

Africa's CBDC Gamble: Disrupting Finance?

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A central bank digital currency (CBDC) is a digital form of money issued by a central bank that can be used by households and businesses to make payments and store value

Central banks worldwide are exploring the potential of retail CBDCs, with Africa emerging as a particularly active region

CBDCs have the potential to promote financial inclusion, foster innovation in the payments landscape, and support safe, low-cost, and inclusive payments for all

However, the issuance of CBDCs could pose several risks to the banking sector and potentially destabilize the financial system

The research emphasizes bank disintermediation as a critical challenge to consider when launching CBDCs

Infante et al. (2022) outline four critical factors shaping the competition between CBDCs and traditional bank deposits, including the competitiveness of the banking sector, the remuneration offered on CBDCs, wholesale funding, and CBDC account limits

Faced with a substantial decline in customer deposits, banks would be compelled to implement various strategies to safeguard their profitability and adhere to prevailing regulations

These measures could include exploring alternative funding sources, reducing balance sheet size, increasing risk appetite, or raising lending rates

Building on a bank balance-sheet based model (BIS 2021), this research investigates the impact of issuing a CBDC on the intermediation capacity and resilience of the African banking system

Three key uncertainties:

- (i) The future competitive landscape of the financial system
- (ii) The specific design features of CBDC, such as interest rate structure and account holding limits
- (iii) The size and scale of user adoption of CBDC

II. CBDCs motivations and concerns

Central banks around the world are exploring retail CBDCs for a variety of reasons, reflecting the distinct needs of both developed and developing economies (BIS 2021)

For emerging and low-income economies like those in Africa, the primary objective is to enhance financial inclusion

CBDCs can significantly lower the expenses and environmental footprint associated with managing physical cash, a major concern for African central banks

CBDCs can foster competition and efficiency in digital payments, potentially lowering transaction costs

Increased use of financial technologies due to CBDC adoption could lead to more formal economic activity and faster economic growth in Africa

CBDCs can improve traceability of transactions, potentially leading to better tax collection and combat Money Laundering and Terrorist Financing (MLTF)

CBDCs can spur financial innovation and economic growth, unlocking the digital economy's potential

II. CBDCs motivations and concerns

A critical concern surrounding CBDCs is the potential disintermediation: a shift of deposits from banks to CBDC wallets. This could weaken banks' lending capacity, potentially contracting the overall credit supply in the economy

Africa's low bankarization rates and heavy reliance on informal financial services make it especially vulnerable to this risk

Factors such as the competitiveness of the banking sector, interest rates on CBDC holdings, access to wholesale funding for banks, and limitations on CBDC account holdings influence the extent of disintermediation

Africa presents a fertile ground for CBDC adoption due to challenges like high transaction costs in traditional banking, widespread distrust in banks, and limited physical infrastructure

