states:

> "Norges Bank's notes and coins are legal tender in Norway. No one is obliged to accept more than 25 coins of each denomination in any one payment."

No means of payment other than banknotes and coins issued by Norges Bank have formal status as legal tender. Linguistically, the terms "banknotes" and "coins" undoubtedly refer to physical objects, and the 25-coin restriction in the second sentence of the provision underlines that only physical objects are meant. However, it has been argued in international legal literature that legislation authorising central banks to issue notes and coins may also cover CBDC and, further, that CBDC could be given legal tender status.[8] The underlying assumption is that any such CBDC takes the form of identifiable tokens, so that CBDC can be regarded as a digital representation of cash of the state concerned. If correct, this would give the relevant central bank discretion to decide whether CBDC should be issued and whether issued CBDC should be granted legal tender status.

This interpretation of the law is distinctly purpose-oriented. We cannot rule out the possibility that such an interpretation is viable in some legal systems.[9] As far as Norwegian law is concerned, however, it appears untenable to interpret the expression "Norges Bank's notes and coins" in section 3-5(1) of the Central Bank Act as including CBDC. As stated above, an ordinary literal interpretation indicates that only physical objects are covered. Moreover, reference can be made to the fact that the preparatory works to the Central Bank Act clearly appear to assume that the introduction of CBDC will require legislative amendments. We refer particularly to the ministry's statement in the draft act:

> "The ministry agrees with the Central Bank Act Committee and the Norges Bank Executive Board that the possible introduction of electronic central bank money for public use requires further study, including of the consequences for banks and credit intermediation, and that the Central Bank Act should not facilitate this at present."[10]

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[8] See Benjamin Geva/Seraina Neva Grünewald/Corinne Zellweger-Gutknecht, The e-Banknote as a 'Banknote': A Monetary Law Interpreted, *Oxford Journal of Legal Studies 2021*, Vol. 00, No. 0, pages 1-30.

[9] See TFEU Article 128, which regulates the issuance of legal tender within the EU monetary union. If CBDC cannot be introduced as legal tender under current law, a treaty amendment is required. Alternatively, it can be argued that TFEU Article 132(1) provides a legal basis for the ECB to issue CBDC without a treaty amendment. This provision states that the ECB "[i]n order to carry out the tasks entrusted to the ESCB", may
"- make regulations to the extent necessary to implement the tasks defined in Article 3.1, first indent, Articles 19.1, 22 and 25.2 of the Statute of the ESCB and of the ECB in cases which shall be laid down in the acts of the Council referred to in Article 129(4),
- take decisions necessary for carrying out the tasks entrusted to the ESCB under the Treaties and the Statute of the ESCB and of the ECB". We obviously do not need to decide whether this provision provides sufficient legal authority for introducing CBDC in the EU.

[10] See Prop. 97 L. (2018-2019), page 104.

The Storting endorsed this view, and given that the legislature has stated that "the Central Bank Act should not facilitate" CBDC at present, CBDC cannot be deemed to be part of "Norges Bank's banknotes and coins".

Authority to approve the introduction of CBDC thus rests with the Storting, and as Norway's legislature the Storting must make any such decision in the form of a formal law – more specifically amendments to the Central Bank Act.

If CBDC is to have equal status to cash, CBDC will have to be given legal tender status. One way to do this may be to amend section 3-5(1) of the Central Bank Act as follows:

> "Norges Bank's notes and coins *and [CBDC]* are legal tender in Norway."

CBDC should presumably be given a formal name, such as "e-kroner" or "e-NOK", but we do not need to decide what the name should be at this juncture. Therefore, we have simply designated CBDC in brackets.

Section 3-4 of the Central Bank Act on the issuance of cash must also be amended, for example as follows:

> "Section 3-4 **Issuance of banknotes, coins *and [CBDC]***
>
> (1) Norges Bank has the sole right to issue Norwegian banknotes and coins. The Bank shall determine the denomination and design of the banknotes and coins.
> *(2) Norges Bank has the sole right to issue and destroy [CBDC].*
> *(3)* Norges Bank may outsource the production of banknotes and coins.

A new second sentence in the second paragraph of section 3-4 could also include a statutory definition of CBDC, for example:

> "*By [CBDC] is meant a publicly accessible electronic means of payment issued by Norges Bank and denominated in Norwegian kroner."*

Further, the list of central bank tasks in section 1-3 of the Central Bank Act must be amended to give issuance of CBDC equal status to issuance of banknotes and coins. More specifically, the third paragraph of the provision must be amended:

> "Norges Bank shall issue banknotes, coins *and [CBDC]*, facilitate the central settlement system and oversee the payment system."

Another possibility is simply to authorise, but not require, Norges Bank to issue CBDC, and not to give CBDC legal tender status. One way of doing this could be to add a new second sentence to section 1-3(3) of the Central Bank Act:

> *"Norges Bank may also issue [CBDC]."*

In this scenario, the proposed new second paragraph to be included in section 3-4 of the Central Bank Act as outlined above could be retained, but no amendments would be made to section 3-5.

A further option is to grant Norges Bank the right, but no obligation, to issue CBDC, and yet give CBDC legal tender status. Alternatively, Norges Bank could be given discretionary authority both to issue CBDC and to decide whether CBDC should be given legal tender status. It is unnecessary to present draft legal provisions for these alternatives, as they appear less likely.

5.2 Regarding quantitative CBDC limits

A fundamental assumption in Norges Bank's CBDC project has been that any introduction of CBDC should not significantly weaken banks' deposit funding. The final report on phase 3 stated, for example, that CBDC should feature *adequate frictions with bank money*.[11] An obvious way to introduce such frictions is to introduce *quantitative limits* on CBDC storage/holdings. This would mean that no one could hold more than a specified amount in an approved CBDC storage location ("wallet"). Amounts exceeding this threshold could, for example, be automatically transferred to an end-user's bank account in the form of an ordinary deposit.[12] A quantitative limit of this type would require a legal basis, and we can assume that legal provisions in this respect should be incorporated into either section 3-4 or section 3-5 of the Central Bank Act, depending on whether CBDC is granted legal tender status. Moreover, for this type of friction to be effective, limits must be imposed on the number of wallets a person may hold.

The terms "wallet" and "storage services" need to be considered here, as they hold material legal significance in blockchain-based CBDC solutions. "Wallet" refers to what is popularly known as a "digital wallet", i.e. an electronic storage space for digital means of payment. More precisely, a wallet can be described as a user interface that communicates with a CBDC ledger. This user interface resides on a mobile phone, payment card or PC, in the form of an application. The term "storage service" can be understood in different ways. It can be equated with the software in which CBDC is stored, so that the place where CBDC is stored is called a "storage service", regardless of whether a third party actually offers storage as an end-user service. When CBDC is stored in this way, this is often referred to as "self-custody". In other words, the term "storage service" can be understood to include "self-custody".

Alternatively, "storage service" can be understood to cover only cases where a third party offers CBDC storage and the end user utilises the service. Technically, such a storage service can take the form of either common codes involving the commingling of end user funds, or a separate code for each individual end user. It seems clear that CBDC storage services will require a separate-code model. Regardless of the selected code solution, however, "self-custody" will fall outside the concept of a "storage service".

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[11] See Norges Bank Memo 1/2021, page 63.

