

# White paper Defi empowered mobile wallet built on blockchain

# YOUR MOBILE WALLET FROM DAILY PAYMENTS TO THE SMARTEST INVESTMENTS BUILT ON DEFI BLOCKCHAIN.

WHITE PAPER

V1.1\_2021-08-18

This is the White Paper on the mobile wallet from the daily payments to the smartest investments for all your financial needs based on the DeFi - umbrella for a variety of applications and projects in the public blockchain space geared toward disrupting the traditional finance world.

Peermoon mobile wallet is a one-click solution to reach all financial services you may require based on the Smart contracts:

- make payments,
- get a virtual card,
- invest in loans and commodities,
- invest in ETFs, stocks, and Crypto.

The product is available at <u>www.peermoon.io</u>.

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#### PEERMOON CRYPTO WALLET

#### NON-CUSTODIAL DeFi WALLET

For DeFi to be successful, the gateways for interacting with web 3 must be intuitive, secure, and accessible while maintaining the core ethos of "being your own bank".

Over the past few years, we've seen drastic improvements to wallets and other asset management tools, allowing investors and users to safely and easily access the next generation of financial technology.

The core components of most DeFi wallets include:

- Non-Custodial Users can send and transfer funds knowing they are the only one who has access to those funds.
- Key-based Underneath the hood, all DeFi wallets have a unique key pair. This is different from centralized wallets as users are responsible for the safekeeping of their private keys, often introduced through a 12-word seed phrase.
- Accessible Virtually all non-custodial wallets can handle a suite of assets, with Ethereum-specific DeFi wallets allowing users to deposit ETH in tandem with stablecoins like Dai, ERC20 tokens like KNC, and ERC721 tokens like Axies.
- Compatible As stated above, virtually all DeFi wallets are accessed by connecting a web3 wallet. Mobile wallets have begun to integrate dApps browsers to make it easy to connect with DeFi applications without having to ever leave the app.

With the Peermoon Wallet, users have access to a wide range of decentralized innovations, including buying and storing Bitcoin, Ether, ERC-20 tokens, and other crypto assets, collecting rare digital collectibles, and accessing emerging web3 applications.

#### SUPPORTED ASSETS

Peermoon Wallet supports an expansive list of digital assets. Peermoon Wallet in the first phase will allow users to store, send, and receive the following assets:

- Bitcoin (BTC)
- Ether (ETH)
- Bitcoin Cash (BCH)
- Ether Classic (ETC)
- Litecoin (LTC)
- Ripple (XRP)
- Stellar Lumens (XLM)
- Ethereum-based ERC-20 tokens
- Ethereum-based ERC-721 tokens

#### **KEY POINTS OF DeFi WALLET**

#### What makes a DeFi wallet different from a regular wallet like Binance?

With DeFi wallets, there is no need to complete KYC or provide any background information. While there are largely no fiat onramps when using DeFi wallets, they come with the flexibility of integrating across a wide variety of applications in the DeFi ecosystem, rather than being fragmented to only one exchange like most legacy wallets.

#### Are DeFi wallets safe to use?

DeFi is debatably the safest option on the market. The catch is that you are entirely in control of your own destiny. If you lose your seed phrase, in many cases there is no customer support to be able to "reset" your password.

#### What are the daily deposit limits on DeFi wallets?

DeFi wallets have no deposit limits. While some wallets like Argent may have daily limits, there are largely no restrictions to the amount of capital that can flow in and out of a DeFi wallet on any given day.

#### What kind of cryptocurrencies do DeFi wallets support?

Most DeFi wallets are Ethereum-native, meaning they support Ether, ERC20 tokens, and ERC721 tokens. This also includes protocol-specific tokens on lending platforms like Compound (cTokens), Aave (aTokens), and Uniswap LP tokens. Similarly, DeFi wallets can hold more specialized assets like Set Protocol Sets and Synthetix Synths.

#### TOTAL VALUE OF ASSETS IN DeFi

If you've been following crypto over the past years, you've likely seen these charts measuring the amount of value locked in DeFi. Since most applications require capital to be deposited, often in the form of loan collateral or liquidity in a trading pool, it has been used as the de facto metric to show the growth of decentralized finance. Recently, the total value locked surpassed the \$12.5 billion mark, a milestone that was as celebrated as the \$60k mark for the price of bitcoin.







#### TOP DeFi TOKENS BY MARKET CAPITALIZATION

The DeFi crypto market cap is \$135.74B as of 2021-10-17 date.

Top 5 Defi Tokens by market cap as of 2021-10-17 date.

	#•	Name	Price	24h %	7d %	Market Cap 🚺	Volume(24h) 🗊	Circulating Supply 👔	Last 7 Days
습	11	3 Uniswap UNI	\$26.40	-2.42%	<b>-</b> 5.53%	\$16,159,336,626	\$354,349,415 13,412,407 UNI	611,643,724 UNI	mound
습	12	S Terra LUNA	\$37.02	-0.09%	-10.40%	\$14,905,065,483	\$452,255,190 12,195,136 LUNA	401,917,552 LUNA	Martin
	13	Wrapped Bitcoin WBTC	\$60,965.86	<b>~</b> 0.08%	-10.13%	\$13,152,428,174	\$253,140,672 4,153 WBTC	215,765 WBTC	m
☆	16	🕗 Avalanche AVAX	\$56.53	<del>•</del> 4.15%	-4.70%	\$12,450,017,447	\$333,997,577 5,909,645 AVAX	3 220,286,577 AVAX	your
습	17	O Chainlink LINK	\$26.73	<b>*</b> 3.96%	<b>•</b> 0.53%	\$12,298,883,235	\$687,743,856 25,695,412 LINK	1459,509,554 LINK	mont

#### **CRYPTO BY MARKET CAPITALIZATION**

The global crypto market cap is \$2.47T as of 2021-10-17 date.

