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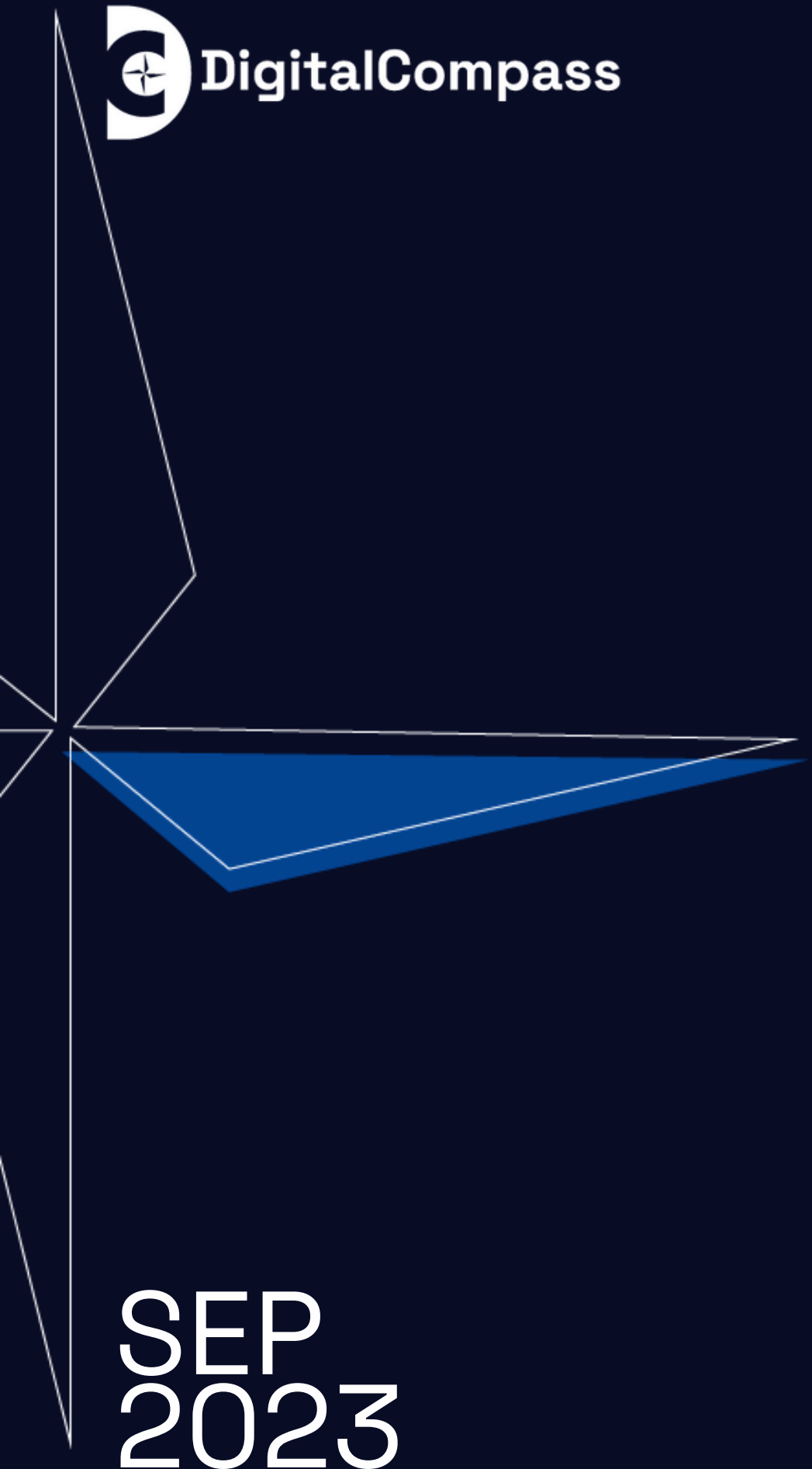
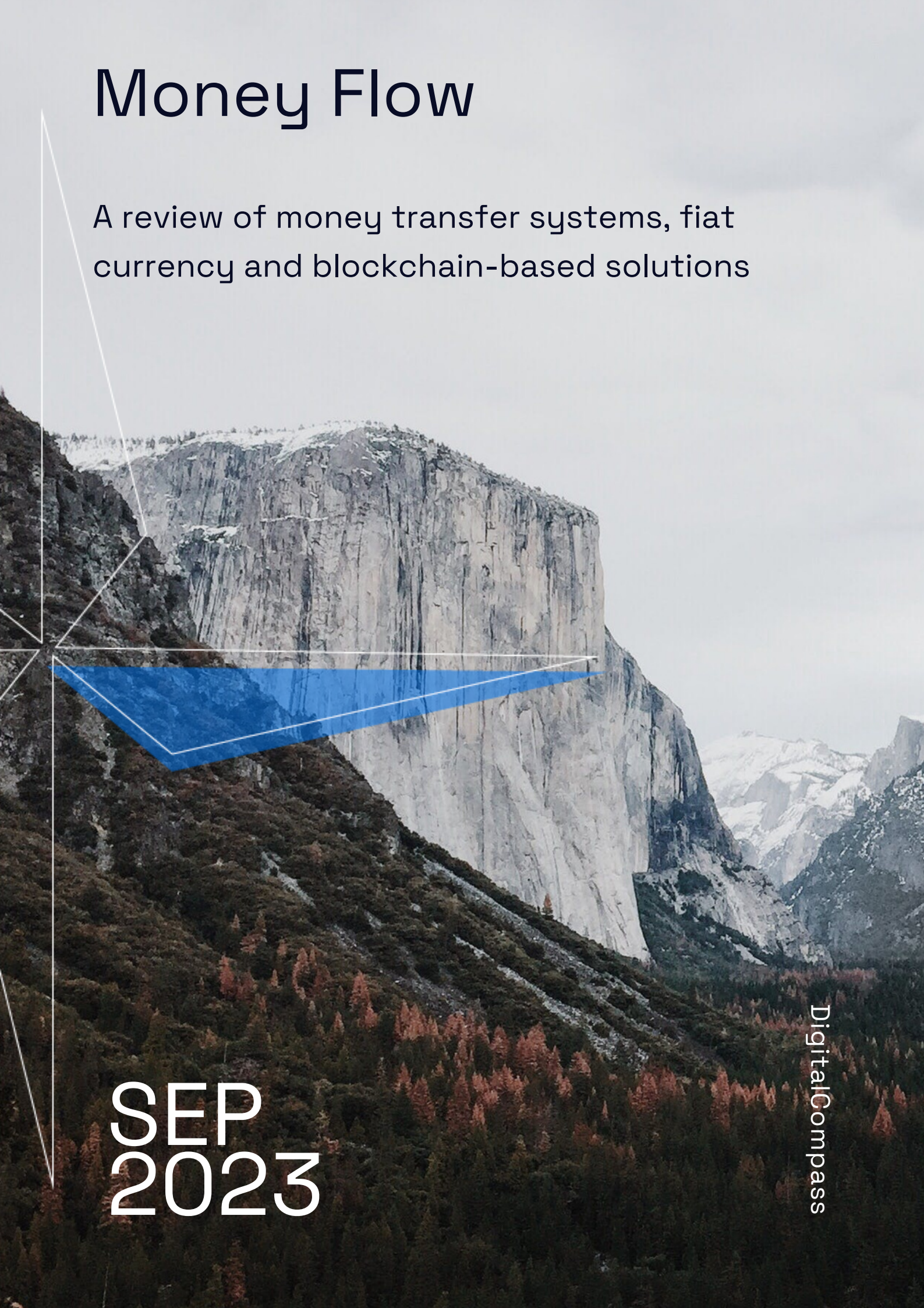


