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Stablecoins' Sense of Stability and Finality

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1. Why 'Stable'?

In the DLT Blockchain space, the language usually adopted means differently in the legal framework. Fundamentally germane words such as 'transactions' or 'stability' convey different meanings within DLT language than legalese. As witnessed by the recent request from Coinbase for the U.S. Supreme Court to prohibit customers from seeking court actions, DLT entities are no different from their traditional counterparts when conflicts arise. All conflicting parties must seek resolution through the same legal system. This challenge, however, offers an opportunity: to create a suitable regulatory construct, we ought to disentangle the ambiguity of terms used commonly with an a-legal sense.

'Stability' is an especially problematic example. It is essential to deeply understand why it has been used for particular digital assets, named stablecoins. From an average user's viewpoint, stable is a synonym for reliable. Seemingly, this is more of an economic concept than a legal one. But modern economics employs a different take on stability, particularly concerning central banking. The famed Nobel Laureate Milton Friedman notes: "the moderately stable monetary framework seems to be the necessary condition for effective functioning of a private market-based economy. It is doubtful whether the market itself may provide such a framework. As a result, the function of provision is the basic governing function, together with the provision of a stable legal framework".[1]

Again, back to our original question of what words mean within DLT frameworks, when it comes to stability, we need to ask: What is stability for a computer scientist, an economist, lawyer, or government authority officer? From an economic law scholarly viewpoint, the concept of stability in finance is of a macro/systemic nature. Within the interconnected global economies, financial stability has been a staple aim of monetary policymaking long before the smooth functioning of the capital market became a concern. In terms of legal language, the concept of stability is not linked to the price fluctuations of an asset or the correlation with other assets.

Note that the financial perspective, predicated on the smooth functioning of the capital market, finds its reason and rules for defining stability tied to the nature of the randomness of the negotiable assets. If motivated by these reasons, regulators will not attempt to restrain the capital market unpredictability; instead, they aim to purge all practices that exacerbate risk and unpredictability. But we may see stability as intertwined with the mutability of the various manifestation of sovereignty, such as the case of legal tender and monetary policy objectives. If so, the issue becomes complex. As noted, in neoclassical economics, stability goes hand in hand with the need to ensure that monetary policies enable optimal investments and technological innovations. To maintain sovereignty, though, in most economies, a public power (for example US Fed or ECB) is responsible for ensuring stability. Regardless, this stability has to be interpreted. The legal system must define who can solve it, on what basis and for what purpose. And this is

[1] Friedman, M. (1960), A Program for Monetary Stability, New York, Fordham University Press, 7 ff.

precisely our central point. The concept of stability is a subjective, derivative and functional legalistic concept.

Our contention is not without precedence. The seminal works of John Marcus Fleming and Robert Alexander Mundell demonstrate[2] that in open international economies, it is impossible to have all three of the following facets at the same time: (1) a fixed foreign exchange rate, (2) free capital movement (absence of capital controls), and (3) an independent monetary policy. For a free market economy to maintain sovereignty over monetary policy, foreign exchange rates (relative value of native currency) ought to be volatile!

One could, however, ask to what extent the above can hold for stablecoins. As Gorton, Ross, and Ross (2022) argue, stablecoins are private money.[3] This implies that stablecoins are "complementary currency". The question then is whether these instruments that technological innovation makes possible can be compatible with an existing monetary system. Equally, we can ask: How do we modernize our payment system? Are stablecoins beneficial in that effort? As Abadi and Brunnermeier (2020) note[4], "… any method of consensus, be it centralized or decentralized, must give up (i) fault-tolerance, (ii) resource-efficiency, or (iii) full transferability." "The central tension faced by the designer of [blockchains] is between fault-tolerance and incentive provision. The designer must provide either ex-ante incentives for agents to behave honestly (by giving up resource-efficiency) or impose ex-post punishments on dishonest agents (by giving up full transferability)."