Top 5 Cryptocurrencies by market cap as of 2021-10-17 date.

	#	Name	Price	24h %	7d %	- Market Cap 🔞	Volume(24h) 🔞	Circulating Supply 🚯	Last 7 Days
습	1	Bitcoin BTC Buy	\$60,671.95	<del>•</del> 0.42%	<b>*</b> 9.73%	\$1,146,155,147,918	\$25,514,802,192 419,546 BTC	18,846,512 BTC	mont
습	2	Ethereum ETH Buy	\$3,792.08	<b>∗</b> 1.78%	<b>-</b> 7.57%	\$448,582,265,061	\$13,492,253,905 3,548,144 ETH	117,966,538 ETH	mon
☆	3	Binance Coin BNB Buy	\$465.03	-0.24%	<b>-</b> 12.06%	\$78,418,326,060	\$1,442,974,493 3,093,887 BNB	168,137,036 BNB	man
☆	4	Cardano ADA	\$2.15	<b>-</b> 1.70%	<b>*</b> 3.78%	\$70,946,153,516	<b>\$1,755,163,730</b> 814,037,557 ADA	32,904,527,669 ADA	a Mar May
☆	5	Tether USDT Buy	\$0.9998	+0.03%	-0.01%	\$69,022,449,124	<b>\$50,698,858,330</b> 50,708,863,272 USDT	69,036,070,054 USDT	Much man mar

#### A FUTURE WHERE DEFI AND CBDCS CAN WORK TOGETHER

In coexistence with mutual benefits, decentralized finance and central bank digital currencies will finally make money universally available worldwide.

Decentralized finance (DeFi) is changing the way that people all over the world think about money faster than any previous financial revolution. Banks, which have monopolized the way we've accessed money since antiquity, are finally seeing their status being challenged. Now, it's DeFi which is starting to provide an alternative that could turn the economic landscape on its head and democratize access to finance.

This seismic shift in power away from governments and banks and towards real people is long overdue, particularly in developing nations where DeFi is already emerging as a tool for remittances and small loans. Financial inclusion is another significant advantage that DeFi can deliver, particularly when 1.7 billion adults remain unbanked.

The growth of the DeFi space is staggering. By taking concepts from traditional finance and turning these into transparent protocols through smart contracts, DeFi provides a trustless ecosystem that delivers anything from insurance to loans to savings accounts. The appeal for DeFi is evident, with the total value of assets held in DeFi financial products nearly topping \$175 billion.

Yet, with DeFi on the rise and governments and banks not wanting to lose control of the monetary system, they are turning their attention to issuing digital currencies themselves. Central bank digital currencies (CBDCs) are seen as a way of maintaining control over the monetary system while giving users faster and cheaper transactions. If we fast forward to the year 2030, what elements of decentralization can we expect to see in our everyday lives?

#### **ETF MARKET**

#### **BLOCKCHAIN ETFs**

ETFs, or exchange-traded funds, are baskets of investments that can include stocks, bonds, or even other commodities. Blockchain ETFs are ETFs that include shares of companies known to have invested in or incorporated blockchain technology into their business. And just like any ETF, investors should consider what companies are included, and what that means for your overall portfolio.

You can minimize your risk by investing in an ETF that holds blockchain-involved companies, but you still shouldn't consider these funds to be necessarily low-risk. The biggest thing to understand when investing in blockchain ETFs is what holdings are actually in the fund. The term blockchain carries a wide-ranging definition these days.

Because of that wide-ranging definition, blockchain ETFs can vary significantly in terms of their risk. It's crucial to understand what you are actually putting your money into with the fund.

Peermoon recommends looking for a fund that holds large-cap, well-known companies like Square, Microsoft, IBM, or Visa — all companies that could be included in a blockchain ETF based on their incorporation of the technology into their business models. You should also pay attention to any additional costs associated with investing in the ETF as they might be more costly than traditional ETFs depending on what they hold.

Many traditional ETFs have low expense ratios, but specialized versions can often carry an expense ratio closer to 1%, which experts agree is pretty pricey. While you might decide extra costs like this are worth it for a small, specialized portion of your portfolio, experts agree the best way to invest for long-term wealth is via index funds with expense ratios of .2% or less.

#### **Examples of Blockchain ETFs**

Blockchain ETFs can include well-known companies like Paypal or IBM, as well as lesser-known startups like Galaxy Digital. With any ETF, look for the lowest expense ratio you can find. You can also compare it to other ETFs, such as an S&P 500 fund, using etf.com's\_comparison tool.

Here are the three biggest blockchain ETFs by total assets:

#### **BLOK (Amplify Transformational Data Sharing ETF)**

- Largest blockchain ETF by total assets
- Top holdings: PayPal, MicroStrategy, Square
- 3-year return: 162.43%
- Expense ratio: .71%

#### BLCN (Siren Nasdaq NexGen Economy ETF)

- Top holdings: Coinbase, Accenture, Square
- 3-year return: 108.64%
- Expense ratio: .68%

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#### LEGR (First Trust Indxx Innovative Transaction & Process ETF)

- Top holdings: NVIDIA, Oracle, Fujitsu
- 3-year return: 53.50%
- Expense ratio: .65%

### **GROWING GLOBAL OPPORTUNITY**

According to Gartner Group, Blockchain is estimated to have delivered \$4 billion in business value-add or technology innovation in 2017, with that growing to \$21 billion by 2020, \$176 billion in 2025, and \$3.1 trillion by 2030.<sup>1</sup>



COMPOUND

ANNUAL GROWTH

#### **Trade ETFs on Peermoon Wallet**

ETFs offer several advantages that have increased their popularity among day traders:

Spread out your potential risks or rewards – you can trade an entire market as though it were a single stock or commodity.