SEP 2023

MONEY FLOW

Money Flow

A review of money transfer systems, fiat currency and blockchain-based solutions



SEP 2023

DigitalCompass

MONEY FLOW

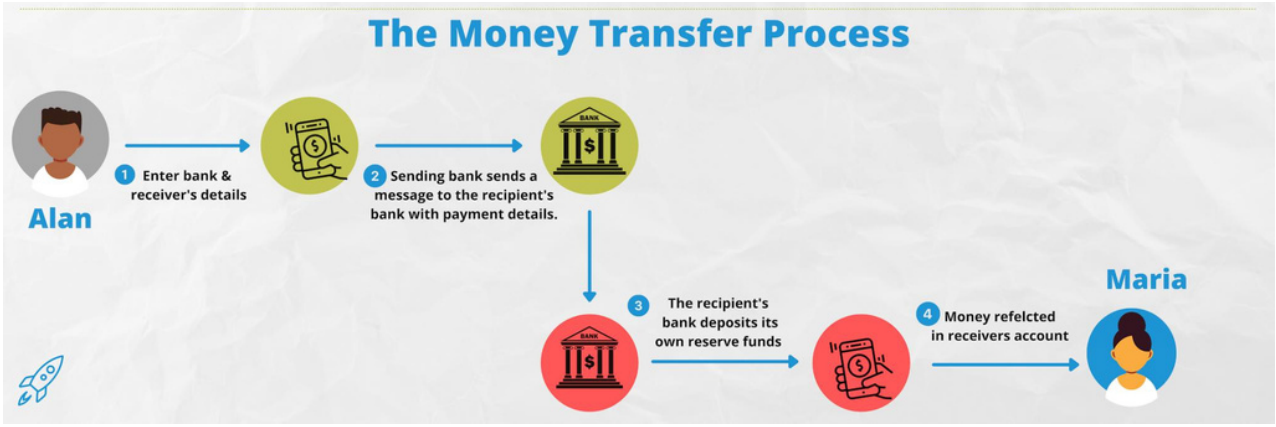
The transfer of money around the world happens through different paths and networks making it slow, costly and inefficient. The traditional way people and institutions transfer money is characterized by involving several centralized intermediaries with the power to decide who can participate on the payment network and the scope of their participation.

Retail money transfers are controlled and executed by different layers of institutional intermediaries and networks. An example would be someone sending money to a third party. The sender has to provide their bank with specific transfer instructions, and the bank in turn executes a transfer through the SWIFT network on their behalf. This transaction is received by a receiving bank who in turn transfers the money to the third party. A regular user depends on the bank authorizing them and the transaction so the transaction can be executed, in turn, the receiving party also depends on being authorized by their bank to receive and access the funds.

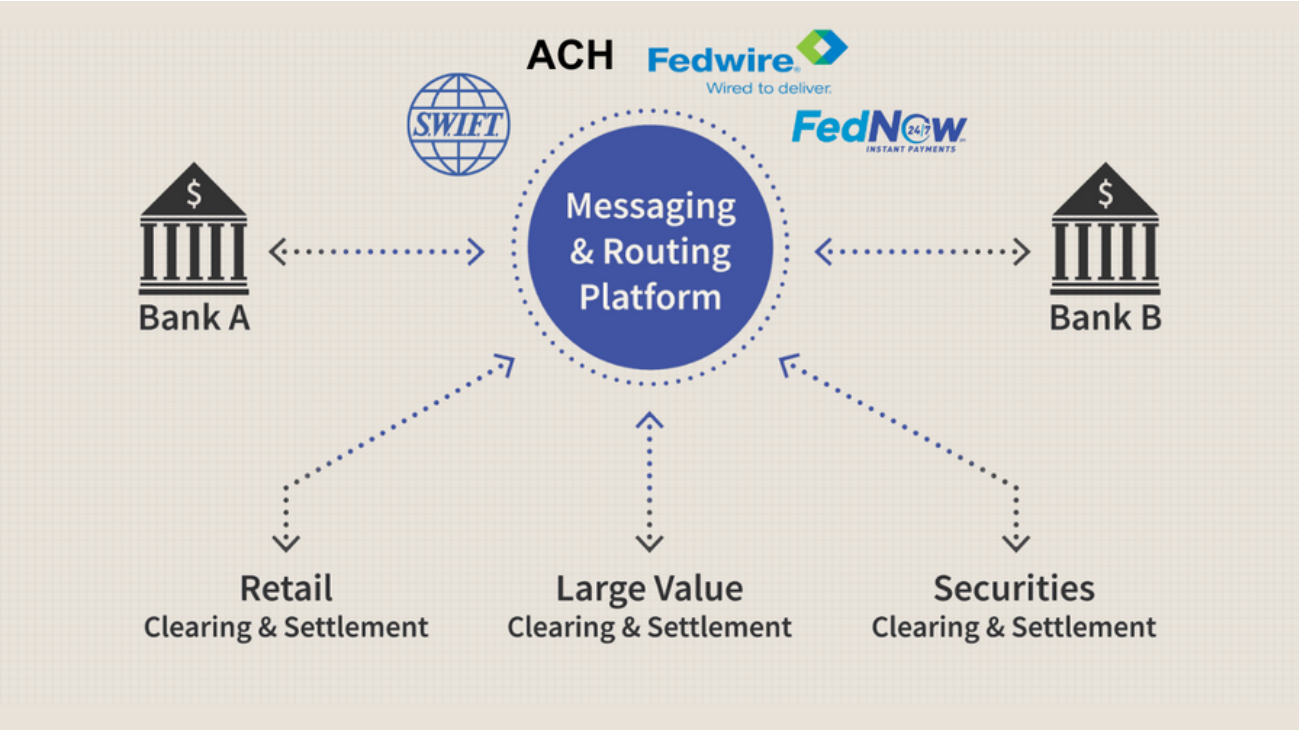
A traditional money transfer requires the following steps:

- The sender initiates the transfer by providing their bank with the recipient's name, account number, bank name, and amount to be transferred.
- The sender's bank or transfer agency verifies the sender's identity and account balance, and deducts the amount from the sender's account.
- The sender's bank or transfer agency sends a message to the recipient's bank or transfer agency through a secure network, such as SWIFT, Fedwire, or SPEI, with the details of the transfer.
- The recipient's bank or transfer agency receives the message and credits the amount to the recipient's account.
- The recipient's bank or transfer agency notifies the recipient of the transfer.

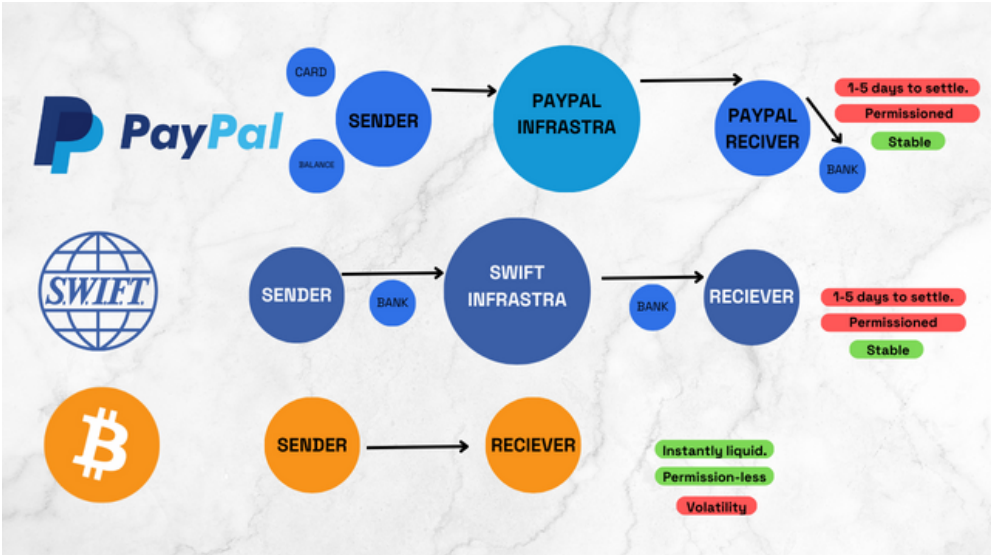
The following diagram shows a simplified example of a money transfer using wire transfer:



Institucional money transfers are similar to retail but they cut a few more intermediaries than the retail users. Institutions such as banks work directly with payment networks as opposed to retail that work with the banks or platforms that work with the payment networks.

