

The protocol can make this process more efficient in the following manner: before selling the reserves, it first looks to see if the supply of Celo Dollars needs to expand. If so, it creates Celo Dollars, exchanges them directly for Celo Euros at the prevailing exchange rate, and retires the Celo Euros. This is functionally equivalent to selling reserves in exchange for Celo Euros, retiring the Celo Euros, and then buying reserves in exchange for Celo Dollars; it just disintermediates the reserves. It only uses the reserves directly if the need for contraction of the Celo Euros is greater than the need for expansion of all the other stablecoins supported by the protocol.

A shared reserve system must come together with a thoughtful method of governing decisions on what new stable coins to introduce, and when to introduce them. If a new stablecoin is introduced that has negative utility to the ecosystem, it can have a marginal negative impact on the stability of the other currencies if the demand for that currency is high enough and volatile enough (for example, a celebrity vanity stablecoin early on), or if the coin decreases aggregate demand for other coins supported by the protocol (for example, the introduction of several duplicative regional currencies in the same region with no differentiating features, causing confusion). For this reason, it is useful to have a governance model that introduces a new stablecoin only if there is a widespread expectation that its introduction would increase the aggregate demand for the family of coins over the long run. We describe this governance model in Section 4.4.2.

It is useful to note that the shared reserve system does not require all new currencies to use the shared reserve. In fact, for local or functional currencies, there are several reasons why it would be useful to not engage in the shared-reserve model; we discuss these in Section 4.4.4. To support these currencies, we also allow for new stabilized assets to be created with their own reserve; we call this partitioned reserves. At a high level, the mechanism works in the same manner as the single stabilized asset case, except that a third party can create the asset and initiate the reserve for that asset. For the partitioned-reserve case, each reserve allocation is initialized at 25% Celo, 25% a local reserve currency, and the remainder the same allocations as the shared reserve.

3.4 Price Discovery and Mechanics of Reserve Asset Purchasing

The Celo protocol is implemented as a fork of Ethereum. The cost of computation in the Celo network is paid in Celo, just as Ether is used to pay for gas on the Ethereum network. Celo stable assets are implemented as the equivalent of ERC20 tokens. One difference between the Celo protocol and Ethereum is that while Ether itself is not compliant with the ERC20 token standard, Celo is. This allows a decentralized exchange, through smart contracts, between Celo stable value assets as well as Celo native asset, much like 0x [21]. This allows the automatic purchasing of reserves and distribution of coins without cross-chain decentralized exchanges.

To determine the price of Celo stable currencies, the protocol will use a Schelling-point scheme amongst stakeholders, with the weight of the a stakeholder’s vote dependent on the amount of Celo at stake. One can imagine further augmenting the Schelling point scheme with price feeds from exchanges, as determined through a governance scheme.

4 Governance and Incentives

A primary incentive mechanism in the Celo protocol is the distribution of block rewards, which are allocated to the various contributors to the system – those who maintain the protocol (by selecting validators, validating transactions, verifying users, and participating in the Schelling-point price discovery mechanism), those who contribute to the robustness of the reserves, those who take on risk in the case that there is a contraction, those who use the protocol as their means of payment, those who invite others to use the protocol, and those who improve the protocol (by participating in governance, and by making technical contributions to the protocol). We describe these below.

4.1 Maintaining the System

The system uses a proof-of-stake mechanism for selecting the validator set and participating in governance decisions. Both validator election and governance decisions are made through a bonded-stake