Today, stablecoins are primarily used within digital finance and are mainly employed to facilitate trading, lending, and borrowing other digital assets. For stablecoins to effectively play the role of private money, they ought to first and foremost empower the blockchain ecosystems over the abovementioned trilemma. From that perspective, stablecoins can be viewed as digital money market funds. The regulatory (legal) frameworks applicable to money market funds can be a guiding light for stablecoins.

As private money, stablecoins should also bridge facets of the physical world with the digital world. Such an expanded role for stablecoins then demands a more fundamental definition of stability engrained in the very nature of free-market exchange. We discuss these fundamentals in the following section.

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[2] https://en.wikipedia.org/wiki/Impossible_trinity

[3] "Making Money" January 2022, Gary B. Gorton, Chase P. Ross & Sharon Y. Ross, NBER working paper 29710; DOI 10.3386/w29710; see: https://www.nber.org/papers/w29710

[4] Abadi, Joseph, and Markus K. Brunnermeier. "Blockchain Economics", Working Pape, Princeton University.

2. Finality is Most Relevant Than in the Past

Invoking Friedman's idea, legal stability is the bedrock of the well-functioning free-market exchange economy. For an exchange (and payment) to be stable, counterparties involved must have complete transferability. If so, then by the above trilemma, the exchange should predefine a finality: how all previous claims cease to exist, and no one can reverse the exchange. Since payments are mirror images of exchanges—think in terms of ledgers—we can now assert that what makes a payment stable is finality.

Historically, the concept of payment finality was developed alongside the invention of money. Since then, money transfers have been deemed irrevocable and have the power of discharging debtor-creditor obligations. The evolution of finality from a single concept into a family group of ideas has constantly followed the history of insolvency proceedings, as bankruptcy has always been the most frequent origin for assessing the limits of finality in law courts.

The Code Napoléon marks the first modern approach to the finality of payments under bankruptcy. During the XIX century, the intermediation function of the banking system became so popular that the concept of finality by transfer of credit had to be developed.

The French commercial code of 1807 provided a one-gateway approach to bankruptcy, requiring insolvency proceedings to be started before a commercial court. When a judge declares insolvency, it is customary to record just the day the sentence has been passed. To minimize uncertainty, a zero-hour rule was soon developed, voiding all banking transactions executed by insolvent participants starting from the zero hours of the day their insolvency is declared in court.

As a result, the main difference between a money payment and a bank-based one is that the latter is still subjected to claw-back until midnight of the day it has been executed. This brings out the concept of legal finality, which is usually reached only the day after the credit transfer has been implemented. The advent of wire services brought the latest addition: the settlement finality, involving the discharge of an obligation by a nominal transfer of funds through a network of cooperating banks.

A risk concept is associated with each type of finality, so the traditional theory harbours the probabilistic concept of risk. Mathematically, it is expressed by the product of the probability of some adverse event times the amount of money that may be lost should that event happen. The culmination of the traditional doctrine was the principle of settlement finality, which is defined once and for all in which contexts legal finality and settlement finality are instantly achieved by the mere receipt of the order of payment.

The principle of settlement finality states that any transfer of funds executed on specifically designated systems is irrevocable, instantly settled, and protected against insolvency proceedings. According to this principle, the moment an order has entered a designated system

(RTGS, Instant Payment Services) is the successful end of its validation process. This marks the discharge of the sender's obligation and, at the same time, makes the transfer irrevocable, unconditional, and enforceable.

Applying the traditional theory of finality to the world of Decentralized Finance is somewhat tricky. While Law Systems lack a shared agreement about whether digital assets may be regarded as personal property, all admit persons to have rights over those assets. These rights fall short of the traditional concept of property, but they are good enough to allow the sale-purchase of digital assets.

DLT allows multiple parties to keep individual copies of a shared ledger, and a consensus process leads those parties to agree to a specific update of the ledger contents.