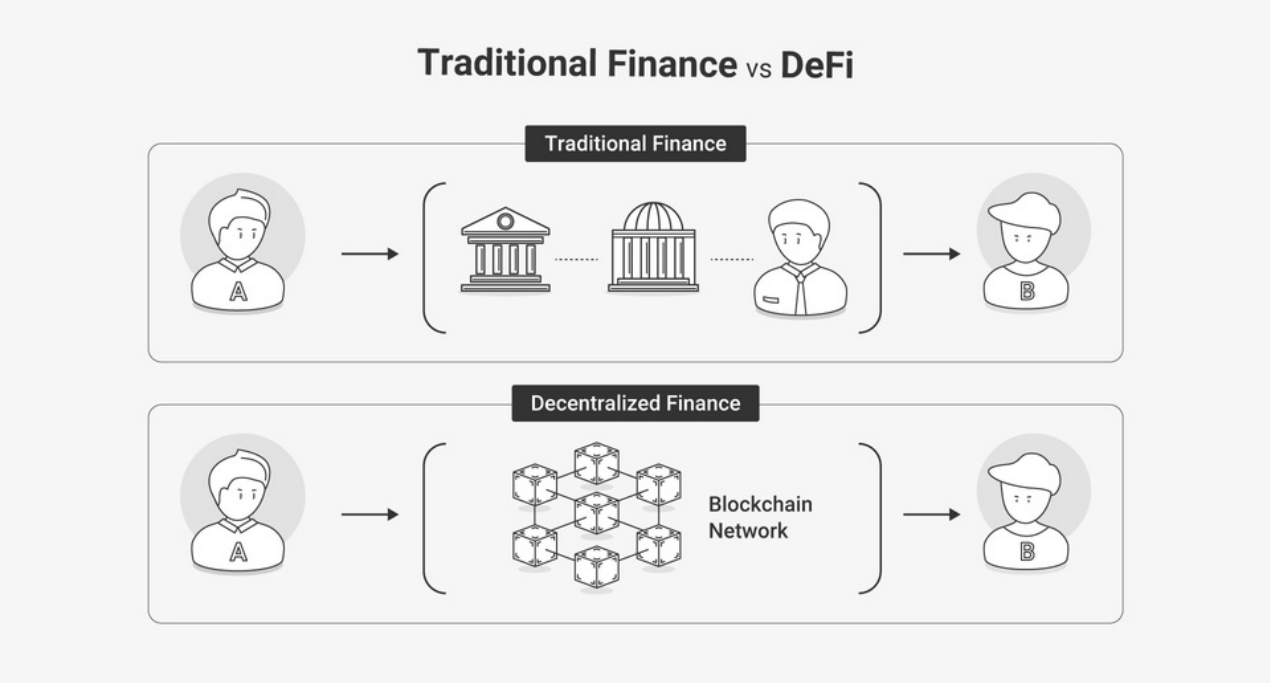


In contrast to the traditional money flow, the adoption of blockchain technology has created new opportunities to facilitate more efficient mechanisms to transfer money characterized by a faster execution speed, significantly reducing transaction costs, removing unnecessary centralized actors and democratizing finance by lowering the barriers of entry for unbanked sectors of the global economy, all this without compromising security.

