

Libra, It Could Have Been Solar

Corporate Money to Take Cryptocurrency Mainstream

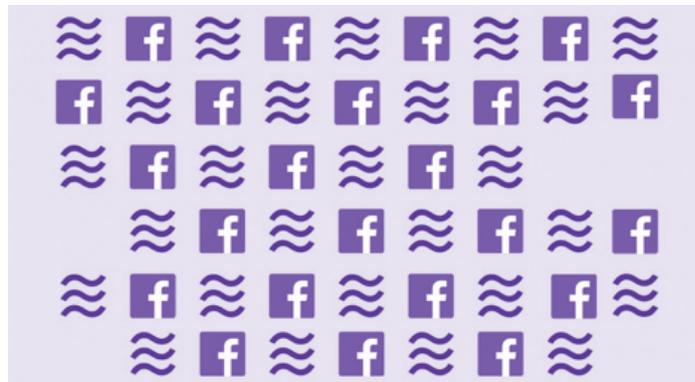
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Note: This paper is an analysis of the technologies and trends surrounding blockchain and cryptocurrencies. It is not, and must not be considered as, financial, investment, or legal advice.

Libra etymology

Libra is a clever name. It implies harmony, peace and balance. Librae was also an ancient Roman unit of weight and was used in Middle English to refer to a pound. As we know the English monetary pound started out as a pound of silver. The symbol continues to be a special form of the letter L. There is a deep historical monetary reference being invoked. Libra aims to be the coin that takes cryptocurrency mainstream. Starting in 2020.



Government money, Private money, Corporate money

The idea of a fully digital or electricity-based money goes back several decades. The introduction of Bitcoin in 2008/09 was both a result of technological advancements that provided the foundation for a secure cryptocurrency and a reaction to the failures of the banking system and fiat currency that produced the Great Recession.

Bitcoin fits in the category of **Private Money**. No government issues it; no corporation is behind it. It is created on 'mining' computers in accordance with the Nakamoto consensus and its monetary policy, with a Proof of Work cryptographic algorithm; anyone can mine it. It is as if you dug up gold and refined it and fashioned into a bar and stamped the weight and fineness. In this case the Nakamoto consensus inserts the new money into the decentralized open ledger for Bitcoin at the public address of the miner and under the control of the private key of the miner. The miner can sell (transfer to another public address) the Bitcoin for fiat on an exchange and use that fiat to pay the electricity bill and other costs.

Libra, introduced by Facebook and 27 Association partners in mid-June 2019 is, make no mistake, **Corporate Money**. It is created by an association of corporations in a partnership expected to grow to perhaps 100 members over time. Each member of the association has to stake \$10 million to join and must fulfill other requirements related to size and reputation. (Certain non-profits can join under less stringent guidelines).

Is it a blockchain?

These Association members are then able to act as validators of transactions into the open quasi-decentralized ledger of Libra. This is a permissioned ledger maintained by the Association members who take turns serving as the lead validator, each with the larger of 1 vote or 1% of votes.

A key part of the security of Bitcoin is based in chaining of transaction blocks. The chain is created by hashing the previous block and inserting that hash into the current block, and doing this repetitively.

In the Libra model, the block and the chain are virtual. Libra blocks are batches of transactions as proposed by the lead validator. A 2/3 quorum among validators is required to approve the block of transactions. Establishing that quorum relies on a chain, but there is no direct relationship between the 'block' and the 'chain' for these.

Referring to it as the Libra Blockchain, as the white papers do, is a marketing stretch at best. Each new transaction creates a new ledger state that is stored as a Merkle tree and validated. There are no blocks in the ledger, much less a blockchain. Facebook wants to use the term to help ease the regulatory burden perhaps, and because of general market awareness.

The consensus used by validators is a voting mechanism that requires a 2/3 majority and is a type of Byzantine Fault Tolerance. The consensus can be thought of as a hybrid with Proof of Stake since Association members must put up considerable capital. And in fact, the Libra white paper states the intent is to move to a Proof of Stake algorithm over time. This remains a tricky problem; Ethereum has been delaying a move to Proof of Stake for years.