Find additional trading opportunities – ETFs are designed to give you exposure to diverse markets/sectors within capital markets. This means you can diversify your portfolio without the need for a large amount of capital.

Enjoy tight spreads with zero commissions for making a deposit and opening/closing a trade. In addition, gain unlimited access to real-time ETF quotes charts and quotes with the Peermoon Wallet.

#### Largest ETFs by market cap globally 2021

As of September 30, 2021, State Street's SPDR S&P 500 ETF Trust was the highest valued exchange-traded fund (ETF) globally, with a market capitalization of about 388.15 billion U.S. dollars. The market capitalization of an ETF is calculated by multiplying the number of shares issued in the fund by the share price. This ETF is also the largest ETF by assets under management - although, at over 1 trillion U.S. dollars, the Vanguard Total Stock Market Index Fund is overall the largest investment fund by AUM. However, the Vanguard fund is different because shares in the fund are sold as a variety of different products, some of which are structured as ETFs (like the third-largest fund listed in this statistic), while others are structured as traditional mutual funds.

#### WHAT ARE ETFS?

ETFs are similar to mutual funds in that they consist of a pool of investors' funds that are managed by an independent third party for common financial investment. However, ETFs differ through how shares in the fund are bought and sold through a stock exchange, rather than directly from the fund manager. This provides the advantages of generally lower prices (as the transaction costs are paid by the exchange operator rather than the fund manager), and the possibility of intraday trading (as shares in a traditional mutual fund can only be bought and sold after the close of daily trading. The total assets managed by ETFs globally are almost six times lower than that of mutual funds, although the gap in AUM between ETFs and mutual funds in the United States is much lower, at just over three times less.

#### Who are the largest ETF providers?

The largest provider of ETFs globally is Blackrock, the world's largest asset management company. As of mid-2021 the company had more than two trillion U.S. dollars of assets under management in exchange-traded funds in the U.S. alone, while Blackrock's total assets under management across all products topped 9.5 trillion U.S. dollars. Rounding out the top three providers of ETFs are fellow U.S asset managers Vanguard and State Street.



#### **STOCKS MARKET**

#### Stocks on blockchain

Buying stocks isn't as complicated as it seems, but you'll need to do some research — and learn the lingo — before you make your first investment.

To buy stocks, you'll first need a brokerage account, which you can set up in about 5 minutes. Then, once you've added money to the account, you can follow the steps below to find, select and invest in individual companies.

#### 1. Select an online stockbroker

The easiest way to buy stocks is through an online stockbroker – Peermoon Wallet. After opening and funding your account, you can buy stocks in a matter of minutes. Other options include using a full-service stockbroker or buying stock directly from the company.

Opening an online brokerage account is as easy as setting up a bank account: You complete an account application, provide proof of identification, and choose whether you want to fund the account by mailing a check or transferring funds electronically.

#### 2. Research the stocks you want to buy

Once you've set up and funded your brokerage account, it's time to dive into the business of picking stocks. A good place to start is by researching companies you already know from your experiences as a consumer.

Don't let the deluge of data and real-time market gyrations overwhelm you as you conduct your research. Keep the objective simple: You're looking for companies of which you want to become a part-owner.

Warren Buffett famously said, "Buy into a company because you want to own it, not because you want the stock to go up." He's done pretty well for himself by following that rule.

Once you've identified these companies, it's time to do a little research. Start with the company's annual report — specifically management's annual letter to shareholders. The letter will give you a general narrative of what's happening with the business and provide context for the numbers in the report.

After that, most of the information and analytical tools that you need to evaluate the business will be available on your broker's website, such as SEC filings, conference call transcripts, quarterly earnings updates, and recent news. Most online brokers also provide tutorials on how to use their tools and even basic seminars on how to pick stocks.

#### 3. Decide how many shares to buy

You should feel absolutely no pressure to buy a certain number of shares or fill your entire portfolio with stock all at once. Consider starting small — step by step — by purchasing just a

single share to get a feel for what it's like to own individual stocks and whether you have the fortitude to ride through the rough patches with minimal sleep loss. You can add to your position over time as you master the shareholder swagger.

New stock investors might also want to consider fractional shares, a relatively new offering from online brokers that allows you to buy a portion of a stock rather than the full share. What that means is you can get into pricey stocks — companies like Google and Amazon that are known for their four-figure share prices — with a much smaller investment.

Many brokerages offer a tool that converts dollar amounts to shares, too. This can be helpful if you have a set amount you'd like to invest — say, \$500 — and want to know how many shares that amount could buy.

#### 4. Choose your stock order type

Don't be put off by all those numbers and nonsensical word combinations on your broker's online order page. Refer to this cheat sheet of basic stock-trading terms:

Term	Definition
Ask	For buyers: The price that sellers are willing to accept for the stock.
Bid	For sellers: The price that buyers are willing to pay for the stock.
Spread	The difference between the highest bid price and the lowest ask price.
Market order	A request to buy or sell a stock ASAP at the best available price.
Limit order	A request to buy or sell a stock only at a specific price or better.
Stop (or stop- loss) order	Once a stock reaches a certain price, the "stop price" or "stop level," a market order is executed and the entire order is filled at the prevailing price.
Stop-limit order	When the stop price is reached, the trade turns into a limit order and is filled up to the point where specified price limits can be met.