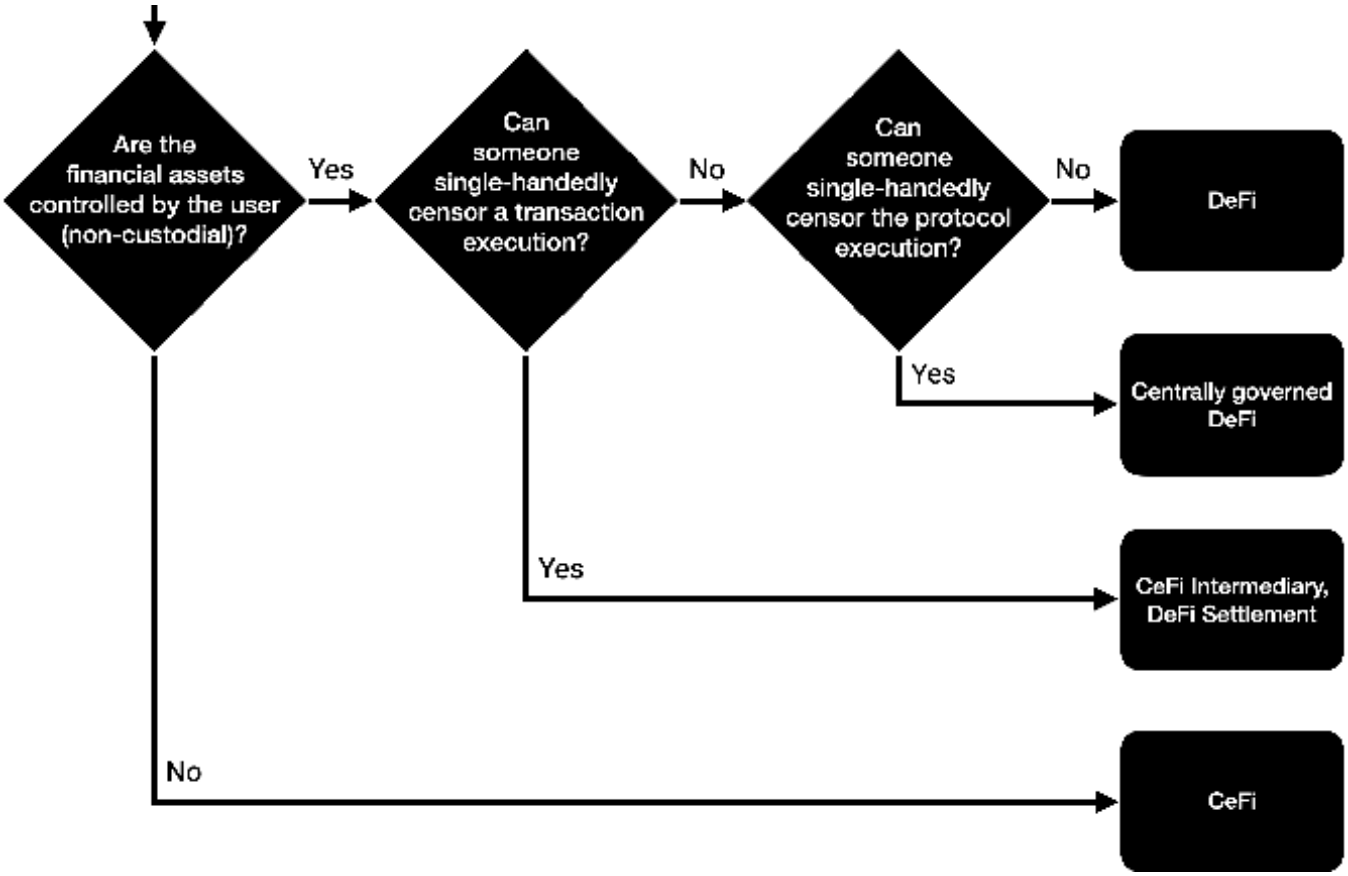


The following table summarizes the key parameters between the Centralized Traditional Finance (TradFi or CeFi) and the blockchain-based Decentralized Finance (DeFi)

