VALUATION OF CRYPTO CURRENCIES

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This report illustrates the SwissRex fundamental valuation model for Crypto Currencies.

Token Classification

Approximately 5'000 crypto tokens are currently traded on various exchanges. We differentiate them into store of values, currencies and securities.

Token Classification

Token Classification	Traditional	Crypto	Valuation
Stores of Value	Gold	Bitcoin	SwissRex Model, Capped Stock to Flow Model
Currencies	USD	Chainlink	Quantity Model, S-Curve
Securities	Equity	Nexo	Discounted Dividend Model, P/E Ratio

Source: SwissRex AG

Similar to precious metals, we classify Bitcoin as a store of value and calculate its price target using the SwissRex Model (Crypto Research #8). **Crypto Currencies are valued based on the Quantity Model**. For securities, traditional valuation models can be applied, such as the Discounted Dividend Model and P/E Models.

Derivation of Quantity Model for Crypto Currencies

In equilibrium, supply of a crypto currency equals demand :

Supply = Demand

$MV = T$

M : Market capitalisation / token supply
V : Velocity
T : Transaction volume

As a token changes hands several times a year, the token supply must be multiplied by the so-called **velocity**. For example: if each token is used twice a year on average, the velocity is 2.

The **transaction volume** (T) consists of all purchases (or sales) of goods, services and securities paid with the crypto currency. These purchases can be made both directly on the blockchain **(on-chain)** or on second layer solutions **(off-chain)**. For example, many transactions on crypto exchanges run off-chain to increase transaction speed.

$T = T_{on\text{-}chain} + T_{off\text{-}chain}$

Since all on-chain transactions are executed on the blockchain, this data is easy to collect. It is much more difficult to define and aggregate off-chain transactions. Therefore, in a first step, we assume that off-chain and on-chain transactions are in constant proportion to each other:

$T = T_{on\text{-}chain} + T_{off\text{-}chain} = T_{on\text{-}chain} + xT_{on\text{-}chain} = T_{on\text{-}chain}\ (1 + x)$

By dividing the first equation by the factor (1+x) on both sides, we get :

$MV_{on\text{-}chain} = T_{on\text{-}chain}$

$V_{on\text{-}chain} = V / (1+x)$ *on-chain velocity*

The token supply can be further divided into price (P) and number of tokens issued (E):

$MV = PEV = T$

Transforming results in our equation for the price target:

$P = T_{on\text{-}chain} / EV_{on\text{-}chain}$

Model Application

Quantitative analysis

Since the stock market anticipates the future, values must be estimated. In blockchain software, the emission of tokens (E) is often given and thus easy to determine. On the other hand, it is quite difficult to estimate the transaction volume ($T_{on\text{-}chain}$) and the velocity ($V_{on\text{-}chain}$).

In a first step, we forecast the future values by extrapolating the historical trend. The data is then adjusted based on the knowledge of the specific blockchain. Price targets derived from models may vary. However, in this young asset class, the mere knowledge of whether a token is overvalued or undervalued is worth a lot.

Qualitative analysis

The trend in velocity can provide important insights. For example, a rather stable velocity means that a higher transaction volume is directly reflected in a higher price of the token. This could be the case if a discount (e.g. for stock exchange transactions) is linked to the duration of the token ownership. Loyalty is rewarded and the token owners will only be willing to reduce their positions if prices rise sharply. Contrarily, a strongly increasing velocity could be an indication that someone wants to reduce a large position and uses every upward price movement as an opportunity to take profit; for example, if the founders of a token allocated themselves a significant part of the issued tokens for free.

Quantitative and qualitative analysis form the basis for our token selection. As we collect more and more data over time, the valuation models will become more predictive.