[12] The Bahamas are among the very few countries that have introduced CBDC. There, limits have been imposed on the amount of CBDC (Sand Dollar) that may be held in individual wallets. In practice, the central bank issues regular announcements detailing the current amount limit; see Article 19 of the Bahamian Dollar Digital Currency Regulations, 2021, (https://www.centralbankbahamas.com/viewPDF/documents/2022-02-11-11-53-25-Bahamian-Dollar-Digital-Currency-Regulations-2021-Final-Gazetted.pdf).

Of course, since CBDC has to be introduced in formal legislation, the legislature is free to define "storage service" as it wishes. However, in the context of storing cryptocurrencies and other so-called digital tokens, it is common practice to reserve the term "storage services" for instances where a third party offers storage as a service, and to exclude "self-custody" from the definition.[13] Therefore, we have chosen to adopt this terminology in this memo.

The content of the term "storage service" is relevant to the question being discussed here, i.e. amount limits. If end users hold CBDC directly in software (self-custody), amount limits must be incorporated into the software functionality. It seems likely that the central bank would have to bear responsibility for this functionality. Accordingly, if self-custody of CBDC is to be possible, it is likely that the central bank would need to approve software that offers CBDC storage. On the other hand, if CBDC storage is to take the form of a third-party storage service, CBDC amount limits should take effect as public-law obligations on providers.

Regardless of how CBDC is stored, a situation where individual CBDC payments exceed the amount limit should not have invalidating effects on the payer-payee relationship under private law. Such invalidating effects could undermine confidence in CBDC as a general means of payment. This should be clarified in the statutory provisions.

An even stronger friction would be to introduce amount limits *per payment.* In this scenario, payment orders for an amount exceeding the threshold would be stopped before execution. Implementation of such a limit would depend on how CBDC is stored. In the case of self-custody, per-payment limits have to be incorporated into the software functionality, whereas in the case of a third-party CBDC storage service model, they must be made mandatory for service providers.

Per-payment amount limits may be problematic because CBDC should be able to function as legal tender, and generally as a publicly accessible means of payment.[14] However, from a legal perspective such amount limits could also be regulated in either section 3-4 or section 3-5 of the Central Bank Act. Once again, it seems clear that amount limits should be formulated exclusively as public-law obligations, thereby avoiding the creation of invalidating effects under private law when a payment is made in breach of an amount limit.

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[13] In the context of storing virtual currencies (cryptocurrencies), such terminology has been adopted in, for example, anti-money laundering regulations; see section 4, fifth paragraph, of the Anti-Money Laundering Act (LOV-2018-06-01-23). See further details in section 12 below.

[14] Per-payment amount limits could be particularly relevant if CBDC is to offer *anonymous* payment functionality. The purpose would then be to prevent tax evasion or other laundering of the proceeds of crime. If CBDC is to offer anonymous payment functionality, it may be logical to consider amount limits already specified in special legislation governing cash payments; see for example section 5 of the Anti-Money Laundering Act (LOV-2018-06-01-23) on the amount limit applicable to cash payments to sellers of objects, section 6-51, first paragraph, of the Tax Act (LOV-1999-03-26-14) on the right to deduct costs, and similar provisions in section 8-8, first paragraph, of the Value Added Tax Act (LOV-2009-06-19-58). This purpose differs from that of creating frictions with bank money. Moreover, breaches of such provisions do not give rise to invalidating effects under private law.

5.3 Specific issues related to blockchain-based CBDC solutions

CBDC will be issued by Norges Bank in the same way as cash, and will likewise appear as a liability in the central bank balance sheet.[15] When CBDC is withdrawn from circulation, it will be destroyed by Norges Bank. As with cash, the bank's CBDC project has assumed that CBDC will be distributed using a two-tier architecture, with Norges Bank issuing CBDC to banks which then distribute it to their customers (end users). This two-tier architecture could be challenged in two situations. First, some types of payments – for example interest payments – may require a direct relationship between the central bank and the end user. This is considered in section 6 below.

Second, the technical design of CBDC may give rise to difficulties related to the central bank's role as issuer. Like many other central banks, Norges Bank is analysing and testing different blockchain-based solutions for CBDC issuance. This is partly because one of the characteristics Norges Bank wants CBDC to have is that it should function as a platform for third-party providers. Another characteristic is that CBDC should be DLT-compatible.[16] This characteristic means that the ledger through which CBDC is issued should be able to communicate with other ledgers. A blockchain-based CBDC solution makes it easier to achieve these characteristics.

Different blockchain-based solutions employ different technologies, and communication between these solutions requires specific adaptations. In some types of blockchain, value is represented by ledger units which the owner controls using cryptographic codes that follow a valid transaction chain (referred to as unspent transaction output, or UTXO).[17] In other blockchain types, money exists as balances linked to ledger addresses represented by cryptographic codes ("accounts"). The latter variant has similarities with an account solution, and is utilised by, for example, the Ethereum platform. If CBDC is to be able to communicate with other ledgers – i.e. be interoperable – technical functionality is required that permits conversion from one ledger to another with a new representation/identifier. The issue then becomes whether CBDC converted from one ledger to another can be regarded as "real" central bank money.

This issue can be resolved in various ways. One is to lock CBDC into the original ledger in which Norges Bank issued the money and then circulate a substitute CBDC (often called "synthetic CBDC") in the other ledgers. With this solution, technical security mechanisms must be established which ensure that the synthetic CBDC can be unambiguously identified with the genuine CBDC locked into the original ledger. The genuine CBDC is unlocked when there is a conversion back to the original ledger. A different solution is for Norges Bank itself, or a third party instructed by Norges Bank, to destroy and re-issue CBDC each time CBDC is transferred to a new ledger.

Legally, this issue can be resolved in a variety of ways. First, any transfer from the ledger through which Norges Bank has issued CBDC to another blockchain-based ledger could be treated as irrelevant to Norges Bank. In this scenario, if "genuine" CBDC is locked into the former ledger, "synthetic" CBDC would be deemed a privately issued means of payment for which the central bank has no responsibility. Synthetic

[15] For further details, see section 11 below.
[16] See Norges Bank Memo 1/2021, pages 28/29 and 64.
[17] See further Peder Østbye, *Eksperimentell testing av digitale sentralbankpenger* [Experimental testing of central bank digital currency], Bankplassen blog (https://www.norges-bank.no/bankplassen/arkiv/2022/eksperimentell-testing-av-digitale-sentralbankpenger).

CBDC would then have to be regarded as a so-called "stablecoin".[18] Second, the synthetic CBDC could be treated, for legal purposes, as genuine CBDC, even though it technically is not. In this scenario, this status would have to be specified in an act or regulations, and Norges Bank would have to be given responsibility for the security and reliability of the blockchain in question. Third, Norges Bank could be given formal responsibility for the destruction and issuance of CBDC each time CBDC is transferred to a new blockchain-based ledger.

We do not need to determine the best solution at this stage, and the issue will require considerable study, not least with regard to regulatory challenges; see below. However, a possible preliminary conclusion is that the Central Bank Act should authorise the King in Council, the Ministry of Finance or Norges Bank to issue regulations on different CBDC ledgers and on the regulation of interoperability between them. The regulatory entity should also be authorised to decide whether CBDC that can technically be considered synthetic should be deemed to be genuine CBDC for legal purposes and – in any event – how synthetic CBDC should be technically validated. Such a regulatory power could be included in a new second paragraph in section 3-4 of the Central Bank Act; see above.