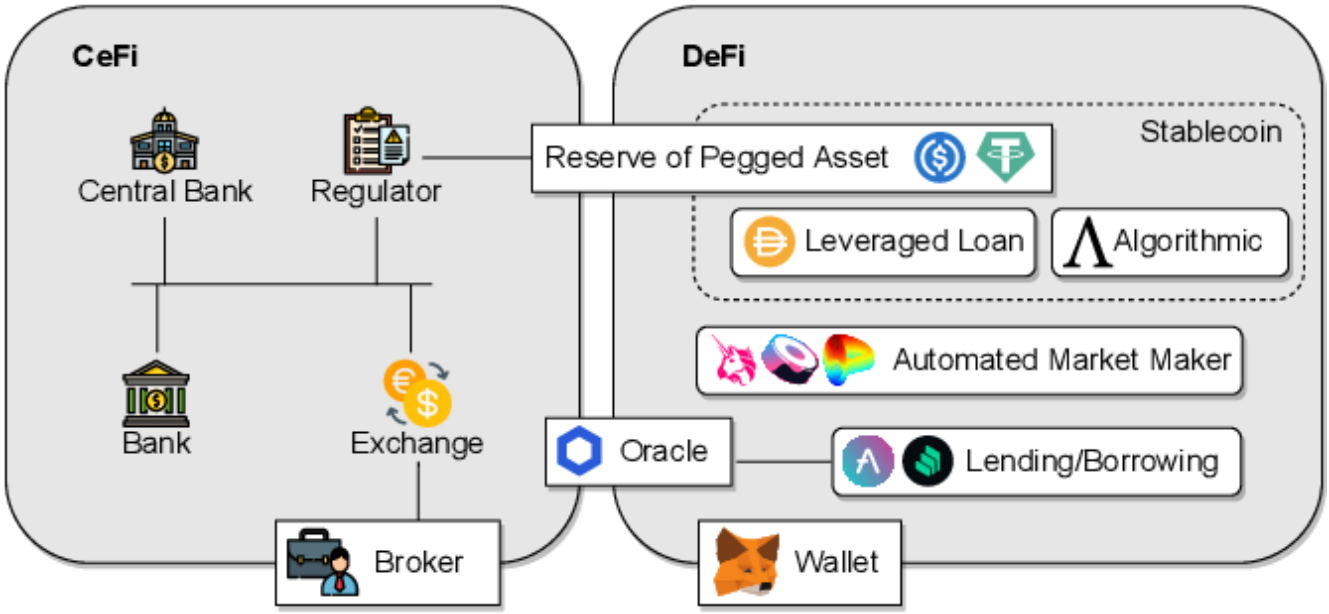
	TradFi	DeFi
Permission / Verification	Yes. TradFi is permission-based by the centralized actors	No. DeFi is permission-less. No need to verify the other party in order to securely execute a trasnaction
Custody	Financial institutions take custody of money	User can take direct custody of their money
Control	Tight	Autonomous
Finality	Depends on aproval process. Can take from several hours to days	Instant
Lending	Brokered. Follow many rules	Automated and easy to execute
Operation hours	Limited by work week	24/7/235
Fees	High fees based on a fixed amount or a %	Lower fees based on block demand
Reach	Only for the banked population	Virtually anyone



Blockchain-based finance can be implemented partially incorporating some of its attributes without having to be a 100% DeFi solution. The following graphic illustrates different levels of decentralization in the money flow.



High-level service architecture of CeFi and DeFi.



Money Flows in the Economy

Money flows are the movements of money between different entities in the economy, such as individuals, businesses, banks, governments, and other countries.

Money flows can be affected by various factors, such as monetary policy, fiscal policy, trade policy, technology, preferences, expectations, shocks, etc. These factors can create bottlenecks or frictions that slow down or distort the money flows in the economy.

- A bottleneck is a situation where shortage or congestion of money supply or demand in a certain market or sector, prevents the smooth flow of money. For example, lack of liquidity in the financial market due to a banking crisis or a credit crunch, can create a bottleneck for borrowers who need money to finance their activities.

- A friction is a situation where there is a cost or difficulty associated with transferring money from one market or sector to another, reducing the efficiency of money flows. For example, high transaction costs or exchange rate risks involved in sending or receiving money across borders, can create a friction for international trade or investment.

One way to measure the performance of money flows in an economy is to look at indicators such as speed, cost, transparency, and inclusiveness. These indicators can help determine how fast, cheap, clear, and accessible are the money transfers among different agents and markets. For example:

- Speed refers to how quickly money can be transferred from one agent or market to another. Speed can be measured by indicators such as payment processing time, settlement time, clearing time, etc.

- Cost refers to how much money is spent or lost in transferring money from one agent or market to another. Cost can be measured by indicators such as fees, commissions, spreads, taxes, exchange rate losses, etc.

