



Discussion on “Cryptocurrencies and Decentralized Finance (DeFi)”

THE 21ST BIS ANNUAL CONFERENCE
JUNE 24, 2022

Tobias Adrian
Financial Counsellor and Director
Monetary and Capital Markets Department
International Monetary Fund

Risks and Opportunities of DeFi

Risks:

- **Market Risks:** heavy reliance on crypto collaterals
- **Liquidity Risks:** concentration of liquidity providers
- **Cyber Risks:** cyber attacks
- **Other risks related to crypto assets:** operational, governance, AML/CFT

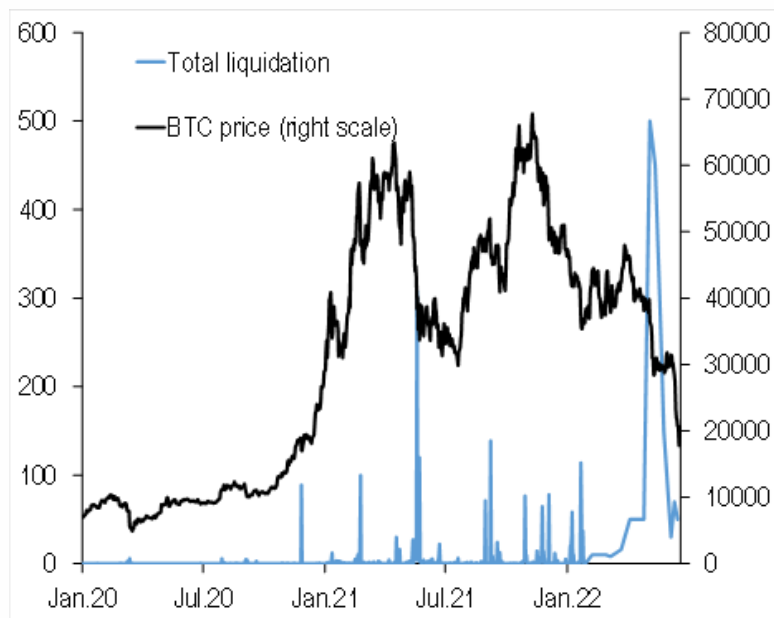
Opportunities:

- **Enhanced efficiency:** lower intermediation cost (no labor or operational costs)
- **Promote competition:** between DeFi and traditional financial institutions

Market and Liquidity Risks

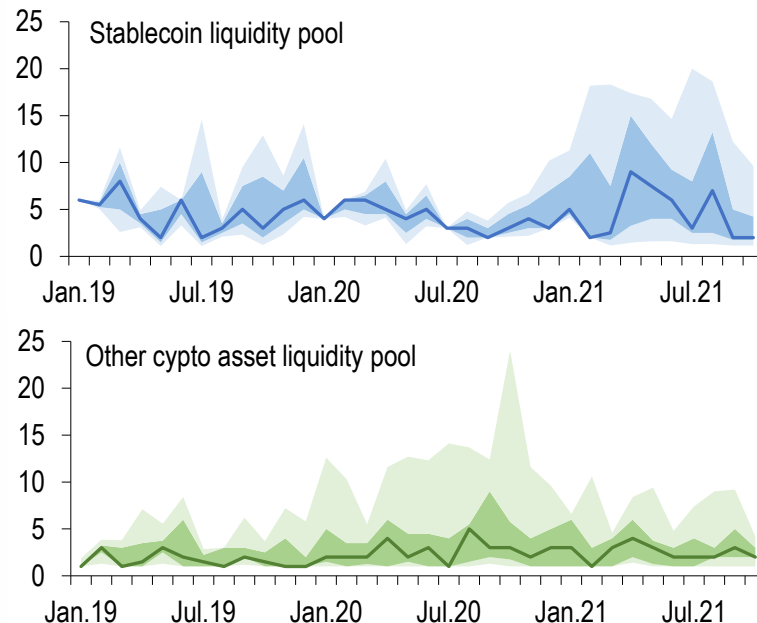
High volatility of crypto asset prices lead to frequent liquidation of DeFi lending

Liquidation Volume
(\$mn, weekly)



Liquidity is provided by only few accounts

Number of Accounts Providing 50% of Liquidity Pool
(interquartile distribution across collateral assets)