There are a lot more fancy trading moves and complex order types. Don't bother right now — or maybe ever. Investors have built successful careers buying stocks solely with two order types: market orders and limit orders.

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#### **Market orders**

With a market order, you're indicating that you'll buy or sell the stock at the best available current market price. Because a market order puts no price parameters on the trade, your order will be executed immediately and fully filled, unless you're trying to buy a million shares and attempt a takeover coup.

Don't be surprised if the price you pay — or receive if you're selling — is not the exact price you were quoted just seconds before. Bid and ask prices fluctuate constantly throughout the day.

That's why a market order is best used when buying stocks that don't experience wide price swings — large, steady blue-chip stocks as opposed to smaller, more volatile companies.

#### Good to know:

A market order is best for buy-and-hold investors, for whom small differences in price are less important than ensuring that the trade is fully executed. If you place a market order trade "after hours," when the markets have closed for the day, your order will be placed at the prevailing price when the exchanges next open for trading.

Check your broker's trade execution disclaimer. Some low-cost brokers bundle all customer trade requests to execute all at once at the prevailing price, either at the end of the trading day or a specific time or day of the week.

#### **Limit orders**

A limit order gives you more control over the price at which your trade is executed. If XYZ stock is trading at \$100 a share and you think a \$95 per-share price is more in line with how you value the company, your limit order tells your broker to hold tight and execute your order only when the ask price drops to that level. On the selling side, a limit order tells your broker to part with the shares once the bid rises to the level you set.

Limit orders are a good tool for investors buying and selling smaller company stocks, which tend to experience wider spreads, depending on investor activity. They're also good for investing during periods of short-term stock market volatility or when stock price is more important than order fulfillment.

There are additional conditions you can place on a limit order to control how long the order will remain open. An "all or none" (AON) order will be executed only when all the shares you wish to trade are available at your price limit. A "good for day" (GFD) order will expire at the end of the trading day, even if the order has not been fully filled. A "good till canceled" (GTC) order remains in play until the customer pulls the plug or the order expires; that's anywhere from 60 to 120 days or more.

#### Good to know:

While a limit order guarantees the price you'll get if the order is executed, there's no guarantee

that the order will be filled fully, partially, or even at all. Limit orders are placed on a first-come, first-served basis, and only after market orders are filled, and only if the stock stays within your set parameters long enough for the broker to execute the trade.

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Limit orders can cost investors more in commissions than market orders. A limit order that can't be executed in full at one time or during a single trading day may continue to be filled over subsequent days, with transaction costs charged each day a trade is made. If the stock never reaches the level of your limit order by the time it expires, the trade will not be executed.

#### 5. Optimize your stock portfolio

We hope your first stock purchase marks the beginning of a lifelong journey of successful investing. But if things turn difficult, remember that every investor — even Warren Buffett — goes through rough patches. The key to coming out ahead in the long term is to keep your perspective and concentrate on the things that you can control. Market gyrations aren't among them. But there are a few things in your control.

Once you're familiar with the stock purchasing process, take the time to dig into other areas of the investment world. How will mutual funds play a part in your investment story?

#### TOKENIZED STOCKS ON BLOCKCHAIN

Tokenized stocks are tokenized derivatives that represent traditional securities, particularly shares in publicly firms traded on regulated exchanges such as Tesla, Apple and Facebook or ETFs like SPDR S&P 500. The key benefits of tokenized stocks include fractional ownership of traditional securities, 24/7 access to markets, and greater liquidity to name a few. These digital assets are backed 1:1 to traditional stocks, entitling holders to the same economic benefits of owning the underlying stock.

Tokenized stocks are a tokenization of a digital total return swap contract ("TRS") (similar to contracts for differences). The Tokenized stocks value is based on and collateralized with the underlying asset, a traditional security (typically a publicly traded equity) and the value of the digital asset is determined by the value of the traditional security. For example, they are collateralized by an equivalent notional amount of the traditional security (i.e., \$100 of the debt derivative would be collateralized with \$100 of the traditional security). This allows Tokenized stocks to mirror the economic performance of the applicable reference traditional securities.

Tokenized stocks may also represent innovative baskets or indexes of traditional securities as well as traditional securities plus cryptocurrencies (for example, the S&P 500 AND BTC). Tokenized Equities may also include leverage as well as long or short exposure.

You trade tokenized stocks the same way you trade other markets. Fees, API calls, and GUI instructions are all the same. Customers can now purchase these shares with cryptocurrencies or fiat on the Peermoon Wallet, allowing customers to build their wealth and grow their investments by lowering the barrier to entry for blue chip stocks and other traditional securities.

#### Largest Companies by Market Cap

Total market cap of largest companies: \$95.494 T as of 2021-10-17.