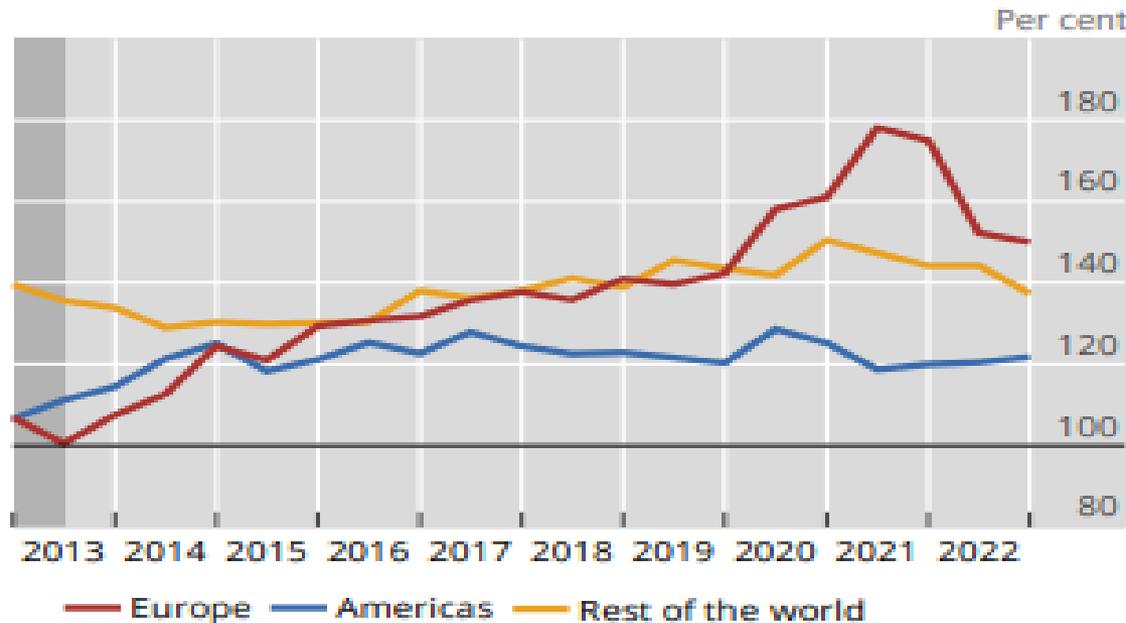
However, the lack of experience with CBDCs in major economies and the diverse economic landscapes across Africa introduce uncertainties regarding their overall impact on financial stability

III. Methodology and Data

The Liquidity Coverage Ratio (LCR) safeguards financial institutions against short-term funding shortfalls by requiring them to hold enough high-quality liquid assets to meet their needs for up to 30 days

$$\text{LCR} = \frac{\text{Outstanding High-Quality Liquid Assets (HQLA)}}{\text{Total Net Cash Outflows (TNCO) over a 30-day stress period}} \quad (1)$$

LCR Levels Around the World (BIS 2022)



III. Methodology and Data

The introduction of a CBDC is expected to trigger a potential deposit outflow from banks, necessitating them to bolster their High-Quality Liquid Assets (HQLA) to meet regulatory liquidity ratios

The magnitude of this required HQLA increase depends on factors such as the severity of deposit outflow, any concurrent financial stresses, and the banks' initial liquidity positions

