Demand For Money And Token Design. A research by Rubiks Hub.

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Assets, liabilities, savings, and investments are associated with the desire to holding money. Demand for money refers to how much asset an individual wishes to hold in form of money, sometimes called, Liquidity Preference. In a simple term, how much do you wish to hold as cash, how much to save, and how much do you wish to hold as digital asset. Note, all are Money!!!

Generally, demand for money is a function of income and prices. It is also a function of interest rate and people's preference to hold money in cash or illiquid assets. For Income; The volume of an individual's income determines the volume of money you'd hold for different purposes. An example is someone working in #web3 while getting paid a $1,000 monthly, he either decide to hold the income in stables, or diversify the whole cash into different digital crypto assets. That is where the interest rate function comes in. You'd diversify your income to earn more of it.

Demand for money is therefore positively related to income. Meaning, the higher your income, the higher your demand for money.

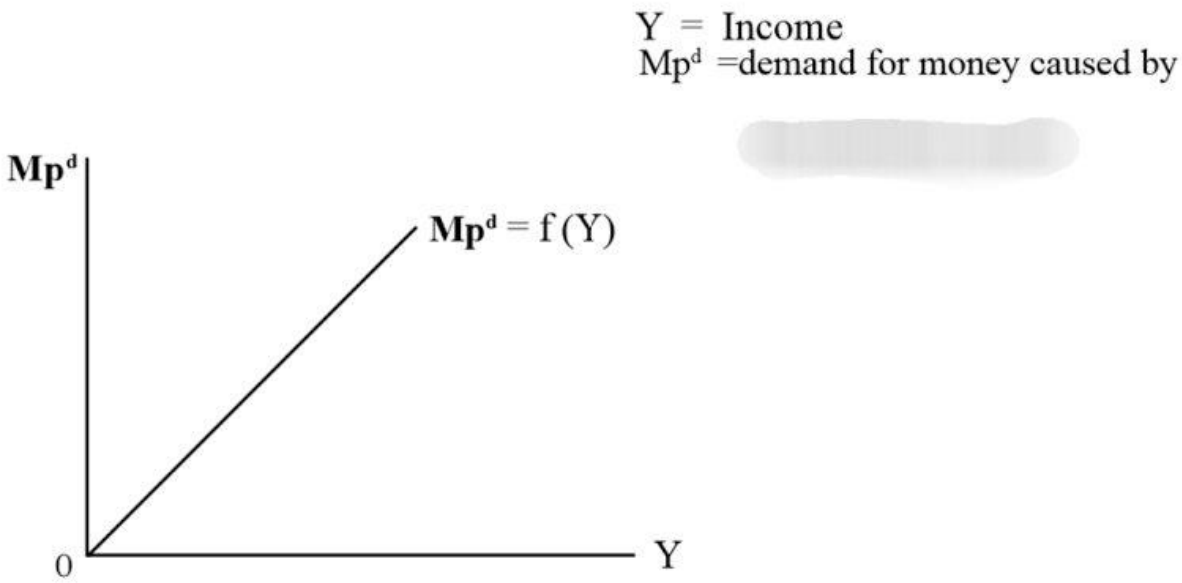
Mathematically; let income =y, we have:

Md (demand for money)= f(Y). {Economic Function}

Md= a+bY. {Mathematical Function}

Md= b1 +b2Y +e {Econometric Function}

The above equations were given the + identity because of the positive relationship between the function. A rise in the independent variable (Y) will raise the value of the dependent variable (Md).



Interest rate as a function of demand for money:

Interest rate tells the level of how high the cost of borrowing is as well as how high the rewards for saving is. To understand this, think of yourself as a liquidity provider to a lending and borrowing protocols. Interest rates are otherwise inversely related to money demand. A rise in interest rate causes for a lower demand for holding money and vice versa. This would be explained in details as we continue.

Let interest rate be r;

Md= f(r)

Md= a-b(r)

Md= b1- b2r + e.

Reasons of Demand for Money.

People demand for money for different purposes and different motives. There are majorly 3 types and reasons for demanding money:

1. Transactionary Demand For Money

2. Precautionary Demand For Money.

3. Speculative Demand For Money.

- Transaction Demand: This is a situation whereby people hold money for transactionary purposes. That is, to buy goods as related to income. As you get your monthly income, you specify a percentage for transactionary purposes. Md= f(y) – Income based purpose.
- Precautionary Demand: This goes as the title, precautionary. That is money is held for safety purposes. It is very important in this market period, as there is a saying that "Liquidity Preservation" is very key, no matter what you do, have an income reserve. Md= f(y)
- Speculative Demand: This is the third motive for holding money. As the name depicts, it is for you to speculate the market and decide to your investment motive. As explained by Keynes, it is the choice of holding cash and buying assets (digital or not). Deals with interest rates.

As said earlier, interest rate is associated with the cost of borrowing and the cost of savings.

- To a borrower, a rise in interest rate is unfavourable to him.
- To a saver, a rise in interest rate is favourable.
- For bonds, they are mostly at a fixed interest rate.

Therefore, a fall in interest rate speculation would appreciate the value of the bond. This is because, the cost if borrowing will fall, and the cost of holding bonds rise. That is, people would borrow to buy more bonds to earn more APYs which increase the demand for bonds. For crypto assets, it depends on what aspect of investment you do. If to provide liquidity to a protocol is attached to a juicy APY,

the demand for holding money is reduced based on speculation. This would at the same time increase the demand for the asset while the price rises. Thus, Md= M1y +M2r.

Money demand is thus defined as a function of income and interest rate. Transactionary and Precautionary are based on income while speculative Demand is based on market predictions. Which is accessed at the contending formula above.

Why Token Design?

For users of a Protocol, transactionary and Precautionary demand for money is very much necessary before they decide on the speculative aspect of money demand. However, a project builder must work on the speculative demand to encourage asset holdings. This is very much necessary when designing tokens. The design must include a favourable demand mechanism and a supply gear to create equilibrium. This is because Md=Ms (money demand= money supply) at equilibrium. That is why I explained this in my article. The aspect of Speculation and Utility must be clearly defined by project founders. It helps to actualize what reward system is needed to attract demand and at the same time, what mechanism are needed to balance supply. This goes for both inflationary and deflationary tokens.

Taking a look at Olympus DAO, they created an inflationary token with no hard cap such that the token can be minted and emitted at any time. They then created a two user mechanisms which served as their utility.

1. Allowed users buy $OHM from their Treasury at a discount. To explain further, users buy $OHM as bonds on a condition of 5 days delivery. For this sale, the treasury accepts it's token for payment, because $OHM was a reserve currency backed by $1 floor price worth of assets in the treasury. With this, demand is driven on the DEX. The treasury itself generates income from the Dex trading volume. However, to stimulate further demand, they introduced the second mechanism.
2. The utility of holding $OHM is to stake at an insane APY of not less than 7000% which was not sustainable. They introduced this mechanism given that, the treasury has the right to mint more $OHM without endangering it's floor price, allowing supply to create its own demand. However, like I formerly explained, Ms=MD, equilibrium is very necessary. In the short run, they survived. With the token moving right from launch at $8 to a ATH of $1,415 (176X). However, unsustainable yield and unbalanced demand and supply mechanism caused a 99.3% dump due to its speculative demand structure.

You can read more about this topic in my thread while you match up images for evidences.