



Economics of Libra

Christian Catalini

Chief Economist, Libra Association

Co-Creator, Libra

MIT & NBER (on leave)

Developing a new model for trust in digital platforms

Blockchain technology allows for new market design

Cost of Verification

- Ability to cheaply verify state

Cost of Networking

- Ability to bootstrap and operate a marketplace without assigning control to a centralized intermediary

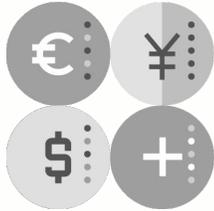
Catalini, C., Gans, J., "Some Simple Economics of the Blockchain", Communications of the ACM, 2020

Key objectives of the economic design of the Libra Network

1. Trust in an efficient medium of exchange and payments network
2. Trust in the Libra protocol and resulting market for payments and financial services
3. Trust in the governance and future evolution of the network

- 1. Trust in an efficient payments network**

Types of Libra Coins



Single-currency stablecoins

(e.g., ≈USD, ≈EUR, ≈GBP, etc.)



Multi-currency coin (≈LBR)

A digital composite of some of the single-currency stablecoins available on the Libra network.

Single-currency Stablecoins

WHAT

People, and businesses, in countries whose local currencies have single-currency stablecoins on the Libra network will be able to directly access a stablecoin in their country's currency (e.g., \approx USD, \approx EUR, \approx GBP).

HOW

This will begin with some of the currencies in the proposed \approx LBR basket.

Each single-currency stablecoin will be fully backed by the Reserve.

This will be supported by a competitive network of resellers and exchanges buying and selling each coin.

Over time, and by working closely with key stakeholders around the world, the number of single-currency stablecoins available will expand.

WHY

This approach can lower costs for both domestic and cross-border payments and enable new functionality.

It will give maximum flexibility and control to central banks for how the Libra payment system is used in their countries.

It will provide a clear path for seamlessly integrating central bank digital currencies (CBDCs) as they become available.

Building strong protections in the design of the Libra Reserve

WHAT

Define how the Reserve would respond to extreme market situations.

The structure and administration of the Libra Reserve is intentionally designed to mitigate threats, minimize risks, and preserve the value of Libra Coins over time.

The design of the Reserve incorporates strategies based on best practices from other systems.

HOW

The Reserve will hold, in cash or cash equivalents and very short-term government securities, an amount at least equal to the face value of each Libra Coin in circulation.

The Reserve will hold assets with very short-term maturity, low credit risk, and high liquidity.

Administration of the Reserve will be transparent to the public and auditable. To help consumers remain protected in the case of financial market stress, the Reserve will be further endowed with a capital buffer.

WHY

The regulatory capital requirements and buffers will protect against potential losses from credit, market, and operational risks.

Libra Coin holders should have a high degree of assurance they can convert their Libra Coins into local currency.

Regulatory capital requirements and buffers

Approach to and calibration of the regulatory capital requirements and buffers for credit risk, interest rate risk, operational risk and liquidity risk.

Requirements will grow as the assets at risk grow, and/or as they grow riskier.

Point-in-time capital requirement that Libra Networks will be expected to maintain at all times (Pillar 1), and additional capital buffers (Pillar 2).

Libra networks will generate the required capital through retained earnings or through raising capital from investors.

Transparency and Auditability

The administration of the Reserve will be transparent to the public.

The Reserve will be audited on a regular basis by independent auditors.

The results of those audits will be made publicly available to demonstrate that all Libra Coins in circulation are fully backed by matching assets comprising the Reserve.

The Association will publish on its website on a daily basis the then-current composition of the Reserve and the then-current market value of the assets.

Future Integration with CBDCs

Over time, the Association hopes to collaborate with central banks on issues such as direct custody or the integration of the Libra payment system with CBDCs.

This would reduce credit and custody risk, streamline the operations of the Reserve, and provide additional comfort to Libra Coin holders.

2. Trust in the Libra Protocol and resulting market for payments and financial services

Economics of Consensus Algorithms

Proof-of-Work does not allow for relational contracts by design. As a result:

- Wasteful computation is needed to secure the network
- Nodes cannot be incentivized along unobservable dimensions, and can collude to keep quality low
- There is no way to avoid concentration except through forking

In systems like Libra, relational contracts rely on off-chain reputation and local institutions to secure the network.

Catalini, C., Jagadeesan, R., Kominers, S.D., "Market Design for a Blockchain-Based Financial System", SSRN Working Paper No. 3396834, 2019.

Libra Association Members



ANDREESSEN
HOROWITZ



coinbase



FARFETCH



iliad

kiva



Ribbit Capital



TEMASEK



Uber



The Libra network is designed to encourage competition and innovation

It is not a walled garden, but an open technology standard where both incumbents and startups can compete on a level playing field.

Open and transparent membership criteria are used to ensure competition for nodes and effective governance.

Low switching costs, low barriers to entry and high interoperability ensure strong competition for custody and financial services.

More competition means lower prices, improvements in quality, and the development of new services and business models.

3. Trust in the governance and future evolution of the Libra Network

**An independent
and strong
Association is
key for broad
participation
and adoption**

Founding Members are needed to drive utility and adoption, secure the network, and bootstrap a market for delegation (this solves the "nothing at stake" problem of PoS systems).

Similar economics to a standard setting organization.

Without distributed governance, organizations and individuals would not build on the same ecosystem, reinforcing fragmentation in payment and financial services.

Designed to avoid a "tragedy of the commons" and ensure resources are available for advancing the Libra protocol.

Replicating the key economic properties of permissionless systems

The Libra journey began with businesses and nonprofit organizations with a shared vision to facilitate a global payment system built and governed as a public good.

In the first Libra white paper, the Libra Association shared its intention to eventually transition the blockchain network to a permissionless system.

Regulators raised thoughtful questions about the perimeter of control for the Libra network — in particular, the need to guard against unknown participants taking control of the system and removing key compliance provisions.

The Association believes it is possible to replicate the key economic properties of a permissionless system through an open, transparent, and competitive market for network services and governance.

Competition is a prerequisite for building a highly interoperable, efficient, and innovative payment system

New entrants need to be able to compete for:

1. The provision of payments and financial services to businesses and consumers.
2. The opportunity to run independent validator nodes that increase the security and reliability of the Libra consensus protocol by having non-correlated failure risks.
3. Active participation in the governance and evolution of the Libra project.

The Libra project achieves the first objective at the outset as the network is modeled after an open technology standard, and the Libra protocol is built for a high degree of interoperability.

The second and third objectives require a market-driven process that allows newly qualified Association Members to enter and compete with existing ones.

An open, transparent, and competitive market-driven process

WHAT

Forgoing a future transition to a permissionless blockchain network.

Exploring a future transition to an open, transparent, and competitive market for network services and governance that can replicate the key economic properties of a permissionless system.

Outlining a proposed approach for expanding and renewing membership over time.

HOW

Expanding membership: open calls for new Members and define how many membership slots are available in each round.

Renewing membership: existing Members will renew participation based on good performance.

At both stages, the Association will set open-call criteria to ensure that the selection process is objective and transparent, and also that it incorporates critical dimensions for the growth, diversity, safety, and integrity of the network.

WHY

Offering new entrants the ability to compete for the provision of core network services, and participate in governance while ensuring the Libra Association's ability to meet regulatory expectations is upheld.

Thank you!

 libra