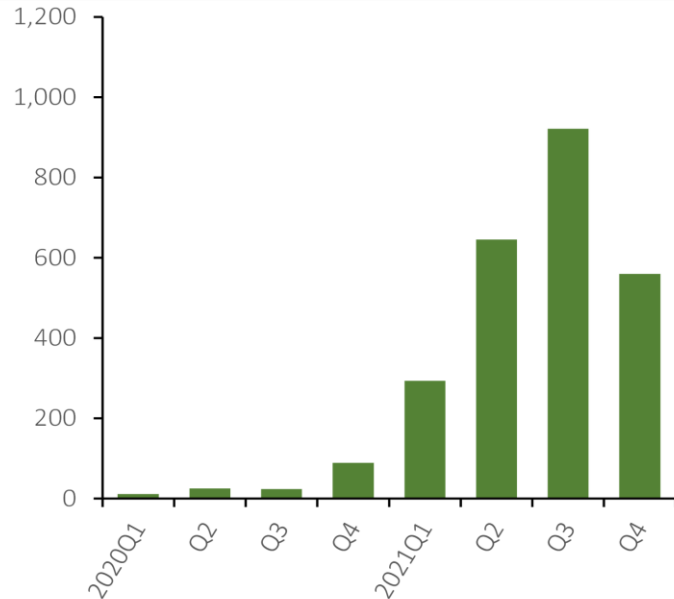


Source: Aave v2, Compound v2, CoinGecko, C.R.E.A.M. Finance, DeFi Pulse, The Graph, IMF staff

Cyber Risks

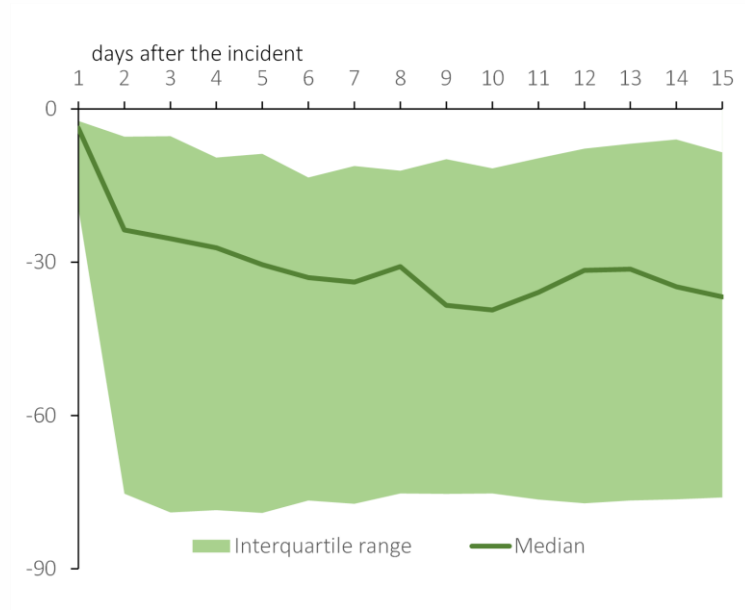
Cyber attack increased substantially after 2021...

Gross value stolen by DeFi related cyberattacks
(Millions of US Dollars)



... and in most cases over 30% of deposit was lost or went away after attack

Cumulative Abnormal Growth of Total Value Locked after Cyberattack (% deviation relative to total market growth)

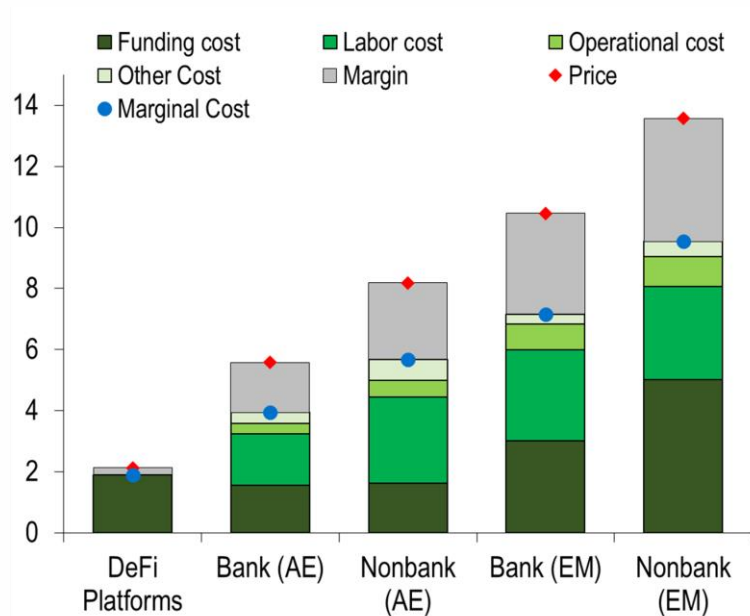


Source: Chaianalysis, CoinGecko, CryptoSec.info, DeFi Lhama, ImmuneFi, rekt, IMF staff

Opportunity: Cost-Efficient but still vulnerable

DeFi is cost-efficient in lending compared to incumbents, having lower marginal costs.