In addition to Norges Bank, various third parties such as banks may have a role/function in the operation of a ledger in which CBDC or a synthetic variant circulates. Such third parties are often referred to as *nodes,* and typical node roles/functions include payment validation. Detailed responsibility for such third parties must be regulated specifically. Responsibility of this kind should also be governed by regulations, and legal authority to issue these regulations could also be included in a new second paragraph in section 3-4 of the Central Bank Act.

With blockchain-based solutions for CBDC issuance, end users convert bank deposits held in an account with their bank into CBDC stored in what is popularly known as a digital wallet. The meaning of the term "wallet" has already been discussed in section 5.2 above. Basically, a wallet is a user interface that communicates with a ledger for digital assets. In the present context, these assets – which are commonly called "tokens" – are CBDC. Seen in isolation, such a user interface permits so-called "self-custody", where an end user personally stores the cryptographic codes needed to control CBDC, i.e. without being dependent on a third party.

A fundamental question is whether such self-custody should be permitted. If so, security requirements will have be imposed on permitted software, and this presumably means that Norges Bank will have to approve such software. The question then becomes whether satisfactory mechanisms can be established for checking software.

An alternative arrangement could be that CBDC may only be stored by third-party storage service providers, so-called "wallet providers". These wallet providers would then have to be subject to administrative supervision. It is conceivable that such providers would have to be licensed by either Norges Bank or the Financial

[18] Even in such a scenario, Norges Bank could be given some responsibility for private stablecoins. If synthetic CBDC of this kind is compromised and attempts are made to convert it into genuine CBDC, the central bank will be responsible for determining which synthetic CBDC can be identified with genuine CBDC. Security requirements and responsibility for validation need to be clarified in the regulatory framework, probably in the form of regulations; see text below.

Supervisory Authority of Norway, and that they would be subject to ongoing supervision by the licensing authority. Alternatively, the providers could simply be given a reporting obligation – a less burdensome measure.

A further possibility is to allow CBDC to be stored both in self-custody and by wallet providers. However, the same questions regarding security requirements, authorisation, licensing and supervision present themselves in this scenario.

This memo does not answer the question of which solution is best in terms of who may store CBDC, and where. Nevertheless, this is a key issue that needs to be carefully considered before CBDC can be issued.[19] The EU is expected to adopt a new regulation on the governance of crypto-asset markets – popularly known as MiCa – relatively soon. This regulatory framework may have implications for the legal status of synthetic CBDC. [20]

6 Regarding interest rates on CBDC – money and credit

As in the case of cash, CBDC will appear as a claim on Norges Bank on the liability side of Norges Bank's balance sheet.[21] Otherwise, CBDC will not entitle holders to any payment from Norges Bank. This too mirrors the position with respect to cash.

[19] As we will see in section 7 below, the definition of "means of payment" in section 1-5(4) of the Financial Contracts Act does not include CBDC. Thus, services involving CBDC storage and payment/transfer will not be regarded as "payment services" within the meaning of section 1-5(1) of the act. CBDC storage and payment/transfer will therefore also not be considered payment services under section 2-3 of the Financial Institutions Act, which in the third paragraph refers to the definition in section 1-5(1) of the Financial Contracts Act. Accordingly, providers of CBDC storage and payment/transfer services will be excluded from the licensing obligation applicable to payment service undertakings under section 2-10 of the Financial Institutions Act. If CBDC is included in the definition of "means of payment" in section 1-5(4) of the Financial Contracts Act, CBDC storage and payment/transfer may be deemed to constitute payment services under section 1-5(1) of the Financial Contracts Act, and thus to be subject to the licensing obligation under section 2-10 of the Financial Institutions Act, or to constitute other licensable activities. In this case, this may also apply to undertakings that operate blockchains to which CBDC might be transferred; see the discussion of ledger interoperability above. From the above, it is clear that the question of the regulatory status of CBDC storage and payment/transfer service providers is complex and will require thorough future analysis.

[20] Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937 (EC 293/ECOFIN 965/CODEC 1428). The regulation will be EEA-relevant. If it enters into force as worded in the proposal, CBDC will fall outside its scope, as the regulation would not apply to "the European Central Bank, national central banks of the Member States when acting in their capacity as monetary authority or other public authorities of the Member States"; see Article 2(2)(c). Moreover, CBDC that has been granted legal tender status by law is unlikely to be regarded as "crypto-assets", and will fall outside the scope of the regulation for that reason alone. However, it is in principle conceivable that synthetic CBDC could be covered if it must be considered to be privately issued stablecoins from a legal perspective. This is because the current wording allows synthetic CBDC to be regarded as an "asset-referenced token" pursuant to Article 3(1)(3), thus bringing providers of synthetic CBDC within the scope of the regulation's detailed regulatory requirements. MiCa has clearly not been designed with such cases in mind, and it is uncertain whether the provisions would be suitable.

[21] For further details, see section 11 below.

From this perspective, CBDC is money, rather than credit. In this context, credit is understood as the provision of a loan.

A key issue in the international CBDC debate is whether CBDC can be used as a monetary policy instrument. This is also an important question in Norges Bank's CBDC project. In practical terms, the question of using CBDC as a monetary policy instrument boils down to whether CBDC should be interest-bearing – i.e. whether positive or negative interest should be levied.[22]

Interest is consideration paid for a loan and, as noted above, CBDC will not involve the granting of credit. Therefore, is it legally permissible to make CBDC interest-bearing? While the position that interest is consideration for credit is a general principle of the law of obligations, it is unlikely that this principle represents a legal obstacle to granting the central bank statutory authority to decide whether CBDC should be interest-bearing. CBDC would be a completely new means of payment, and its issuance will be a new task for Norges Bank that must be regulated in new legislation.[23] Accordingly, neither current statutory provisions nor customary law will prevent the legislature from granting Norges Bank authority to decide whether CBDC should be interest-bearing.[24]

Another issue is that principles pursuant to the law of obligations regarding interest calculation and other matters relating to interest claims have been formulated based on the perspective that interest is primarily consideration for monetary loans. It is therefore conceivable that these principles are poorly suited to application to possible disputes regarding interest on CBDC. Nevertheless, it must be assumed that the risk of such problems arising is relatively small. The debtor in respect of interest payable on CBDC will be Norges Bank, and questions about interest calculation, maturity, etc. can be clarified and specified in laws and regulations. If Norges Bank is to be authorised to decide that CBDC is to be interest-bearing, this must be stated expressly in an act, and in such case Norges Bank should be authorised to adopt detailed terms on the calculation of interest, etc. This could, for example, be regulated in a new second paragraph in section 3-4 of the Central Bank Act, as follows:

> "*Norges Bank has the sole right to issue [CBDC]. Norges Bank may adopt rules on whether [CBDC] should be interest-bearing, as well as further conditions on the calculation and payment of interest."*

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[22] See Norges Bank Memo 1/2021, page 67.

[23] The issue of making CBDC interest-bearing takes on a new perspective if CBDC is introduced without accompanying legislative amendments. International legal literature has discussed whether the ECB is authorised to issue CBDC under TFEU Article 128 on banknotes and coins. If the answer to this question is yes, the issue of interest rates has to be assessed by reference to Article 127 on monetary policy instruments. The outcome of this assessment could easily be that Article 127 does not provide legal authority for making CBDC interest-bearing. See further Corinne Zellweger-Gutknecht/Benjamin Geva/Seraina Neva Grünewald, Digital Euro, Monetary Objects, and Price Stability: A Legal Analysis, *Journal of Financial Regulation*, 2021, 7, 284-318.