Top 10 largest companies by market cap:

Rank	+	Nam	e	+	Market Cap 🕴	Price 🔶	Today	Price (30 days)	Country
	1	Ú	Apple		\$2.394 T	\$144.84	0.75%	m	us USA
	2		Microsoft		\$2.286 T	\$304.21	0.48%	$\sim$	us USA
	3	*	Saudi Aramco		\$1.987 T	\$9.95	0.81%		sa S. Arabia
	4	G	Alphabet (Google)		\$1.887 T	\$2,834	0.19%	$\sim$	us USA
	5	a	Amazon AMZN		\$1.726 T	\$3,409	3.31%	$\sim$	us USA
	6	<b>()</b>	Facebook FB		\$915.64 B	\$324.76	-1.15%	m	us USA
	7	T	Tesla TSLA		\$844.52 B	\$843.03	3.02%	~~~	us USA
	8	B	Berkshire Hathaway		\$643.50 B	\$427,701	0.96%	mm	us USA
	9	t	Tencent		\$613.99 B	\$63.99	1.80%	Amm	см China
	10	tsijc	TSMC TSM		\$595.66 B	\$114.86	2.04%	$\sim$	тw Taiwan

#### COMMODITIES TRADING ON BLOCKCHAIN

When you buy an ear of corn or a bag of wheat flour at a supermarket, you probably don't pay much attention to where they were grown or milled. That's because both corn and flour are commodities.

Commodity goods are raw materials. They're interchangeable and can be bought and sold in bulk. Often these raw materials are the building blocks of manufactured products.

#### Types of commodities

Investors break down commodities into two categories: hard and soft. Hard commodities require mining or drilling to find. Soft commodities are grown or ranched. There are four main types of commodities.

1. Agricultural products: Soft commodities. They include crops like coffee, corn, wheat, soybeans, cotton, and lumber.

2. Livestock and meat: Soft commodities. They include live cattle, beef, pork bellies, and milk.

3. Energy products: Hard commodities. They include crude oil, natural gas unleaded gasoline, propane, ethanol, and coal.

4. Metals: Hard commodities. They include precious metals, like gold and silver, and industrial metals, like copper, aluminum, and palladium.

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#### What is commodities trading?

Commodities trading is the buying and selling of these raw materials. Sometimes it involves the physical trading of goods. But more often it happens through futures contracts, where you agree to buy or sell a commodity for a certain price at a specified date.

With futures contracts, commodities traders bet on how the commodity's price will move. When you think the price will go up, you'd buy futures, or go long. When you think the price will drop, you'd sell futures, or go short. While futures contracts can be used to speculate about price changes, often they're used by producers or major industrial consumers as a hedge against price increases or decreases, as we'll discuss shortly.

Futures contracts are typically traded on commodity exchanges. The two largest exchanges in the U.S. are the Chicago Mercantile Exchange and the New York Mercantile Exchange.

#### Commodities vs. the stock market

Commodity prices often fluctuate wildly because of changes in supply and demand. For example, when there's a big harvest of a certain crop, the price usually goes down. When there's a drought, prices often rise because of fears that the supply will drop. Similarly, during cold weather, demand for natural gas for heating purposes rises, causing prices to spike, too. But a warm spell during winter can depress prices.

Still, some commodities are relatively stable, such as gold, which also serves as a reserve asset for central banks. But in general, commodities are significantly more volatile than stocks or bonds.

Some investors seek out commodities for diversification. Commodities usually have a negative correlation (their prices move in different directions) or a low correlation (their prices don't move in tandem with each other) with equities. For example, oil and stocks tend to have a negative correlation. That means rising oil prices have traditionally been linked to a weaker stock market, and the stock market is often stronger when oil prices are low.

For that reason, commodities are a popular stock market hedge. Many investors flock to gold during a bear market, for example. Commodities are also a common inflation hedge. High inflation often causes commodity prices to soar, whereas stocks and bonds perform better when inflation is lower.

#### Should you trade commodities?

Commodity trading is a high-risk, high-reward endeavor. It can be an effective way to hedge your portfolio against a bear market or inflation. But you should consider it only if you have a strong understanding of the supply-and-demand dynamics of the commodity market. That includes knowledge of historical price trends and what's happening in real time. If you're getting started, you can reduce your risk by limiting your use of margin.

Much of commodity trading amounts to speculation, not investing. Unpredictable factors like the weather, disease, and natural disasters can have huge impacts on commodity prices in the

short term. If you're looking to invest in a commodity for the long term, commodity stocks, mutual funds, and ETFs are a better option for most individuals.

Commodities trading is as old as human civilization itself, dating back to 4,500 BC. At that time, trades were based on livestock and crop harvests, until classical civilizations agreed on a standardized unit of value on precious metals like gold and silver. Commodity trading was an essential business, as a result of its scale and complexity, centralized exchanges appeared to facilitate and manage the trading process, such as the Amsterdam Stock Exchange in the 16th century, and the Chicago Board of Trade in 1864.

Although the markets have evolved to become more sophisticated and complex, these centralized financial exchanges still control a large proportion of commodities and derivatives trading. Trading via exchange offers benefits, but it also has some drawbacks. For this reason, many dealers sell commodities directly to customers or other dealers in over-the-counter (OTC) markets. Thus, exchanges and over-the-counter consist of the two basic ways to organize financial markets. However, both of them have advantages and disadvantages. Now, this gap can be bridged by blockchain technology.

#### **EXCHANGE TRADING VS. OTC MARKETS**

#### Transparency

Exchanges are regulated, providing traders and investors transparency of bid and ask prices for commodities, derivatives, and other securities across financial markets. Using an exchange means playing on a level field, where anyone can buy low or sell high, providing they follow the rules of the game.

OTC trading is a direct trade, not performed using an exchange. In an OTC market, dealers are free to start bidding wars and negotiate higher sell prices between different buyers who don't know the prices offered to others. As deals are done offline, the prices are not public. Thus, in OTC market, it is hard for market participants to make benchmarks. Without price transparency, a market can quickly become illiquid once prices start to fluctuate and dealers become fearful of losses. The IMF counts this as a contributing factor in the global financial crisis of 2008, underlining the extent to which the global OTC markets rely on trust.