- Transparency refers to how much information is available or disclosed about the money transfers among different agents and markets. Transparency can be measured by indicators such as payment details, transaction history, exchange rate quotes, etc.

- Inclusiveness refers to how widely or easily money transfers can be accessed or used by different agents and markets. Inclusiveness can be measured by indicators such as payment methods, payment channels, payment networks, payment regulations, etc.

There are various ways to improve the performance of money flows in an economy by reducing bottlenecks and frictions. Some examples:

- Using faster and cheaper payment systems that use digital technologies such as STP (Straight-Through Processing), SPEI (Interbanking Electronic Payment System), SWIFT (Society for Worldwide Interbank Financial Telecommunication), etc. These systems can reduce the time and cost of money transfers by automating and standardizing the payment processes and messages.

- Using more transparent and inclusive payment platforms that use digital technologies like Visa, MasterCard, AMEX, PayPal, etc. These platforms can increase access to money transfers by providing more payment options and channels for different agents and markets.

- Using more stable and flexible payment instruments that use digital technologies like cryptocurrencies, stablecoins, and other blockchain-based solutions. These instruments can reduce the exchange rate risks and transaction costs of money transfers by using decentralized and programmable money that can be transferred across borders without intermediaries.

Fiat Money and Blockchain-Based Cryptocurrencies

Fiat currency, also known as traditional money, operates as a centralized form of currency, supported and regulated by a central government body, such as a Central Bank. Its value relies on the trust and authority vested in the issuing entity. Transactions involving fiat currency can occur through various channels, including cash, checks, cards, and bank transfers. While fiat currency offers benefits like stability, widespread acceptance, asset security, and user-friendly convenience, its utility hinges on the confidence users place in the issuing government. However, there are drawbacks to fiat currency as well, including governmental control over financial systems, intermediary fees, its susceptibility to inflation, which diminishes its value retention, and its potential exploitation in illegal activities such as money laundering.

Cryptocurrencies, commonly referred to as "crypto," represent digital value secured by blockchain technology and cryptography. They serve as a medium of exchange, unit of account, and store of value. Unlike fiat currency, most cryptocurrencies operate in a fully decentralized manner, functioning peer-to-peer without intermediaries. However, some cryptocurrencies operate on private ledgers controlled by single entities. Notably, cryptocurrencies lack backing or recognition from any government or country, relying solely on the trust of their users. Transactions involving crypto occur through digital wallets, online exchanges, or peer-to-peer networks. Advantages of cryptocurrencies include increased financial control and privacy without reliance on banks, reduced costs and delays due to the absence of intermediaries, resistance to inflation and value depreciation, and enhanced transparency and security facilitated by public transaction records.

Why crypto could be the solution

Crypto presents itself as a potential solution to various challenges and limitations inherent in traditional money and payment systems. It offers a range of potential benefits:

- Greater Control and Privacy: Users can manage their finances and transactions independently, bypassing the need for banks and avoiding fees, restrictions, and data compromises.

- Lower Costs and Delays: Direct peer-to-peer transfers eliminate the involvement of intermediaries, reducing costs and transaction times.

- Resistance to Inflation: Cryptocurrencies provide a hedge against inflation and currency devaluation, safeguarding purchasing power and wealth.

- Transparency and Security: Utilizing blockchain technology, transactions are recorded on a tamper-proof, transparent ledger, enhancing security and accountability.

However, crypto also confronts some challenges and risks:

- Volatility: The market-driven nature of cryptocurrencies leads to price fluctuations, posing uncertainty for users.

- Limited Adoption: Regulatory concerns and low availability hinder widespread acceptance, limiting crypto's utility for everyday transactions.

- Lack of Protection: Users are vulnerable to theft, fraud, and hacking without traditional safeguards like insurance or legal recourse.

- Illicit Use: Crypto's anonymity can facilitate illegal activities such as tax evasion and money laundering, raising regulatory concerns.

To maximize its potential, crypto requires ongoing innovation, collaboration, and regulation to address these challenges and integrate effectively with traditional systems. Balancing its advantages with mitigating its drawbacks will be key to its future development and integration into the broader economy.