[24] In its CBDC pilot project, the Swedish central bank – Riksbanken – has concluded that, from a legal perspective, CBDC is equivalent to cash. Consequently, Riksbanken has concluded that CBDC "cannot earn interest or become statute-barred under the legislation that applies to claims"; see *E-kronarapport - e-kronapiloten etapp 2* [E-krona report – e-krona pilot project, stage 2], page 29. However, Riksbanken does not appear to have concluded that it would be unlawful to make CBDC interest-bearing through new legislation.

However, making CBDC interest-bearing presents other challenges. If CBDC is to be interest-bearing, end users will enter into a direct creditor or debtor relationship with Norges Bank, depending on whether the interest rate is positive or negative. This would violate the two-tier architecture for the issuance and distribution of CBDC which the project otherwise assumes. It is conceivable that interest payment and collection (in case of negative rates) could be undertaken by end users' banks and/or CBDC wallet service providers on Norges Bank's instructions. With this solution, a third party would become the obligated party for the purposes of Norges Bank's interest rate regulation, and Norges Bank would avoid entering into direct relationships with end users. In this scenario, Norges Bank would require authorisation to issue relevant regulations, and the regulatory authority proposed immediately above should be interpretated as sufficient for this purpose.

Making CBDC interest-bearing also raises questions about responsibility for transaction monitoring under the Anti-Money Laundering Act[25] and reporting under tax legislation. It must be assumed that the interest sums to be paid to/by individual CBDC end users will be modest, if CBCDC storage amount limits or other frictions are introduced. Consideration should therefore be given to adapting the special legislation to exempt Norges Bank from the two previously noted obligations regarding interest payments on CBDC. Alternatively, transaction monitoring could be outsourced to third parties such as end users' banks and/or CBDC wallet service providers, if such services are permitted. If CBDC may be stored in and disbursed directly from dedicated software (so-called "self-custody"), transaction monitoring functionality will probably have to be incorporated into the software. In any event, adjustments will have to be made to anti-money laundering rules and regulations, for example by issuing detailed regulations.

If CBDC is made interest-bearing, this may also require Norges Bank to process a significant volume of personal data.[26] However, this alone will not necessitate legislative amendments.

7 Legislation on means of payment, settlement, etc.

CBDC will be a new means of payment that is generally accessible to the public. It is also possible that CBDC will be given legal tender status on a par with banknotes and coins. In section 5 above, we considered what legislative amendments would need to be made to the Central Bank Act in connection with the introduction of CBDC. Amendments would also be required to the provisions of the Financial Contracts Act[27] on means of payment and settlement.

The first set of rules in the Financial Contracts Act that needs to be amended if CBDC is introduced concerns the statutory definition of "means of payment" in section 1-5, fourth paragraph:

> "In this act, "means of payment" means banknotes and coins as well as deposits and credit on account and electronic money as defined in section 2-4, second

[25] For further details, see section 12 below.
[26] See section 13 below on the impact of the GDPR.
[27] LOV-2020-12-18-146.

paragraph, of the Financial Institutions Act or rules issued pursuant to section 2-4, third paragraph, of the Financial Institutions Act."

This statutory definition applies across the act's entire area of application, i.e. financial contracts, see section 1-1, first paragraph, and financial contracts are defined as "agreements relating to financial services, financial assignments, payment settlement and transfers of monetary claims"; see section 1-3, first paragraph. Since the Financial Contracts Act's area of application is broad, it seems logical to apply the definition beyond the area of application when assessing what constitutes "means of payment". For practical purposes, this statutory definition can be regarded as a general provision defining what are deemed to be means of payment under Norwegian law.

The definition obviously excludes CBDC, and the provision in section 1-5, fourth paragraph, of the Financial Contracts Act must therefore be amended so that CBDC are also covered.[28] In drafting terms, this can simply be done by adding [CBDC] after "banknotes and coins".

A complication, however, is that the definition of means of payment was drafted with the aim of incorporating the EU's second payment services directive (EU2015/2366, hereafter abbreviated as "PSD2") into Norwegian law. Pursuant to the Financial Contracts Act, the private-law parts of PSD2 have been made part of Norwegian law; see Prop. 92 LS (2019–2020), page 18. Moreover, the definition of "means of payment" in section 1-5, fourth paragraph, of the Financial Contracts Act apparently corresponds to the provision in PSD2 Article 4(25). In the English version of the directive, this contains a definition of "funds", not "means of payment". This definition reads:

> "'funds' means banknotes and coins, scriptural money or electronic money as defined in point (2) of Article 2 of Directive 2009/110/EC".

The Directive applies to "payment services", see Article 2(1), which are further specified in Annex 1 to the Directive. While it is unnecessary to consider the scope of PSD2 in detail, there are two aspects of PSD2 that require clarification. The actual issuance of CBDC by the central bank will fall outside the scope of PSD2. This follows from Article 1(1)(e), which states that the Directive does not apply to "the ECB and national central banks when... acting in their capacity as monetary authority or other public authorities". The issuance of CBDC is undoubtedly covered by the criterion "acting in... capacity as monetary authority".

As worded, the definition of "funds" in the English version does not include CBDC. This means that payment services that incorporate CBDC will also fall outside the scope of the Directive. The list of payment services in Annex 1 does not, as worded, include CBDC. As noted above, some have argued that TFEU Article 128, which grants the ECB and national central banks in the monetary union the exclusive right to issue "euro banknotes" and "euro coins", must be interpreted as covering CBDC. It

[28] By reference to the wording, it may seem logical to regard CBDC as electronic money as defined in section 2-4, second paragraph, of the Financial Institutions Act. However, the definition of electronic money has been included to implement the e-money directive (2009/110/EC), see Article 2(2), and this directive does not apply to central banks "acting in their capacity as monetary authority or other public authorities", see Article 1(1)(d), something which Norges Bank will obviously be doing when issuing CBDC. See also Norges Bank Memo 2/2019, pages 30/31.

appears likely that, if this interpretation were to be adopted, the definition of "funds" in PSD2 Article 4(25) would also cover CBDC issued by the ECB and national central banks in the monetary union, and in such case no amendments to PSD2 would be necessary. In this situation, there would be an inconsistency between PSD2 and the definition of means of payment in the Financial Contracts Act. However, this could be rectified by including CBDC in the definition in section 1-5, fourth paragraph, of the Financial Contracts Act as proposed above.

If, on the other hand, it is concluded that PSD2 must be interpreted to mean that CBDC fall outside the scope of the Directive, and the definition of means of payment in the Financial Contracts Act is expanded to include CBDC, Norwegian law will operate with a broader understanding of the term "means of payment" than EU law. According to Article 107, PSD2 is a so-called full harmonisation directive,[29] and there is no scope for operating with a different definition of "funds" in Norwegian law than under PSD2. Within the scope of the Directive, therefore, CBDC must be excluded from the covered payment services.[30]

If CBDC can be moved between ledgers, and can in some cases be so-called synthetic CBDC as discussed in section 5.3 above, this may raise separate issues related to PSD2. For example, one possible question is how to the situation should be assessed if synthetic CBDC is not considered to be genuine central bank money, but only to provide technical access to genuine central bank money in another ledger. This will need to be assessed further at a later stage. Uncertainty in this regard would be highly undesirable, not least because Norwegian law states that payment service providers under PSD2 must be licensed pursuant to chapter 2 of the Financial Institutions Act. If there is uncertainty about whether synthetic CBDC is to be regarded as genuine CBDC, there will also be uncertainty about the scope of the licensing obligation. Uncertainty about the licensing obligation and other regulatory issues may also arise by reference to the MiCa Regulation, which the EU is expected to adopt shortly and which will be EEA-relevant.[31] One way to avoid such uncertainty is to expand the King's regulatory powers under section 1-11 of the Financial Contracts Act to include regulation of synthetic CBDC.