#### **Counterparty Risk**

Exchanges are centralized places where buyers and sellers make transactions with exchanges instead of with each other directly. To a certain extent, exchanges reduce counterparty risks. However, OTC market participants are exposed to the risks that one cannot deliver the goods at the agreed time or on the agreed terms.

#### **Transaction Costs**

Of course, exchange trading also comes with drawbacks. One of the reasons that OTC trading continues to exist is because of the fees and friction associated with trade finance and settlements using centralized exchanges. The fees charged by brokers make smaller trades less viable, forcing smaller dealers into OTC trades and favoring larger institutions who can leverage economies of scale.

Furthermore, physical global commodities trading comes with specific friction points. Imports and exports are subject to rigorous documentation requirements, much of which is still paperbased. Physically settled trades mean that commodities have to be moved around different locations, requiring physical inspection each time they change hands.

#### Liquidity

In exchanges, large volumes are traded between various parties under contract terms that are generally standardized. In OTC markets, smaller suppliers can sell through brokers or find buyers themselves. The result is that the bigger players have more liquidity in the market and usually have more price information to benchmark. On the other hand, smaller players have much lower liquidity and limited market information.

#### What Tokenization Brings to Global Commodities Trading

In a previous article, we outlined how tokenization of assets can change the way we do business in general. Tokenization in global commodities trading combines the benefits of exchange and OTC trading, while eliminating the disadvantages of both.

#### **Decentralizing Commodities Exchange Technology**

Blockchain can generate digital tokens backed by units of real-world commodities. The Royal Mint in the UK is already using blockchain digital tokens for trading real gold which is held in a central repository.

In the world of global commodities trading, these digital tokens could be used to assign ownership of commodities and trade between dealers in different parts of the world. As all information is recorded on the blockchain, and only private key holders can authorize transactions, a lot of the repetitions of goods inspections and paperwork can be eliminated. With blockchain, a transaction can be secured through an atomic swap and paper documentation can be replaced by blockchain records. This brings the combined efficiencies of reducing costs and saving time.

Blockchain can also replicate the transparency and security of a centralized exchange, while still keeping fees low and reducing friction. Peer-to-peer (P2P) marketplaces on blockchain allow a dealer to sell directly to other dealers or customers in an OTC arrangement. Unlike a centralized exchange, no brokers or other middlemen are needed in a P2P trade. Therefore, third-party commissions are greatly reduced, and settlements can be made virtually in real-time.

These marketplaces can also be set up to display the bid and ask prices to all participants, thereby creating transparency in OTC trades akin to using centralized exchanges. Because blockchain is a decentralized technology without the stringent requirement of listing, smaller dealers can benefit from the transparency.

Smaller dealers have an additional advantage in using a decentralized blockchain exchange platform. Because asset-backed tokens offer the opportunity for fractional ownership, smaller

dealers could enjoy fractional participation in larger, and potentially more lucrative deals. Smaller dealers could therefore join forces to make bigger trades, increasing their individual potential for liquidity and bringing greater liquidity to the overall market.

#### AUTOMATING SETTLEMENTS WITH SMART CONTRACTS

Smart contracts on the blockchain can also automate the settlement process in commodities trades. This applies whether the commodities being traded are cash or physically settled, or if derivatives such as futures or forward contracts are used.

Smart contracts allow for full automation of tokenized cash-settled derivatives, as the settlement funds can be held in escrow until the contract's end date, then released automatically. Even in a physically settled trade, participants can use blockchain-based key signatures to confirm the delivery of goods. Furthermore, all parties involved in the movement of the commodity can track the whereabouts of the assets in real-time. The traditional letter of credits and services from banks are no longer needed, saving significant costs, and reducing friction through the implementation of atomic swaps on blockchain.

Asset-backed tokens on a blockchain offer real potential in the world of trade finance, to increase transparency and provide the possibility for trading without putting trust on an intermediary. Smart contracts have the potential to reduce counterparty risk, thereby providing more liquidity and reducing costs in a commodity or derivatives trade. Asset-backed tokens can also enable anyone to participate in a large volume trade through fractional ownership.

Commodities markets are the oldest forms of trade finance, but their development has been more evolutionary than revolutionary, at least until now. Asset-backed tokens and other features of blockchain have the potential to completely transform global commodities trading. For commodities dealers and customers, as well as the broader global economy, blockchain is poised to deliver unprecedented value.

#### MARKET CAP OF COMMODITIES

Chart of the Week

## **BIG OIL**

The oil market is bigger than all raw metal markets combined



#### **MARKET OVERVIEW**

#### SMALL AND MEDIUM ENTERPRISES FINANCE

Small and Medium Enterprises (SMEs) play a major role in most economies, particularly in developing countries. SMEs account for the majority of businesses worldwide and are important contributors to job creation and global economic development. They represent about 90% of businesses and more than 50% of employment worldwide. Formal SMEs contribute up to 40% of national income (GDP) in emerging economies. These numbers are significantly higher when informal SMEs are included. According to our estimates, 600 million jobs will be needed by 2030 to absorb the growing global workforce, which makes SME development a high priority for many governments around the world. In emerging markets, most formal jobs are generated by SMEs, which create 7 out of 10 jobs. However, access to finance is a key constraint to SME growth, it is the second most cited obstacle facing SMEs to grow their businesses in emerging markets and developing countries.



SMEs are less likely to be able to obtain bank loans than large firms; instead, they rely on internal funds, or cash from friends and family, to launch and initially run their enterprises. The International Finance Corporation (IFC) estimates that 65 million firms, or 40% of formal micro, small and medium enterprises (MSMEs) in developing countries, have an unmet financing need of \$5.2 trillion every year, which is equivalent to 1.4 times the current level of the global MSME lending.