$$L = D \cdot (1 - s \cdot LCR_{pre}). \quad (1)$$

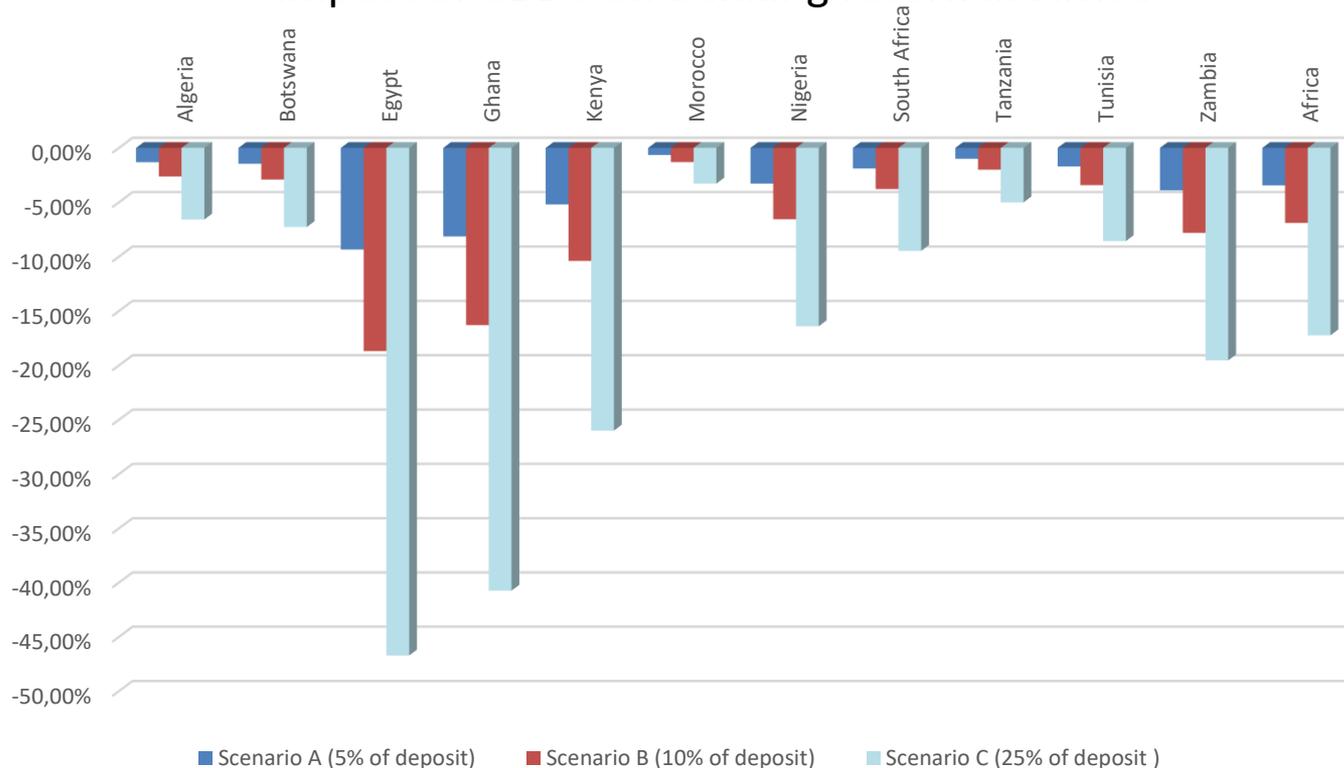
Assets	Liabilities
HQLA: $HQLA_{pre} - D \cdot s \cdot LCR_{pre}$	Deposit: D
Loans: $Loans_{pre}$	Wholesale funding (WF): $WF_{pre} + D \cdot (1 - s \cdot LCR_{pre})$
Other Assets: $Other_{pre}$	Capital: $Capital_{pre}$

III. Methodology and Data

The study leverages data from 11 countries, encompassing over 80% of global African GDP (PPP)

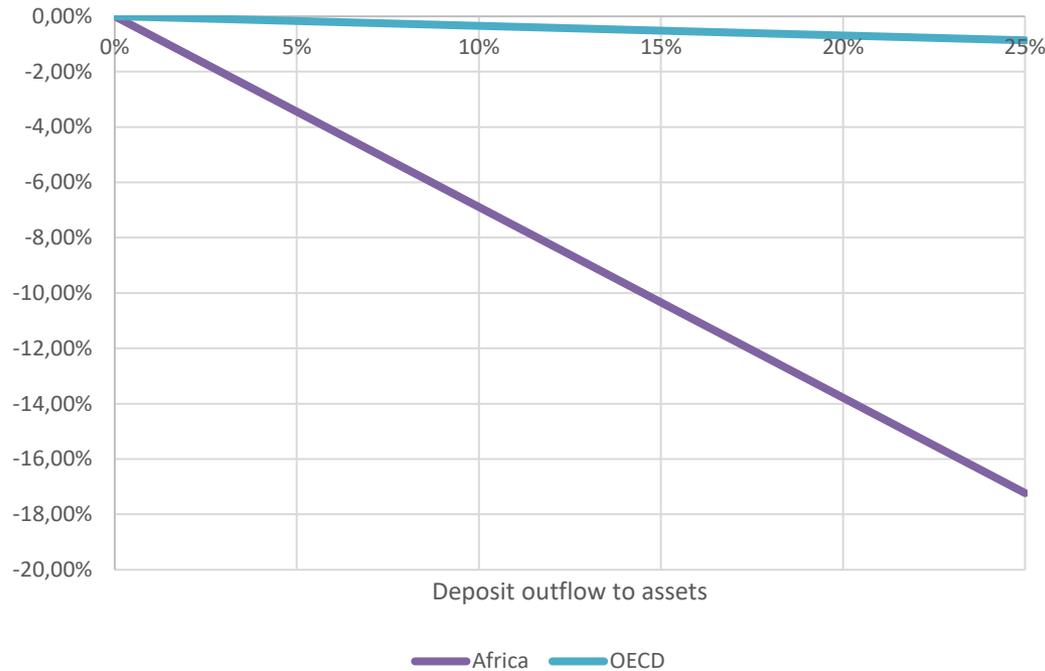
Variabe	Africa	OECD
Spread b/w 5yrs wholesale and deposit rates	18,03%	0,63%
Spread b/w HQLA and deposit rates	10,35%	0,00%
Deposit outflow to total assets	70,46%	11,60%
Net Interest Income	4,76%	3,52%
Return on equity	18,39%	7,50%
Net Interest Margin	4,76%	2,30%
Deposit outflow to loans	144,26%	20,00%
Loans to assets	52,10%	58,00%
LCR	170%	125%
Stress factor	15%	15%