Sections 2-1 and 2-2 of the Financial Contracts Act also contain general provisions under the law of obligations concerning payment settlement. These represent an unamended continuation of sections 38 and 39 of the former Financial Contracts Act of 1999. The provisions are not designed to incorporate EEA-relevant rules into Norwegian law, and the legislature is therefore fairly free to make amendments. It would be logical to amend certain provisions if CBDC is introduced. According to section 2-1, first paragraph, payment may be made "by transferring the amount to the recipient's account, unless otherwise agreed or the recipient has requested payment in cash". This provision states that, as a general rule, the payer may make a discharging payment using account money. Alternative arrangements may, of course,

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[29] See further Prop. 110 L (2017-2018), page 9.

[30] Generally speaking, it must be regarded as undesirable for CBDC-related payment services to fall outside the scope of PSD2, and we expect the question of amending PSD2 to be raised in the EU quickly if the ECB starts issuing CBDC and CBDC issuance becomes commonplace internationally.

[31] See further footnote 20 above. The situation will be different if synthetic CBDC falls within the scope of the MiCa Regulation, in which case the regulatory regime for asset-referenced tokens will apply and provide clarity. Whether this is a desirable solution will need to be considered at a later stage.

have been agreed, and the recipient may have requested cash payment beforehand. If CBDC is introduced, recipients should be permitted to demand payment in CBDC on a par with cash, at least if CBDC is given legal tender status. This should be reflected in the statutory text. Consideration should also be given to whether payers should be able to make discharging payments using CBDC; this would require corresponding amendment of section 2-1, first paragraph. However, this question must be examined further by reference to possible amount limits for individual payments and other frictions linked to use of CBDC, and therefore no final decision is made on it here.

Further, section 2-1, second paragraph, of the Financial Contracts Act contains a provision on the right of a creditor to issue instructions. The provision states that "[t]he payee may issue further instructions on the method of payment as long as this does not entail significant additional costs or other disadvantages for the payer". It can be concluded that the provision can be interpreted to mean that the payee may always demand settlement in account money, and in principle also in cash.[32] It appears logical to interpret the provision as meaning that payment with CBDC is also not considered to entail "significant additional costs or other disadvantages for the payer", so that CBDC will also be subject to the creditor's right to issue instructions. This could be clarified in the preparatory works to the legal provisions that introduce CBDC. However, once again adjustments may have to be made to take account of any amount limits or other frictions linked to use of CBDC.

Section 2-1, third paragraph, of the Financial Contracts Act contains a mandatory consumer protection rule stating that a "consumer shall always have the right to use legal tender to effect settlement with the payee". The provision has given rise to doubts as to its interpretation, and is the subject of much debate.[33] The provision itself does not raise any specific issues related to the introduction of CBDC. If CBDC is granted legal tender status, CBDC will be covered by the consumer's unconditional right to effect settlement. If the legislature does not grant CBDC such status, it will not be covered. It is questionable whether, in the latter case, the provision should be amended to cover CBDC, since in that situation the legislature will already have concluded that only cash should have special status as legal tender.

If CBDC is introduced, some amendments should also be made to section 2-2 of the Financial Contracts Act on the time and place of payment. Specifically, more detailed rules should be laid down regarding the point in time when a payee is deemed to have received an amount, and when the payer is deemed to have complied with the payment deadline. However, the answers to these two questions will depend on the design and technical solution adopted for CBDC. The provision has been drafted with payments using account money and offered cash in mind, and a blockchain-based CBDC solution will need to be regulated somewhat differently. We assume that the starting point must be that payment is deemed to have been made when the payee can exercise control over the money in his or her wallet (i.e. the user interface that communicates with the ledger), but payment under so-called "smart contracts" may require a somewhat different regulation. The final wording of a revised provision

[32] See Official Norwegian Report (NOU) 1994:19, page 148.

[33] On 1 September 2022, the Government circulated for consultation a proposal to amend the provision to eliminate interpretative doubt and somewhat reduce the area of application; see https://www.regjeringen.no/contentassets/fd1bf3ae014d4d01a36286f0c1ee6ca2/horingsnotat-styrking-av-forbrukeres-rett-til-a-betale-med-kontanter.pdf. See also Norges Bank's letter to the Ministry of Finance dated 31 January 2019.

depends on the technical solution adopted for CBDC. Moreover, if so-called synthetic CBDC as discussed above may be used, special issues will arise that require further consideration.

Further, it must be clear that a payment becomes final when the amount becomes available, in the sense that the payment cannot be reversed, for example if the payer becomes insolvent after the payee has received the amount (legal protection). This could be specified in, for example, section 2-2 of the Financial Contracts Act.

8 Role of the Payment Systems Act/Settlement Finality Directive

The CBDC project at Norges Bank has assumed that CBDC payments should be final and that this should be a key feature.[34] In transactions between payers and payees, CBDC payments should be final in the same way as payments with banknotes and coins: the payee receives immediate, final and irreversible settlement, and if the payer or a third party consider that the basis for the payment is incorrect, a new, separate monetary claim must be brought against the payee.

Cash payments are made by physical delivery, while CBDC payments will occur digitally. In larger payment systems, payment reversal could be disruptive to the system as a whole. This is particularly relevant where the payer goes bankrupt or otherwise becomes subject to insolvency proceedings after a payment order has been entered into the system. This is the reason for statutory requirements providing that payments settled in larger payment systems cannot be reversed after being entered. In EU/EEA law, corresponding provisions are contained in the Settlement Finality Directive,[35] , which has been implemented in Norwegian law through chapter 4 of the Payment Systems Act.[36] The question is therefore whether these rules will apply to CBDC, and whether it may be necessary to make legislative amendments to ensure that settlement using CBDC is considered final.[37]

The provisions of chapter 4 of the Payment Systems Act are limited to “interbank systems” and “securities settlement systems”; see section 4-1, first paragraph. In a blockchain-based solution, CBDC payments will involve a transfer of money from one wallet to another. The payment will thus not be a “transfer of money between credit institutions”, see section 1-1, second paragraph, and will thus fall outside the scope of the Payment Systems Act. As far as we can see, other CBDC systems will not be deemed part of an interbank system either. A CBDC system would thus fall outside the scope of the Payment Systems Act as it currently reads.

The Settlement Finality Directive gives member states some leeway in deciding what arrangements are to be deemed payment systems falling within the scope of the Directive. “[S]ystem” is defined as follows in the first indent (i.e. the first condition) in Article 2(a):

[34] See Norges Bank Memo 1/2021, pages 19-20.
[35] Directive 98/26/EC on settlement finality in payment and securities settlement systems.
[36] LOV-1999-12-17-95.
[37] A preliminary assessment was undertaken in Norges Bank Memo 1/2018, pages 46/47.