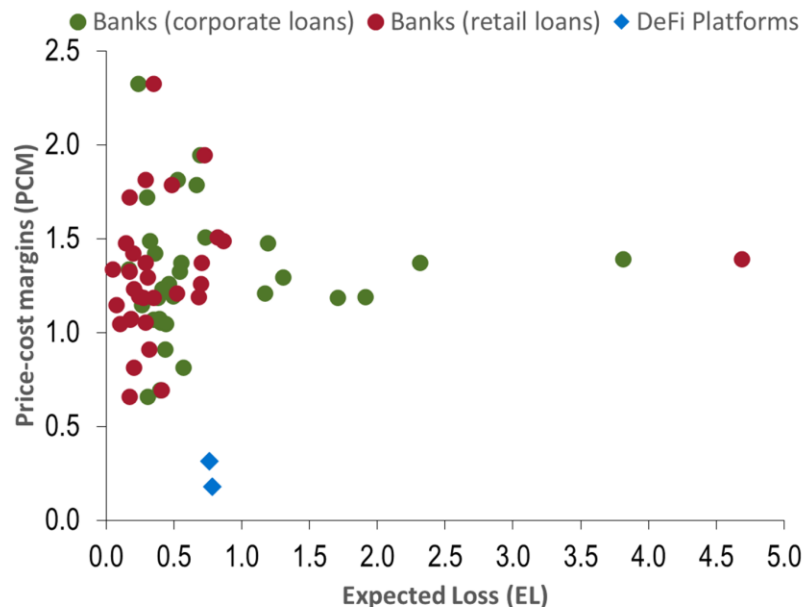
Estimated Marginal Costs and Margins
(in percent)



Source: FitchConnect, Aave, Compound, IMF Staff

However, DeFi has riskier borrowers than banks with thinner margins.

Estimated Margins and Expected Loss
(in percent)



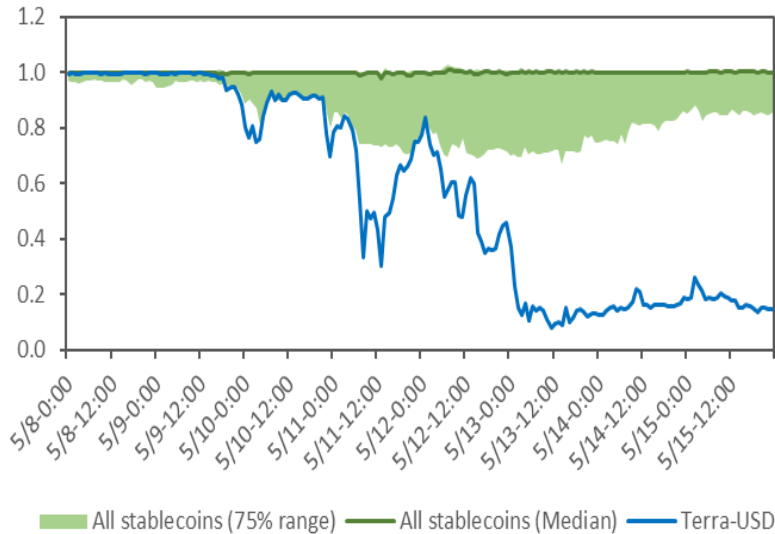
Note: Each dot represents the average margin and expected loss of banks in a country.
Source: EBA Risk Dashboard, Aave, Compound, CoinGecko, IMF Staff

The Collapse of TerraUSD (UST)