However, as noted, the consensus algorithm operates within the bounds of Abdai and Brunnermeier's (2020) trilemma. Moreover, the probabilistic nature of consensus building means there is no guarantee that it will always reach a successful conclusion. Besides, external events beyond the scope of the distributed ledger (hard forks, company liquidations, attacks by hackers) can influence the final state of the ledger even after the consensus has been reached.

On a distributed ledger, settlement finality becomes a probabilistic concept. The longer a transaction has been considered settled by the ledger participants, the less likely it may be reversed in the future. This uncertainty of operation impacts the participants' balance sheets and the rights of their customers and creditors. On the contrary, the traditional approach defines a precise and transparent moment of finality to assign legal liability.

The best enunciation of this dilemma is probably the report authored on July 2022 by the BIS Committee on Payments and Market Infrastructures (CPMI) and by the Board of the International Organization of Securities Commissions (IOSCO). "When seeking to observe Principle 8, a systemically important Stablecoin Arrangement (SA) should:

- clearly define the point at which a transfer of a stablecoin through the operational settlement method used becomes irrevocable and unconditional;
- ensure that there is a clear legal basis that acknowledges and supports the finality of a transfer, a
- Have a robust mechanism(s) for preventing any misalignment between the state of the ledger and legal finality and ensure that legal finality of a transfer, once it has occurred, is maintained regardless of competing for the state(s) of the ledger".

According to Sir Jon Cunliffe, Chair of the BIS Committee on Payments and Market Infrastructures, the provisions described in the document are pretty distant from how stablecoins operate in present-day markets.

However, several alternative finality theories have been proposed. To model the operation of digital ledgers, they abstract from the concept of obligation and focus on describing the exchange of rights on the digital assets hosted on the ledger.

For example, in the case of a Delivery versus Payment (DvP) settlement executed on a Digital Stock Exchange, the new data ownership theory describes the settlement process as a mutual transfer of property rights. In DLT language, that operation is called a swap. According to German Law, both transfers happen simultaneously and are described as two distinct Realakten linked by a sale-purchase relationship.

In the "principles for financial market infrastructures", published in 2012 by the CPMI and the IOSCO, Principle 12: Exchange-of-value settlement system describes the DvP process according to the traditional obligation-based approach. "If a Financial Market Infrastructure settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other"

A successful swap evolves through three different stages:

SF-I: the moment an order has entered the system is defined as the successful end of the validation process

SF-II: the moment an order becomes irrevocable is defined as the successful end of the clearing process, that is, when a match has been achieved between sell and buy orders

SF-III: unconditionality and enforceability of the trade are achieved at the end of the settlement process if the platform is a designated system.

Historically, clearing and settlement have been regarded as two separate processes, with the settlement cycle always associated with T-day, T+1 (tomorrow), and T+2 (the day after tomorrow). Many stock market transactions are still settled T+2, although T+1 is rapidly becoming the standard. DLT-based systems could mitigate settlement risk by merging both processes into one and allowing intraday settlement.

3. Conclusion: How to Make Stablecoins Stable?

The pressing issue today is how to make stablecoins stable. Which, in turn, leads to asking: how to regulate stablecoins? Having proposed that the meaning of stable is legal and intimately related to transaction finality, we discuss the current possible solutions and critic their shortcomings.

First attempts were made by extending previous legislation using an analogy. These were doomed from the start, as there was little hope of integrating new concepts into legislation dating back to the Code Napoléon.

Another solution is to require a wet-ink contract that everyone adheres to by using the service. From a Transformative Law approach, Facebook's Terms of Use are probably the most signed contract in the world. This may not look ideal, but the Terms of Use of competing services are pretty similar and have become a *de facto* standard for new challengers.

Many voices, including the European Central Bank, suggest that Member Countries urgently implement the EU-proposed MiCA Regulation. However, even before its formal approval and implementation, MiCA already absolves the critical function of showing European providers how to formulate their Terms of Use contracts.

Lastly, the solution lies in ad hoc legislation. The USA and UK are already working on this approach. Without a fundamental understanding of stability and how it can come about, these efforts can run the risk of being too experimental for the good of the stablecoins.