> “a formal arrangement ... between three or more participants, without counting a possible settlement agent, a possible central counterparty, a possible clearing house or a possible indirect participant, with common rules and standardised arrangements for the execution of transfer orders between the participants”

This definition is broader than “interbank system”. “[P]articipant” is defined as “an institution” in Article 2(f), which in turn is defined as “a credit institution”, “an investment firm”, “public authorities and publicly guaranteed undertakings” or “any undertaking whose head office is outside the Community and whose functions correspond to those of the Community credit institutions or investment firms”; see Article 2(b). This supports the conclusion that CBDC payments from one wallet to another cannot be regarded as “transfer orders between the participants”, and that CBDC-based payments fall outside the scope of the Settlement Finality Directive. In section 7 above, we have already considered the possibility of regulating finality and legal protection for CBDC payments in section 2-2 of the Financial Contracts Act.

A further question is whether the Settlement Finality Directive can be applied to providers of CBDC storage services – commonly referred to as “wallet providers”. According to its preamble, the Settlement Finality Directive aims particularly to regulate the situation where a participant (“institution”) become insolvent and cancellation of the transaction pursuant to the insolvency laws of the relevant country would disrupt the settlement system. Would the insolvency of a wallet provider that has executed a CBDC payment in accordance with a customer order disrupt the CBDC payment system?

In order for the insolvency of a storage service provider to have such consequences, storage of CBDC with that provider must be deemed to constitute extension of credit. Otherwise, CBDC would not be included in the wallet provider’s estate assets, and the insolvency would not affect the payment. It seems unlikely that storage of CBDC in a wallet made available by a provider can be regarded as an extension of credit, at least not if CBDC is stored as separate codes for each end user. Moreover, it should probably be a requirement that storage may only occur with separate codes. On this basis, CBDC must be regarded as assets belonging to the person who has stored CBDC with the relevant provider. Thus, in an insolvency situation CBDC will not be deemed to be “property belonging to the debtor”, see section 2-2 of the Satisfaction of Claims Act,[38] and will not form part of a bankruptcy estate. Based on its scope, therefore, the Settlement Finality Directive will not cover the insolvency of a storage service provider, and it is thus unnecessary to assess whether such a provider can be considered a “participant” in a payment system.

Strictly speaking, it is probably unnecessary to specify that storing CBDC with a wallet provider cannot be regarded as an extension of credit, but it may nevertheless be useful to do so. We have not yet decided where in the legislation a provision to this effect should be included. We would note that so-called synthetic CBDC may raise separate issues that will need further consideration.

For the sake of completeness, it can also be noted that if an end user stores CBDC personally in software (self-custody), no questions of insolvency risk or similar issues arise, as there is obviously no extension of credit.

[38] LOV-1984-06-08-59.

9 Regarding bank obligations

As stated above, the project assumes that CBDC will be distributed to the public by means of a two-tier architecture, with Norges Bank initially issuing CBDC before distributing it to banks. Banks will then distribute CBDC to their customers. This mirrors the distribution of cash. This distribution model will require some legislative amendments if CBDC is introduced.

The distribution of cash from Norges Bank to banks is not currently regulated by act or regulation. Cash transportation, cost recoupment, etc. are regulated by agreements between Norges Bank and the banks. As a starting point, we can assume that the same model should be used for CBDC distribution between Norges Bank and the banks. This would eliminate the need for legislative amendments. However, it may be advantageous to regulate certain issues, such as cost recoupment, in regulations. One way of doing this could be to authorise Norges Bank to issue regulations on the rights and obligations of banks related to CBDC distribution; this will be especially relevant if CBDC is given legal tender status. We have previously pointed out that a new second paragraph could be included in section 3-4 of the Central Bank Act in connection with the question of making CBDC interest-bearing:

> "Norges Bank has the sole right to issue [CBDC]. Norges Bank may adopt rules on whether [CBDC] should be interest-bearing, as well as further conditions on the calculation and payment of interest."

Such a provision could also include a more general regulatory power for Norges Bank, in a third sentence:

> *"Norges Bank may also issue regulations on the distribution of [CBDC], including orders for the recovery of costs."*

Further clarification of who should be subject to such regulations, order types and possible sanctions for non-compliance will need to be considered further in connection with possible CBDC introduction.

Bank customers must be given access to CBDC, and it is logical for such access to mirror access to cash, at least if CBDC is given legal tender status. The right of customers to deposit and withdraw cash is regulated in section 16-4 of the Financial Institutions Act[39] and related regulations. The first paragraph states that "[b]anks shall, in accordance with customer expectations and needs, accept cash from customers and make deposits available to customers in the form of cash".

In recent years, bank customers have found it increasingly difficult to deposit cash into their accounts, and to make cash withdrawals. This is because cash handling has become more costly for banks as public demand for cash has declined. This is why the legislature has found it necessary to issue a provision like section 16-4 of the

[39] LOV-2015-04-10-17.

Financial Institutions Act.[40] It is uncertain how costly CBDC distribution to and from customers will be compared to current cash handling. If CBDC distribution proves to be significantly cheaper, it is uncertain whether statutory regulation of customer access to CBDC along the lines of section 16-4 of the Financial Institutions Act will be required. Nevertheless, a significant legislative consideration should be that CBDC is given equal status to cash, and there are no obvious reasons not to include CBDC in the provision. Section 16-4, first paragraph, of the Financial Institutions Act could therefore be amended as follows:

> "Banks shall, in accordance with customer expectations and needs, accept cash *and [CBDC]* from customers and make deposits available to customers in the form of cash *and [CBDC]*."

The regulatory power in the second paragraph could be amended accordingly:

> "The Ministry may issue regulations on the obligation of banks to accept and make available to customers cash and *[CBDC]*."

10 Use of CBDC for public payments and receipts

A fundamental assumption in Norges Bank's CBDC project has been that any introduction of CBDC should not significantly weaken banks' deposit funding. The final report on phase 3 stated, for example, that CBDC should feature *adequate frictions with bank money*.[41] At the same time, it is important that – as a generally accessible means of payment – CBDC is regularly used to a certain extent. Thus far, the objectives of possibly introducing CBDC have been stated to be independent contingency capacity, maintaining competition in the payments market and maintaining the core characteristics of legal tender.[42] Without some degree of regular use, these objectives will not be achieved. The project therefore considers that one feature of CBDC should be that of an *attractive niche solution*. Regarding testing of this feature, the final report on phase 3 stated that testing should include "how CBDC can be integrated with other public requirements and ledgers".[43]

When testing the attractive-niche-solution feature based on how CBDC can be integrated with public requirements and ledgers, one possible solution could be to use CBDC for public payments and receipts, or at least to permit such use. This would require certain legislative and regulatory amendments.

Most public payments must be made with bank account money, and a ban on paying in cash has been introduced in several areas. Regarding *tax and duty claims,* section 9-1, first paragraph, of the Tax Payment Act[44] states that, as a general rule, payments

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[40] See Prop. 125 L (2013-2014), page 105. The second paragraph of the provision authorises the ministry to issue supplementary regulations, which has been done in section 16-7 of the Financial Institutions Regulation (FOR-2016-12-09-1502) on measures in the event of increased demand for cash. A new section 16-8 on banks' provision of cash services has also been included in these regulations.
[41] See Norges Bank Memo 1/2021, page 63.
[42] See Norges Bank Memo 1/2021, page 5.
[43] See Norges Bank Memo 1/2021, page 64.
[44] LOV-2005-06-17-67.