TerraUSD(UST) and LUNA

TerraUSD(UST) has been de-pegged since May 9

**Value of UST and other stablecoins
(US Dollar)**

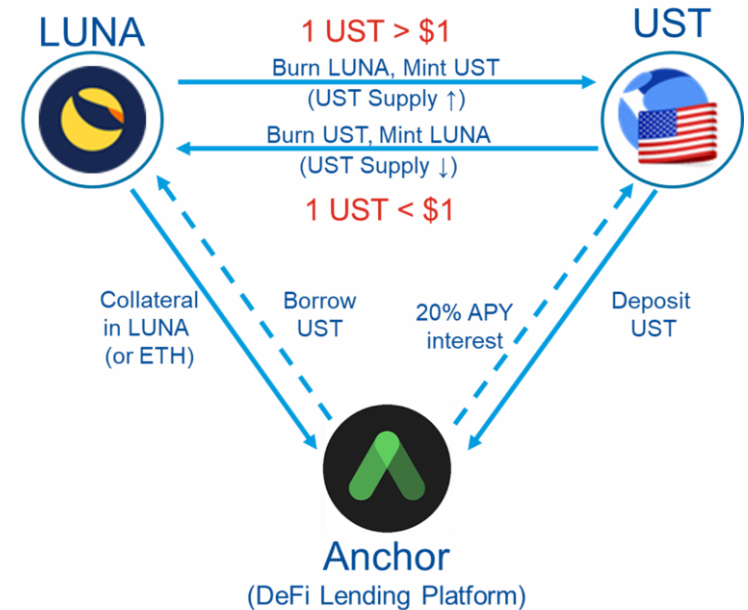


Source: CoinGecko

Note: Sample includes 26 USD stablecoins categorized in CoinGecko that includes both algorithmic and non-algorithmic stable coins.

Trading algorithm between LUNA and TerraUSD kept UST pegged to US Dollar.

Terra Ecosystem Framework

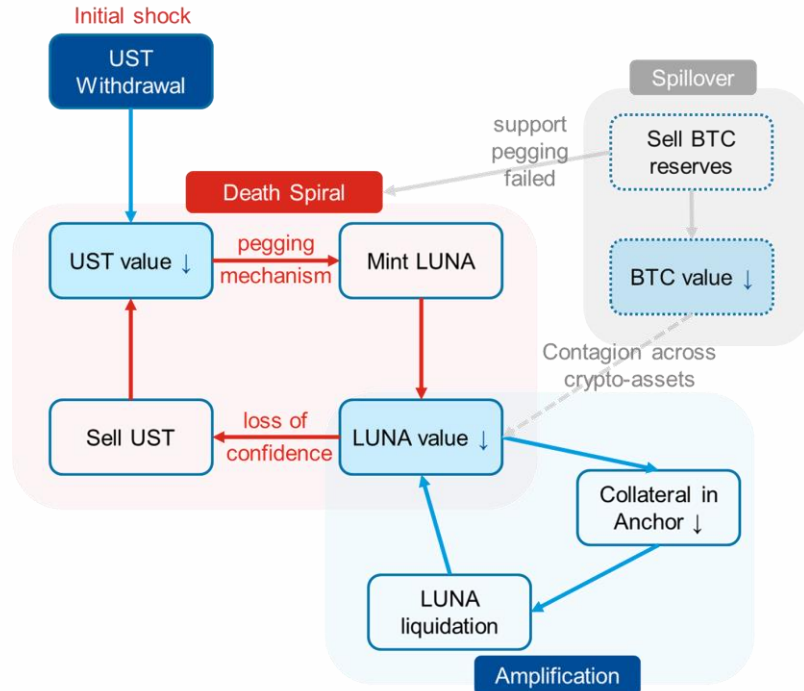


Source: IMF staff

What happened?

UST Withdrawals initiated the death spiral.

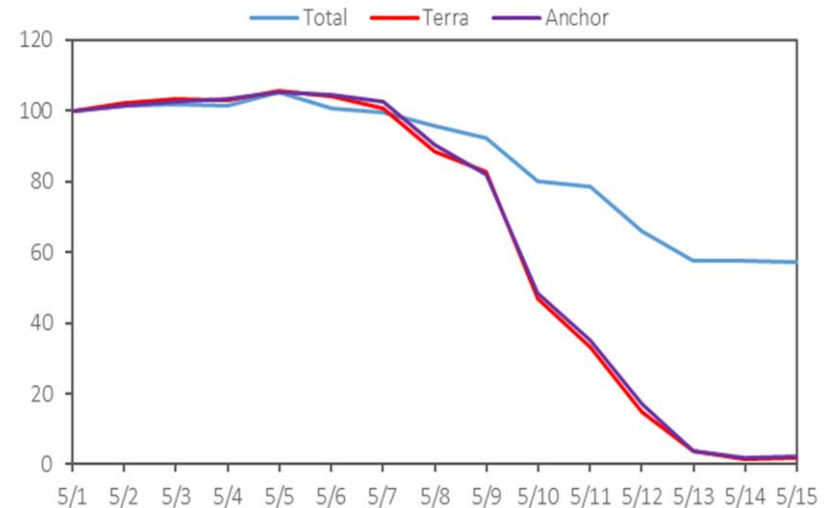
Collapse of Terra Ecosystem



Source: IMF staff

Terra liquidity dropped significantly since the start of the depegging.