East Asia and Pacific accounts for the largest share (46%) of the total global finance gap and is followed by Latin America and the Caribbean (23%) and Europe and Central Asia (15%). The gap volume varies considerably region to region. Latin America and the Caribbean and the Middle East and North Africa regions have the highest proportion of the finance gap compared to potential demand, measured at 87% and 88%, respectively. About half of formal SMEs don't have access to formal credit. The financing gap is even larger when micro and informal enterprises are taken into account.

Source: https://www.worldbank.org/en/topic/smefinance

#### How decentralized finance will transform business financial services

Decentralized finance had a resurgence last summer. Cryptocurrencies like bitcoin and ether are now becoming more widely accepted for payments and USD Coin (USDC) has made significant progress towards being an asset that will maintain its value without future depreciation.

At the same time, the blockchain technology that underlies cryptocurrency, and its supporting financial infrastructure are on their way to offering a system of financial rails in parallel to – and connected with – traditional financial infrastructure.

Both Coinbase and Compound Treasury have released USDC-based loans that guarantee at least a 4% yield (far higher than traditional products of a similar risk), and smaller platforms are offering cross-border access to capital with rates that are far more variable but would be unavailable otherwise. So far, this growth in loan products has come from the retail sector: individuals holding and trading crypto-assets for personal use. Banks such as Morgan Stanley and US Bank now offer crypto-products for their wealth management clients. But what about businesses?

Since its inception, DeFi – literally decentralized finance or blockchain-based forms of finance that do not rely on centralized intermediaries such as banks – has been adopted to some extent by smaller businesses in developing markets whose needs are unmet by the traditional banking system. For example, some businesses use payment companies like BitPesa in Africa, Tranglo in ASEAN and the major DeFi exchanges to either make direct payments or convert payment amounts to USD-backed stablecoin for cross-border remittance.

The greater transaction banking industry now sees DeFi as a potentially significant growth engine and disruptive force. Transaction banking addresses the operational needs and day-today transactions of businesses and financial institutions. Usually, only companies who are top customers of banks can have ready access to these services, which focus on managing the liquidity of a company, cash flows, trade and supply chain finance and other instruments needed to facilitate domestic and international corporate transactions. In 2020, industry-wide transaction banking revenue reached \$1 trillion.

Virtually all major international commercial banks have at least piloted the use of blockchain for transaction banking services – which remain slow and cumbersome – but none of these pilots have involved DeFi. Rather, they focus on making bank processes more efficient and replacing traditional financial instruments with standardized digital assets. That means the approval and execution of transactions still ultimately go through the framework of traditional banking or more established fintechs. For example, a business' credit risk is assessed based on financial statements and only applies to that specific business, without the ability to distribute risk across its system. The infrastructure around client support is also quite extensive, which means clients cannot be serviced without a high threshold cost. These practices hamper capital opportunities for larger enterprises and freeze out SMEs.

DeFi platforms provide an alternative system, not simply a plug-in to existing banks. Their decentralized nature means transaction onboarding and market-based risk assessments are much easier to scale across a business' wider system because access to relevant information is

not dependent on centralized processing or a prior relationship. Prior to DeFi, a business would have to complete anti-money laundering and "know your customer" checks for every source of capital and convince their counterparts to onboard to the same transaction banking programs. They also would not be able to present evidence of performance on their debt or payables outside of financial statements.

DeFi allows for the exchange of trustable data across a system, mitigating these barriers to business financial services. Until now, however, most companies did not seriously consider DeFi as a viable alternative to their bank's services because of the volatility of crypto-assets, regulatory uncertainty and the immature technology involved. Even Tesla's purchase of \$1.5 billion in bitcoin was motivated by the direct financial value of bitcoin as an asset, not by its transaction banking needs.

While DeFi previously solved the complex requirements around portable digital ID for businesses and has a roadmap for providing access to financial performance track records in transaction banking, it completely lacks two crucial elements: a one-to-one exchange with fiat currency; and interoperability between different blockchains so that counterparties could freely interact with one another. The former is necessary for cryptocurrency to offer a stable store of value that can be used as currency and to have an easily accessible interface with the traditional financial system. Interoperability is crucial for transactions to occur at scale in the highly fragmented blockchain space.

DeFi-based transaction banking strengthens the existing trend where services are atomized, and financial management relies more on technology, workflow management and risk arbitrage for credit opportunities. The crucial values that DeFi adds to these changes are permissionless access and the greater emphasis on interoperability. Non-DeFi decentralized systems do not yet have the ease of user onboarding that encourages adoption. Workflow management and credit arbitrage across systems are almost impossible with centralized systems that do not communicate with one another.

Nowhere is that last requirement more urgent than it is for SMEs. While large enterprises seek efficiency in transaction services, SMEs require access to credit for continued business operation and survival. According to a 2020 report by the World Trade Organization, International Chamber of Commerce and Trade Finance Global, the shortfall in financing for SMEs is \$5 trillion. Banks and fintech platforms have been scrambling to find a way to address that need, but the existing frameworks for servicing businesses are not a great fit. While AI and general digitization platforms seemed to be the best chance for immediate relief, the explosive growth of DeFi has also expedited the impact of blockchain.