"shall be made by transferring the amount to the account of the collection authorities". However, the authorities may still permit payment in cash.

As regards *national insurance benefits* and other payments from the Labour and Welfare Administration, section 22-18 of the Regulations relating to implementation of the National Insurance Act and section 34 of the Maintenance Collection Act on the payment method for benefits, etc.[45] provide that payment "shall be made by transfer into a bank account", if the recipient has such an account; see section 1. If the recipient does not have a bank account, the general rule is that the person may choose how the payment is to be made, but cash payouts are not allowed; see section 2.

If CBDC is to be an option for public payments, these kinds of legal provision will have to be amended. A decision will be needed on whether CBDC should be a mandatory or optional means of payment, and statutory and regulatory provisions will have to be amended accordingly. As it is unnecessary to draft specific proposals for amended provisions, we have limited our comments to identification of the issue.

A further issue relates to the characteristic of frictions with bank money: as explained in section 5.2 above, such frictions may include amount limits for both CBDC storage and CBDC payments. However, even if the Central Bank Act is amended to include general amount limits of this kind, special legislation must provide for exceptions if CBDC is to be used to pay taxes and duties. The same applies if CBDC is to be used for national insurance payments, social benefits, etc.

11 Accounting issues

Section 4-3(1) of the Central Bank Act states that "Norges Bank is a reporting entity within the meaning of the Accounting Act and a bookkeeping entity within the meaning of the Bookkeeping Act". Pursuant to the same provision, separate regulations have been issued on the annual accounts of Norges Bank. According to section 2-2 of these regulations, Norges Bank's accounts "shall be prepared in accordance with the international accounting standards adopted pursuant to section 3-9, second paragraph, of the Accounting Act, with the additions and exceptions specified in the Accounting Act and this regulatory framework". Section 3-9, second paragraph, of the Accounting Act states that the so-called IFRS Regulation (EC1606/2002) has been incorporated into Norwegian law, meaning that international accounting standards must be applied.

The project assumes that one characteristic of CBDC must be that it is issued by the central bank. In other words, CBDC will be a third type of means of payment issued by the central bank, alongside banks' central bank reserves and banknotes and coins.[46] Both central bank reserves and banknotes and coins are recognised as a liability in the central bank's balance sheet. Norges Bank has assumed that the same will apply to CBDC. In international legal theory, however, some authors have argued

[45] FOR-1999-04-23-534.

[46] See section 5.3 above on the challenges of converting CBDC between different blockchains.

that means of payment issued by a central bank should not be recorded as central bank liabilities, but rather as assets.[47]

The accounting treatment of banknotes and coins is described in Norges Bank's annual accounts for 2021 (note 16):

> "Notes and coins in circulation are recognised at face value when they are put into circulation and derecognised when they are withdrawn from circulation. Notes and coins are put into circulation at the time they are removed from a central bank depot and transferred to private banks. Likewise, they are removed from circulation when they are returned to a central bank depot.
>
> Norges Bank is obliged to redeem withdrawn notes and coins at face value. When it is no longer deemed likely that withdrawn notes and coins will be redeemed, they are recognised as income in profit or loss as Other financial income/expenses. Notes and coins that are redeemed after being recognised as income are recognised as an expense on the same line in profit or loss."

It is the obligation to redeem withdrawn banknotes and coins with new ones that causes cash to be recognised as a liability. Since deposits in accounts at the central bank can be withdrawn by the depositor in the usual way, central bank reserves are also recorded as liabilities.

The authors of the aforementioned study argue that it makes no sense to say that central bank money represents a central bank "liability" under IFRS.[48] Ultimately, the central bank can always convert issued notes and coins into new notes and coins. Thus, it seems misleading to treat cash as claims on the central bank. Moreover, since central bank reserves cannot ultimately be converted into anything other than banknotes and coins either, the same objection can be raised against recording them as central bank liabilities.

The objections to treating banknotes and coins as claims on the central bank may appear convincing, provided that "claim" is understood solely as a private-law concept. However, the authors also emphasised that recording central bank money as a liability in the central bank balance sheet represents long-standing practice. It therefore appears somewhat unclear whether the authors' criticism should be understood as criticism of how international accounting principles should be interpreted and applied (*de lege lata*), as a proposal for revision of standards and practices (*de lege feranda*), or as expressing their view that the current framework allows central bank money to be reclassified from liabilities to assets (*de sententia ferenda*).

There is little doubt that the current practice of recognising banknotes and coins and central bank reserves as liabilities in Norges Bank's balance sheet is consistent with IFRS. Accordingly, it appears clear that CBDC must be accounted for in the same way.

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[47] See Michael Kumhof/Jason Allen/Will Bateman/Rosa Lastra/Simon Gleeson/Saule Omarova, *Central Bank Money: Liability, Asset, or Equity of the Nation?*", Cornell Law School research paper NO. 20-46.
[48] Op. cit., page 16 onwards.

12 Role of the Anti-Money Laundering Act

Norges Bank is subject to the Anti-Money Laundering Act; see section 4(1)(d). This is a special Norwegian provision in the sense that the EU money laundering directives that have been incorporated into Norwegian law through the EEA Agreement do not apply to central banks. This gives the legislature some flexibility to make regulatory adjustments to Norges Bank's obligations regarding CBDC-related customer due diligence.

As stated, the project is assuming a so-called two-tier architecture for CBDC distribution. As the CBDC issuer, Norges Bank will thus not have a direct customer relationship with CBDC end users. Generally speaking, therefore, Norges Bank will not be responsible for conducting customer due diligence related to end users. As at present, such due diligence will be done by banks in accordance with chapter 4 of the Anti-Money Laundering Act.[49] This obligation is clear in the case of establishing customer relationships; see section 10(1)(a).

However, responsibility for *transaction monitoring* raises a separate set of issues. The Anti-Money Laundering Act defines a "transaction" as "any transfer, mediation, conversion or investment of assets"; see section 2(d). In principle, CBDC payments will fall within this definition. Further, section 21(1) provides that a reporting entity shall not implement a transaction if customer due diligence cannot be carried out. In addition, section 10(1)(b) of the Anti-Money Laundering Act states that a reporting entity shall carry out customer due diligence in connection with "transactions for customers with whom the reporting entity does not have an established customer relationship", subject to certain quantitative thresholds.

The question is thus who will be responsible for monitoring individual CBDC payments. In a blockchain-based solution, CBDC payments will occur after end users have converted account money from their deposit accounts to a wallet. In this context, a "wallet" can be understood as an electronic wallet in which the end user stores the identifiers that represent CBDC. The wallet can be private, in the sense that the end user stores CBDC in personal software, or a third party (a "wallet provider") may provide CBDC storage services. In section 5.3 above, it was pointed out that a decision is required on whether self-custody should be permitted, whether CBDC should only be stored by approved wallet providers, or whether the legislation should permit both solutions. The selected solution may have a direct impact on responsibility for transaction monitoring under the Anti-Money Laundering Act.

