

Question: 05. How could a CBDC affect financial stability? Would the net effect be positive or negative for stability?

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Question

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1. **How could a CBDC affect financial stability?**
2. **Would the net effect be positive or negative for stability?**

Answer

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To answer these questions, it is important to first have a good working definition of **Financial Stability**.

Financial Stability reflects the ability of the financial system to consistently supply the credit intermediation and payment services that are needed in the real economy if it is to continue on its growth path.¹⁾

When defining concepts like *stability* and the things that *affect* and *maintain*, providing to define the opposite definition (i.e., **Financial Instability**).

Financial Instability occurs when problems (or concerns about potential problems) within institutions, markets, payments systems, or the financial system in general significantly impair the supply of credit intermediation services - so as to substantially impact the expected path [growth path] of real economic activity.²⁾

How could a CBDC affect financial stability?

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Eric S. Rosengren discusses the process (i.e., Model) of propagating Financial Instability, see Figure 1. There are two major factors presented in the diagram: **Increase In Uncertainty** and **Deterioration in banks' Balance Sheets** which are pertinent to a U.S. CBDC and can trigger the propagation of **Financial Instability** (i.e., the opposite of **Financial Stability**). These concerns are also echoed in the **Executive Summary** of the [Money, and Payments: The U.S. Dollar in the Age of Digital Transformation](#) or **White Paper**.



Figure 1: Propagation of Financial Instability in Industrialized Countries³⁾

Increase in Uncertainty

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*For a nation's economy to function effectively, its **citizens must have confidence in its money and payment services**. The Federal Reserve, as the nation's central bank, works to maintain the public's confidence by fostering monetary stability, financial stability, and a safe and efficient payment system.*

The part of the statement that “*citizens must have confidence in its money and payment services*” emphasizes one of the triggers described by Rosengren's Model, “*Increase In Uncertainty*”.

Some of the “Stability” surrounding a U.S. CBDC have been defined by the **White Paper** and already discussed in [q10](#).

Table 1: “Desirements” identified in the **White Paper** that have potential international impacts.

Statement No.	Statement	Comment
R0003	Risk to the safety and stability of the financial system	If there is a major hack to the CBDC, this could trigger a “lack of confidence” not just in the CBDC, but in the U.S. Dollar and perhaps The Federal Reserve.
R0005	New payment services could pose Risks to: 1. financial stability 2. payment system integrity 3. other Risks	If there is a major hack to the CBDC, this could trigger a “lack of confidence” not just in the CBDC, but in the U.S. Dollar and perhaps The Federal Reserve.

Many additional risks to the stability of the financial system have already been discussed in Answer to [q11](#):

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Deterioration in banks' Balance Sheets

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Table 2 lists some highlights from some other Answers the OMG members have already answered.

Table 2:

q04	To facilitate non-cash payments, intermediary banks hold Reserve Balances at the Federal Reserve. Payments are generally settled by transferring Reserve Balances between banks. Banks can also hold these balances to meet unexpected liquidity needs and to satisfy a number of regulatory requirements aimed at ensuring that banks are sound and that their customers' deposits are safe. Banks depend upon this borrowed money to a considerable extent in order to meet strict compliance requirements and pass stress tests used as the measurement of their financial stability.⁴⁾ Banks may borrow and lend reserves to each other depending on their needs and market conditions; as such, banks can use Reserve Balances both as a means of funding and as an investment. The federal funds rate is the interest rate that banks pay to borrow Reserve Balances overnight. When a CBDC is created and goes public, CBDC payments will have to be added as a new way of making noncash payments. This means in order to obtain a better understanding of the banks' reserve currency requirements, all the CBDC payments in the bank need to be accounted for. In other words, these CBDC payments need to be added to the total tally of U.S. consumers' and businesses' noncash payments. This requires the CBDC to adopt a Digital Account Model leading to concerns about End User Privacy. To facilitate such payments, banks hold Reserve Balances at the Fed; payments can be settled by transferring Reserve Balances between banks. Banks also hold these balances to meet unexpected liquidity needs and to satisfy a number of regulatory requirements aimed at ensuring that banks are sound and that their customers' deposits are safe. Banks may borrow and lend reserves to each other depending on their needs and market conditions; as such, banks can use Reserve Balances both as a means of funding and as an investment. The federal funds rate is the interest rate that banks pay to borrow Reserve Balances overnight.
q14	The design features of a United States CBDC will necessitate trade-offs along four axes: 1. account-based versus token-based 2. institutional versus retail 3. direct versus indirect obligation 4. centralized versus decentralized. As the design evolves, OMG recommends further consultations that include Use Case analysis and solicitation of scenarios that test the limits of the contemplated CBDC design.

Would the net effect be positive or negative for stability?

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As the question states, there are positives and negatives on both sides. The OMG's answers to a couple

of the **White Paper** have already addressed some of these issues. Obviously, the overall goal is to have overwhelmingly more positives than negatives. AT this point negatives and positives are purely speculative without further understanding of exactly what the U.S. CBDC will be.

For example, in the “desirements” identified by [Object Management Group](#) from the [White Paper](#) and summarized in the [White Paper Analysis](#) are used as the basis for the ambivalent answer. From the “desirements”, it appears that there are two main sets of requirements when it comes to determining potential interest payments. Each of the sets is dependent on how the CBDC is to be modeled:

- **Cash Model** - these are requirements with CBDC characteristics most closely aligned with a simple cash model
- **Account Model** - these are requirements with CBDC characteristics most closely aligned with the account model (i.e, savings, checking, investment, direct pay, credit, debit cards, etc.)

It is only through System Engineering including a proper requirements analysis that CBDC can be defined. It may also be determined that the CBDC could actually represent two different things that need to be developed independently but in parallel. Without this analysis, all positives or negatives are merely speculative and reflect the understanding, biases, and prejudices of the individuals.

In summary, determining the “positives” and “negatives” is dependent on the management of the U.S. CBDC Systems Engineering process, how well it is monitored and how well it can adapt over time. **Note:** One stakeholder's positive is another stakeholder's negative. For example, abiding by the [Privacy Laws and Regulations](#) is highly desirable from the End User perspective, but not from Law Enforcement.

1) , 2)

Eric S. Rosengren, Federal Reserve Bank of Boston, [Defining Financial Stability, and Some Policy Implications of Applying the Definition](#), 3 June 2011, Accessed: 27 April 2022, <https://www.bostonfed.org/news-and-events/speeches/defining-financial-stability-and-some-policy-implications-of-applying-the-definition.aspx>

3)
Frederic S. Mishkin, [The Causes and Propagation of Financial Instability: Lessons for Policymakers](#), Kansas City Federal Reserve, pages 55-96, the graphic on page 74. Accessed: 27 April 2022, <https://www.kansascityfed.org/documents/3591/pdf-s97Mishk.pdf>

4)
During the 2008 financial crisis, many big banks failed or faced insolvency issues due to liquidity problems. The FDIC ratio is in line with the international Basel standard, created in 2015, and reduces banks' vulnerability in the event of another financial crisis.

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