Impact of CBDC on banking return in Africa



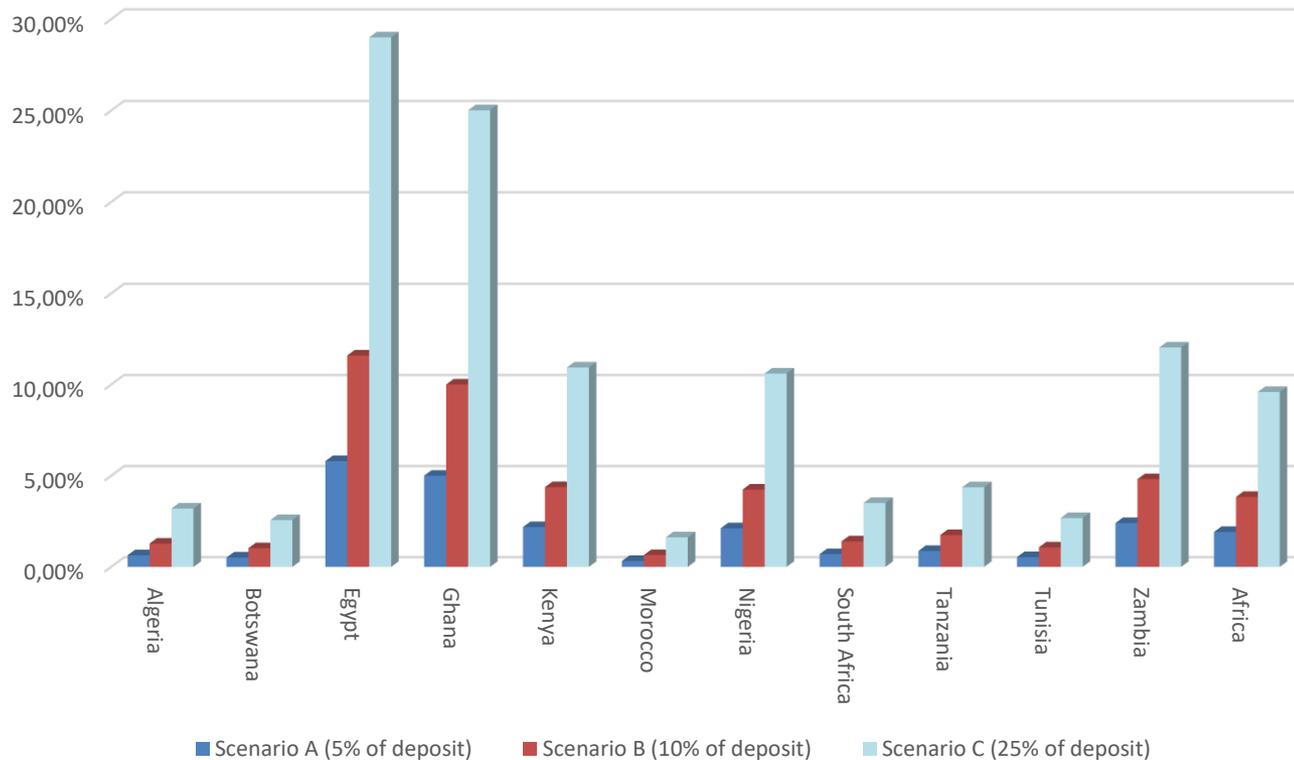
Scenario A (5% of deposits) shows a moderate impact on RoE across all countries
 Scenario B (10% of deposits) nearly doubles the negative effect compared to Scenario A
 Scenario C (25% of deposits) further intensifies the RoE decline, exceeding 40% in some cases