The Money Laundering Regulations[50] define "storage services" for virtual currency as "the storage of private cryptographic keys on behalf of customers to facilitate transfer,

[49] The project's first interim report discussed whether Norges Bank could end up in a customer relationship with end users, and what consequences this could have under the Anti-Money Laundering Act; see Norges Bank Memo 1/2018, pages 45-46. This is particularly relevant in the case of a so-called account-based solution, where end users have accounts to which Norges Bank distributes CBDC directly. Such a solution is now considered less relevant. Nevertheless, a direct customer relationship between the central bank and end users may also arise in a blockchain-based solution, namely if CBDC is interest-bearing; see section 6 above, and below.

[50] FOR-2018-09-14-1324.

storage of or trade in virtual currency". The definition includes wallet providers, but self-custody is excluded. If CBDC is to be stored by storage service providers, it appears likely that wallet providers should be responsible for transaction monitoring under the Anti-Money Laundering Act. Under current law, however, this is unlikely to be the case. Section 4(1)(g) of the Anti-Money Laundering Act covers "payment service undertakings and others entitled to provide payment services", and section 4(2)(f) covers "persons with a limited licence to provide payment services". However, storage of CBDC using a wallet provider cannot be considered a "payment service", given how this term is currently defined in section 1-5(1) of the Financial Contracts Act. Third parties offering CBDC storage solutions should be regarded as providers of *storage services,* similarly to the position under section 1-3(3) of the Anti-Money Laundering Regulation. However, such CBDC storage service providers will not be automatically included among the reporting entities listed in section 4 of the Anti-Money Laundering Act, and will thus fall outside the scope of the act. Section 4(5) of the Anti-Money Laundering Act authorises the ministry to issue regulations on application of the Anti-Money Laundering Act to, among other things, "exchange service platforms and custodian wallet providers of virtual currency". CBDC would not be a "virtual currency", and would thus obviously fall outside the scope of this regulatory authority. Section 1-3, second paragraph, of the Anti-Money Laundering Regulations defines "virtual currency" as including assets "not issued by a central bank or public authority".

As we can see, current legislation does not allow the placement of responsibility for transaction monitoring. It is possible that *Norges Bank itself* may offer a wallet service to end users. So far, the project has not regarded this as a natural task for the bank, but such a solution cannot be ruled out. It is reasonable to assume that, in such case, Norges Bank would be responsible for transaction monitoring in its capacity as a reporting entity under the Anti-Money Laundering Act. The same would apply if banks were to offer wallets to their customers, see section 4(1)(a) of the Anti-Money Laundering Act, which states that banks are subject to the act. However, if end user wallets are provided by entities other than banks, these will not be covered by the transaction monitoring provisions of the Anti-Money Laundering Act. Further, if CBDC is stored privately by end users (self-custody), CBDC payments will clearly fall outside the scope of the Anti-Money Laundering Act. Ordinary private individuals are not subject to section 4 of the act. Although private individuals can incur criminal liability for aiding and abetting money laundering, this is not an issue in this context.

It would clearly be undesirable if the Anti-Money Laundering Act failed to regulate CBDC payments from both privately stored digital wallets and storage service providers. The application of the act in this area should be clarified before CBDC is issued to the public. An expedient way to do this would be to grant the ministry special legal authority to apply the act to undertakings that provide exchange platforms and CBDC storage services, mirroring the provision in section 4(5) of the Anti-Money Laundering Act on virtual currency.

However, this would not solve the problem of payments from privately stored digital wallets. As stated, a fundamental decision must be made on whether such CBDC storage should be permitted. While we have not made any recommendation in this memo, one element in the assessment will be the consideration of preventing money laundering. If the conclusion is that private storage should be permitted, the next question is whether or not CBDC payments should be subject to transaction monitoring. In this regard, the considerations of anonymity and possible amount limits

for anonymous payments come into play. There are conflicting considerations, and one possible way of resolving the role of the Anti-Money Laundering Act is to expand the ministry's regulatory authority to encompass other matters related to application of the Anti-Money Laundering Act to CBDC. This would allow the ministry to require the inclusion of monitoring functionality in permitted CBDC storage software.

Such expanded regulatory authority would also give the ministry a degree of leeway to regulate some of the special issues which CBDC distribution and payment may raise. These could include responsibility for customer due diligence in connection with the payment of *interest* on CBDC. Whether CBDC should be interest-bearing is a complex issue, both in principle and technically.[51] With regard to application of the Anti-Money Laundering Act, the point is that if interest is paid on CBDC, Norges Bank may enter into a direct debtor-creditor relationship with end users. This raises the question, firstly, of whether Norges Bank would enter into a customer relationship with every CBDC end user, making the bank responsible for general customer due diligence measures under section 10(1)(a) of the Anti-Money Laundering Act. Secondly, the question arises whether Norges Bank will be responsible for transaction monitoring with respect to individual interest payments. In a situation of negative interest rates, transaction monitoring would include payments from end users to Norges Bank.

One way of resolving these issues is to outsource customer due diligence connected to interest payments to third parties. An obvious solution is to assign responsibility to the providers of end-user wallets, and to impose this obligation in regulations pursuant to the Anti-Money Laundering Act. If self-custody is allowed, control functionality must be incorporated into permitted private-wallet software.

Alternatively, interest payments on CBDC could be generally excepted from the Anti-Money Laundering Act. As stated in section 5.2 above, it is likely that amount limits will have to be introduced for holdings in individual wallets. Interest payments are therefore likely to be modest. Further, both transfers between bank accounts and wallets and CBDC payments will be subject to transaction monitoring, provided that the above proposals for regulatory regulation are adopted. In such case, there is unlikely to be an objective need to make CBDC interest payments subject to customer due diligence measures as well, since interest would simply represent a return on CBDC transferred into a wallet from either a bank account or another wallet after payment. The ministry should be able to issue a general exception from the provisions of the Anti-Money Laundering Act for CBDC interest payments pursuant to its regulatory powers, see proposal above.

13 Role of the GDPR

Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (GDPR) has been incorporated into Norwegian law; see section 1 of the Personal

[51] See section 6 above.

Data Act.[52] This means that all use of CBDC that generates personal data will be subject to the provisions of the GDPR.[53]

The technical design of CBDC must comply with the requirement that personal data must be processed in accordance with the GDPR. CBDC must be introduced by law and, as highlighted elsewhere in this memo, new statutory provisions should be introduced on both CBDC issuance by Norges Bank and CBDC distribution by banks to their customers. This will constitute a sufficient basis for the processing of personal data under GDPR Articles 6(1)(c) and 6(1)(e).

At present, it is difficult to specify exactly in what respects the issuance, distribution, use and destruction of CBDC will generate personal data. Norges Bank assumes that CBDC will be distributed through a two-tier architecture in the same way as cash. Accordingly, Norges Bank will store limited personal data when issuing CBDC to banks. Distribution from banks to customers may involve the processing of personal data by the banks, but this is unlikely to involve Norges Bank. As regards individual CBDC payments and CBDC transfers to and from bank accounts and wallets, these will generate significant amounts of personal data. However, the identity of the person(s) responsible for processing such data will depend in part on who provides the wallets. It will also partly depend on the technical solution chosen for CBDC, as different technical solutions will generate differing amounts of personal data stored by the nodes in the system.

Our current assessment indicates that the introduction of CBDC will not necessitate legislative amendments in the field of data protection.

[52] LOV-2018-06-15-38.
[53] See Norges Bank Memo 1/2018, pages 44-45.