Smart Libra

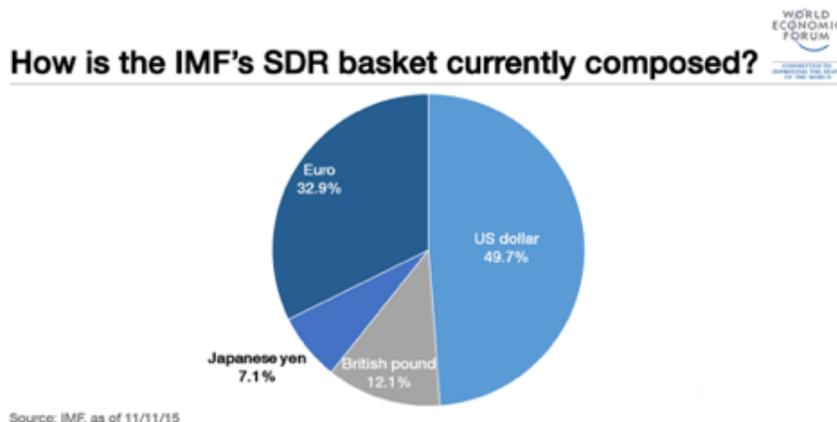
My Mom was a Libra, she was smart. This Libra also intends to be smart, and to support a range of applications. Libra has its own language, called Move, for smart contracts, including the core token creation, accounting, and payments functions. This is a stack-based language with restricted functionality and with a source level compiler, intermediate representation and a run-time environment in a virtual machine to execute bytecode. Initially the intermediate representation, bytecode specification, and VM are available as open source; the compiler is under development.

Move is designed to be safer than say, Solidity, the default smart contract language for Ethereum, which has suffered a number of hacks. Being better than Solidity is not a high bar.

Less flexibility and not being Turing-complete can prevent ambiguity and are thus desirable attributes for smart contracts moving money around. Initially only a predefined set of essential contracts are available, but the intent is to open things up to the developer community over time.

Move will be the development environment for smart contracts implementing a wide range of e-commerce offerings accessed from the Facebook portfolio. The Libra Association will proceed carefully to maintain security.

How is the IMF's SDR basket currently composed?



Composition of the SDR before the Chinese Yuan was added

SDR-Lite

But enough of the gory technical details. What is Libra in currency terms and what is it good for? In currency terms, it is a basket of strong currencies such as the US Dollar (\$) and the Euro (€), created with 100% reserve backing in the form of short-term securities (bills) and cash deposited in bank or brokerage accounts. It appears that the initial currencies in the basket will also include the UK Pound (£) and the Japanese Yen (¥).

The Libra money supply is dynamic. Libra will be created or destroyed (burned) in response to demand. Thus, unlike Bitcoin, its monetary policy is derived from the mix of currencies in the basket.

So, it is a stable coin, but unlike other stable coins, it is tied to a currency basket. It looks rather like the Special Drawing Rights (SDR) administered by the International Monetary Fund, but without the Chinese Yuan. Facebook is not allowed to operate in China for censorship reasons, so the Yuan, which is also subject to strict capital controls, is left out of the basket.

Think of it like a money market fund, but the dividends from holding short-term government paper do not go to holders of Libra. They accrue to a separate currency called the Libra Investment Token that is only held by Association members who have staked the \$10 million entry fee.

As Corporate money, it is important that it be audited to ensure full reserves are held as backing, otherwise the value could drop below the nominal currency basket value. It may trade at a slight discount or premium in any case.

There are risks with pegging to a basket of fiat money and accepting fiat money that is not in the basket. For example, suppose a banking liquidity crisis, or a crisis of confidence arises, in Italy (as an example), and fears arise that Italy might withdraw from the Euro. If the Libra Association is holding Euro in Italian banks, seeking higher yields than in Germany, then in this instance they could lose the peg, slip below the nominal value, due to concerns of bank insolvency.

What could have been

The promise of cryptocurrencies includes decentralization, trustless security, immutability, open source access, permission-less participation, autonomous smart contracts, pseudo-anonymity, a tamper-proof monetary policy, and an easy-to-use development environment.

Achieving such a mix of attributes is difficult. When it has been approached, it has resulted in slow transaction rates and volatility, making the currency unsuitable for high volume transactions or for every-day use. To address this, the industry has responded by (a) compromising on the ideals of cryptocurrency, accepting less-rigorous variations of the above attributes in order to achieve higher transaction rates, and (b) creating stablecoins tied to fiat currency to address volatility.

Facebook's commanding global digital presence can drive adoption and take the cryptocurrency concept to the mainstream. However, Libra compromises on too many attributes of the ideal cryptocurrency to be categorized as anything but a walled-garden Corporate money, and barely a "crypto" currency at that.

Imagine if instead of creating this Corporate money Facebook had:

1. Created a currency (call it Solar) that association members could mine on supercomputers via Proof of Work, but also any Facebook user could mine on their laptop or phone, and
2. Established a system that would pay license fees in Solar for data placed into the Facebook platforms, and
3. Implemented a true blockchain that would secure the ownership of the data for the originators.
4. The name 'Solar' indicates that the currency would be beyond global and eventually be used in colonies on the Moon, Mars, and Callisto.