Total Value Locked since May 1 (2022-05-01 = 100)



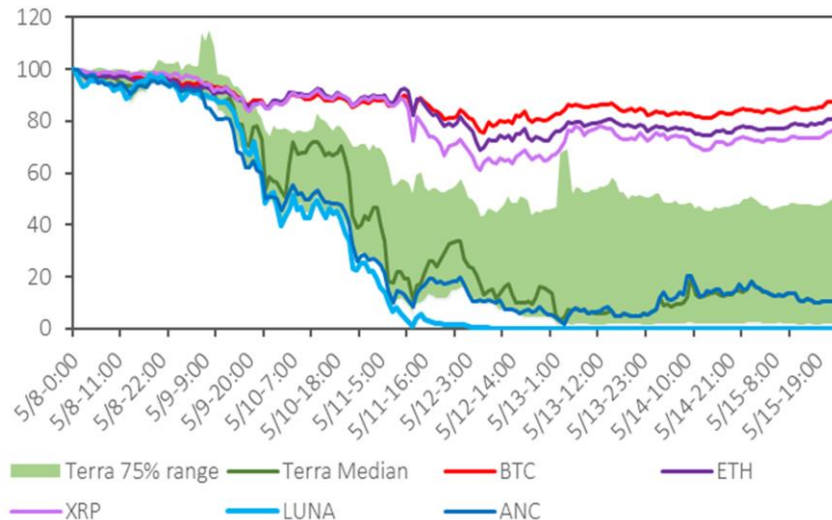
Source: DeFiLlama and IMF staff calculations

Note: "Terra" is the gross sum of all DeFi platform on Terra blockchain.

Spill-over

Value of entire Terra ecosystem has been wiped out, while other crypto markets were also affected.

Impact on Terra Ecosystem and other crypto markets
(2022-05-08 = 100)

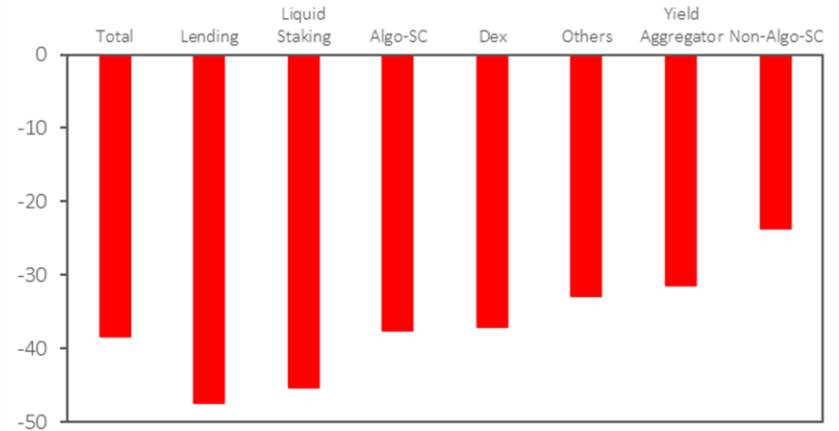


Source: CoinGecko

Note: BTC: Bitcoin, ETH: Ethereum, XRP: Ripple, LUNA: Terra-LUNA; Distribution of Terra is derived from the price of Terra-Luna, Anchor-protocol, LIDO-DAO, Astroport, Mirror, Stader, Mars, Loop, Spectrum, Pylon, and Kujira.

All platforms experienced a shortage of liquidity after the depegging of UST

Cumulative Changes in Total Value Locked after May 8
(percent)



Source: DefiLlama

Note: Algo-SC represents algorithmic stablecoins. Non-Algo-SC represents other stablecoins.

Policy Recommendation

- **DeFi poses unique challenges to regulators:**
 - ▶ Anonymity, lack of a centralized governance body, and legal uncertainties.
 - ▶ Growing interconnectedness among DeFi, stablecoins, and traditional financial entities
 - ⇒ **Call for enhanced regulatory surveillance and globally consistent regulatory frameworks**
- **Regulation should focus on elements of the crypto ecosystem that enable DeFi.**
 - ▶ Centralized entities could provide an effective liaison for regulators to address the risk of DeFi growth (such as stablecoin issuers and centralized exchanges)
- **DeFi platforms should be encouraged to have robust governance schemes.**

Thank you!