Africa vs OECD: Change in RoE



The average result for Africa, standing at -3.45% for low-adoption (Scenario A), -6.89% for moderate-adoption (Scenario B), and -17.23% for high-adoption (Scenario C), is significantly higher than is significantly higher than OECD countries

Impact of CBDC on lending condition in Africa

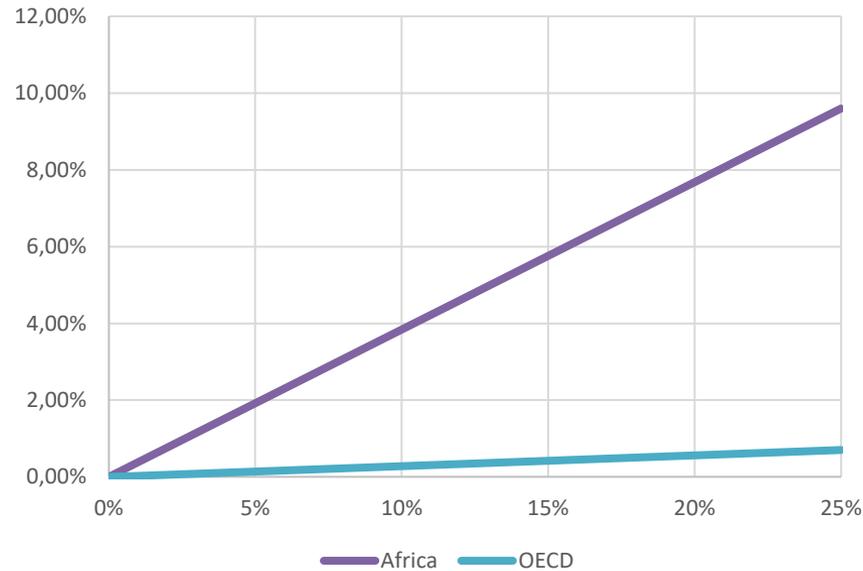


Scenario A shows a moderate impact on lending rate across all countries

Scenario B nearly doubles the positive effect compared to Scenario A

Scenario C further intensifies the LENDING RATE INCREASE, exceeding 25% in some cases

Africa vs OECD: Change in lending rate



The average result for Africa, standing at +1,92% for low-adoption, +3.84% for moderate-take up, and +9.60% for high-take up, is significantly higher than for OECD countries

The findings indicate that the introduction of CBDC could lead to a notable decrease in banks' Return on Equity, particularly in scenarios with higher levels deposits Leakage

The variation in the impact across different African countries, with more developed banking systems experiencing relatively lesser declines

In response to the potential decrease in profitability, banks may resort to increasing lending rates to maintain their profitability levels. This adjustment in lending conditions could have significant implications for borrowers and the overall economy

African financial authorities should prioritize conducting in-depth macro-financial impact assessments to leverage the potential benefits of CBDC while mitigating its adverse effects on banks and the broader economy

Thanks !