But that wouldn't be Corporate money, it would be People's money. And that wouldn't be in furtherance of surveillance capitalism. Facebook is claiming it won't have access to your financial transactions with Libra, but they do want to use Libra to extend identity functionality.

Who will use it?

Nevertheless, the entrance of major companies into the Libra Association is a significant endorsement of cryptocurrency concepts and will boost the importance of digital money. Government money will carry on, Corporate money will be a significant part of the market, as will Private Money.

Libra will have appeal to hundreds of millions of potential users for obvious reasons. The first is Facebook's huge reach and easy and familiar interfaces for WhatsApp, Instagram, and Facebook. Now in addition there will be a mobile wallet, Calibra, to hold currency amounts and send to users or businesses within the Facebook world of over 2 billion users via WhatsApp or otherwise.

So, scale, ease of use, and a growing set of future applications are big wins.

The other is the appeal of a slowly depreciating (under 2% likely) currency because of the underlying strong fiat currency basket. The users are mainly going to be consumers, because there is no strong investment potential. But for those living in higher inflation nations such as Brazil or India, there could be a preference for holding Libra rather than reals or rupees.

Libra will also be very useful for international transfers by expatriate workers sending money to families in their home countries, presumably for much lower fees than they currently pay.

Libra is going to have to be approved by the financial authorities in each country (more on this in a following section). They are going to have to establish banking relationships and relationships with cryptocurrency exchanges. Someone is going to end up with a pile of rupees or other fiat that wants to be exchanged for a combination of \$€£¥.

If adoption is strong this will force down the value of non-\$ € £ ¥ fiat and disrupt the foreign exchange markets in weaker currencies. The financial authorities will need to manage this, implying capital controls regarding how

much Libra can be purchased per day, etc. And it is the higher inflation, weaker currency nations that already tend to have stronger capital controls. So this is a major hurdle in markets that they see as potentially having the most acceptance.

There could even be a banking crisis in a given country if everyone rushes into Libra with its introduction. We do not expect this, because financial regulators, if not the Association itself, will limit the rate of transfer.

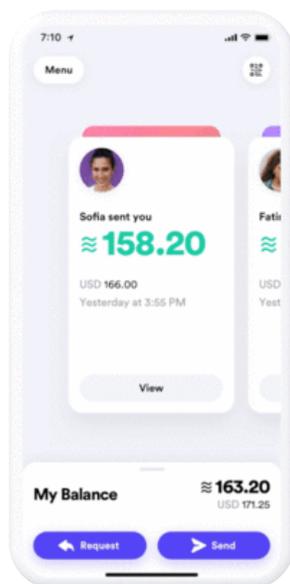
Impressive Association

The Association has 28 major players including Facebook, who have created a subsidiary known as Calibra. The participation of members such as Visa, Mastercard, and PayPal indicates they can have a very big reach in payments. This is what PayPal wanted to do, change payments across the globe, and Libra now has a real shot at doing it.

Many other firms will want to join; the Association seeks to have 100 corporate members. Banks will be cautious, and they have other plans in the blockchain arena for their own stablecoins and payment solutions. A voting position and capital position in Libra is a promising investment on its own.

In any case, Visa and Mastercard have relationships with practically every bank worldwide. And they deal in very large volumes of foreign exchange. This provides a path for users, at least the ones with credit cards, to purchase Libra with their particular national fiat, whether pesos, reals, rupees, or rupiahs.

How will the Association make money? They will charge fees for payment services, and develop new applications that operate in the Facebook ecosystem. They will also earn dividends on their special Association-members-only Libra Investment Token holdings since funds will be held in short-term government paper (they have a challenge with the Euro since short-term rates are currently negative in many European nations).



Calibra wallet design

Government pushback, shadow banking?

This brings us to what will be imminent and certain government regulation. Facebook is a highly visible company already under scrutiny for data privacy and other issues. The Libra Association's mere entrance into the cryptocurrency world, with its heavy-hitter participants, makes it an urgent matter for governments to clearly define their policies and legal framework. Such regulations will impact the whole project, and might even lead some Association members to back out.

Even in the developed world, including countries such as the US and France, there is going to be significant pushback. Facebook is already under the microscope because of breaches of user privacy including with Cambridge Analytica, who illegally interfered in the 2016 American election, using Facebook as a platform.

The US Financial Services committee chair in the House, Congressperson Waters, said that Facebook should pause their Libra plans until there is government review. There are Senate and House hearings already scheduled for this month on this topic. The French Finance Minister Le Maire was even more emphatic. '[It must not happen] *ça ne doit pas arriver.*'

Facebook is already a target for its surveillance capitalism model, and Congress and European governments know who to require testimony from. Mark Zuckerberg, Facebook CEO, and David Marcus, who heads the Libra effort, the Calibra subsidiary, and messaging products at Facebook. He was previously president at PayPal and is currently on the board at Coinbase, the leading US custodial exchange for crypto.

Facebook is in the midst of a legitimacy crisis and has been slow to change. One can interpret the introduction of Libra as a huge pivot for the company and an attempt to change the market narrative while building trust in a very different way. They may have changed the narrative already.

Now you see why they want to call it Libra Blockchain ('It's not money, it's a blockchain!"). The devil will be in the details, with regulatory permission and banking relationships required on a country-by-country basis. The traditional banking community will be lobbying to restrict what many regulators could view as shadow banking.

Libra and Bitcoin. Will they eat the world?

Will Libra aid Bitcoin?

If Libra is a checking account, then Bitcoin has been a savings account, attracting so-called "hodlers" (misspelling of 'hold') who acquire, but are very loath to sell, Bitcoin. At a minimum, Libra is a big boost for the cryptocurrency space. It will promote additional awareness for Bitcoin, and serve as an on-ramp for people who want to not just spend, but also save, cryptocurrency. Existing cryptocurrencies around the world will need to add Libra onto their exchange and people will be able to move between fiat, Libra, and Bitcoin at will, subject to regulatory restrictions. Moving in and out of fiat to Libra will probably require a banking account and a KYC (know-your-customer) process.

And yet Facebook is selling Libra on the idea of reaching the unbanked. How they are going to thread this needle? It looks as if they expect to push the KYC burden onto the cryptocurrency exchanges. The regulation of these has been steadily tightening. It can sometimes be more difficult to open an account on a crypto exchange than it is to open a bank account. And the unbanked don't have Visa cards to buy Libra with.

Suppose an overseas worker from the Philippines has a bank account in the country where she works. If she sends Libra to her mom back home, who does not have a bank account, how does her mom convert that to pesos? Perhaps her only option is to use private money changers at unfavorable rates or spend the Libra she has received with merchants on the Facebook platforms.

Bitcoin in the basket?

Will Libra *add* bitcoin? Now a thought experiment. Suppose Facebook and the Association decide to add cryptocurrency to the basket. Since they are positioned competitively against important cryptos such as Ripple and Ethereum for payments, transfers, and smart contracts, there is really only one clear choice: Bitcoin, which possesses over 60% of the market capitalization of all cryptocurrencies combined.

Now Bitcoin is too volatile, you say. Indeed, Libra is designed to be a low-volatility stable coin. But it already possesses some volatility due to the exchange rate fluctuations between the \$, € , £ , and ¥.

A small amount of Bitcoin, a 1 or 2% component, would be both a brilliant marketing ploy and a way to strengthen relationships to all the cryptocurrency exchanges. And Bitcoin volatility is decreasing over time as the ecosystem grows and matures and major institutional platforms like Fidelity and Bakkt/ICE come on board.

Once Libra volumes explode, it will put pressure on non \$ € £ ¥ central banks to add to their reserves, and even consider Bitcoin as an additional component, a digital gold, within their reserve holdings. The Bank of England governor has made comments that his central bank might be willing to hold reserve balances directly from Libra's Association, bypassing the commercial banking system.

World money?

Libra can't be a path to world money; nation-states would never allow it. But it could be a viral path for Bitcoin to become a global reserve component for fiat currencies. This would be self-reinforcing for Bitcoin.

Because Libra and Bitcoin are so different, one is for spending, the other for saving, one is Corporate money, the other is Private money, they could end up very complementary, the Yin and Yang of cryptocurrency. And if you are wondering, Bitcoin is Yang, but that is a blog for the future.

This could be some kind of accommodation for all, for Corporate money, for Private money, and for Government money. Happiness for all, for a while, but it would be a metastable period. Corporate money and/or Private money seem to be ascendant. Time will tell, but the Bitcoin ever-tightening monetarily policy is relentless, and this acts as a strange attractor for value.

Daniel Jeffries writes in a recent blog about Libra: "they've started the planet down the path of ditching the dollar". We tend to agree that competing currencies are ready to reduce the importance of the dollar. Libra might play an important role in that process. We also believe that Libra will facilitate the continued rise of Bitcoin.

References

- ✦ Libra white paper: <https://libra.org/en-US/white-paper/>
- ✦ Libra Blockchain technical paper: <https://developers.libra.org/docs/the-libra-blockchain-paper>
- ✦ Daniel Jeffries blog: <https://hackernoon.com/libra-a-cyberpunk-nightmare-in-the-midst-of-crypto-spring-5543b6f6e34b>

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