Source:

#### https://www.weforum.org/agenda/2021/07/decentralized-finance-transaction-banking-smes/

#### **Global Alternative Finance Market**

China dominated the global online alternative finance market up until 2018. However, local market developments and regulatory changes have led to a considerable decline in volumes and its global market share. In 2019, the Chinese market accounted for 48% of the global

volume, and in 2020 for only 1%. Accordingly, when Chinese volumes are included in our global analysis, total global market volume has notably decreased, falling 42% in 2019 and a further 35% in 2020 – from \$304.5 billion in 2018 to \$176 billion in 2019 and \$114 billion in 2020.

When we exclude the Chinese market from our analysis, it emerges that global online alternative finance market has grown consistently over the past three years. Global volumes (excluding China) rose by 3% from \$89 billion in 2018 to \$91 billion in 2019. And in 2020, despite COVID-19, the global market volume rose a further 24% year-on-year to reach \$113 billion.

The largest business model globally in 2019, when excluding China, P2P/Marketplace Consumer Lending remained the largest model type, with a total volume of \$33.6 billion, accounting for 37% of the total global volume in 2019. In 2020, though still the largest single model, growth slowed down substantially, accounting for a total volume of \$34.7 billion, or 31% of global market share.

Accordingly, in 2020, the largest regional alternative market was the United States and Canada (\$73.93 billion) with the US being the largest national market with \$73.62 billion, which accounted for 65% of global online alternative finance market volume. This is followed by the UK (\$12.64 billion), Europe excluding the UK (\$10.12 billion), the Asia Pacific excluding China (\$8.90 billion), LAC (\$5.27 billion), SSA (\$1.22 billion), China (\$1.16 billion) and MENA (\$0.59 billion).

With on-balance sheet activities on the rise, and their relative dominance in the United States and Canada, it is not surprising to see that Balance Sheet Business Lending (excluding China) reported the second highest transaction volumes for both years among all models, with \$19 billion in 2019 and \$28 billion in 2020. Interestingly, the research has noted that 16% of firms who previously operated only a P2P/Marketplace model now engaged in on-balance sheet activities.

The donation-based crowdfunding model has experienced exponential growth, accounting for \$7 billion globally in 2020. The leap in annual growth of 160% between 2019 and 2020, can be attributed largely to the flurry of COVID-19 related charitable, community and health-related online fundraising activities around the world.

Market concentration globally as measured by the Herfindahl-Hirschman Index (HHI), for the aggregate alternative finance market remains relatively low. However, when measuring the HHI for specific alternative finance business models, the analysis suggested that seven out of 10 online alternative models have experienced increased market concentration in 2020 compared to 2019. P2P/marketplace business lending, balance sheet business lending, and P2P/marketplace consumer lending showed the greatest increases in market concentration.

In 2020, that volume of online alternative finance (excluding China) that went to micro, small and medium-sized enterprises (MSMEs) rose substantially. In 2019, global online alternative finance for business accounted for \$35 billion, up 13% year-on-year and in 2020, increased significantly further by 51% year-on-year to \$53 billion. By way of comparison, in 2019, business funding was 38% of the total volume, while in 2020 business funding accounted for 47% of the total volume.

As with previous years, online alternative finance for businesses overwhelmingly stemmed from debt-based models, with \$32.8 billion of debt finance raised in 2019 (or 94% of all business funding) and \$49.6 billion raised in 2020 (94%). Equity-based models contributed \$1.5 billion in 2019 and \$2.2 billion in 2020 (3% in 2019 and 4% in 2020). Non-investment models accounted for \$533 million in 2019 and \$744 million in 2020.

The highest MSME finance volumes were recorded in the US (\$15.4 billion in 2019; \$32 billion in 2020), the UK (\$6.5 billion in 2019; \$6.4 billion in 2020) and Europe (\$4.3 billion in 2019; \$5.2 billion in 2020). LAC alternative finance firms raised \$4 billion for businesses in 2019 and \$4.5 billion in 2020. In 2020 alone, just over 85% of all alternative finance volumes in LAC can be attributed to MSME financing. The Asia-Pacific region (excluding China) raised \$4.3 billion for businesses in 2019 and \$4.21 billion in 2020, reporting a decrease in volume for the first time after five years of continuous growth.

Institutional funding plays an important role in the functioning of the online alternative finance market, and increasingly so within the context of COVID-19. Based on data provided by 58% of the firm-level observations, we found that in 2019, approximately \$28.5 billion of the market volume was financed by institutional investors, accounting for 16% of the entire global volume for that year. In 2020, based on 60% of the firm-level observations, approximately \$43.6 billion of the market volume was financed by institutional investors, which represented 42% of the entire global volume. This represents a 53% year-on-year growth in the volume of institutional funding.

Overall, debt-based models make up the highest proportion of institutional funding, with most debt-based models having more than two thirds of their total finance provided by institutional investors. P2P/marketplace and balance sheet business lending firms reported the highest growth in terms of institutional funding volumes, and accounted for \$13 billion and \$21.2 billion in 2020, respectively. Geographically speaking, platforms in the US & Canada reported the highest level of institutionalized funding both in 2019 (74%) and 2020 (98%). In regions such as APAC and LAC, companies reported a yearly decrease in institutional investment. APAC firms reported a slight decrease from 61% (\$3.47 billion) in 2019 to 55% (\$2.93 billion) in 2020, whilst LAC reported a decrease from \$3.16 billion in 2019 to that of \$2.93 billion in 2020.

When considering the banking status of borrowers, on balance, alternative finance activities remain heavily skewed towards catering for those individuals and customers which are already banked. Crowd-led microfinance, unsurprisingly, is the only exception with 72% of clients categorized as unbanked, and 27% as underbanked.

The P2P/marketplace and balance sheet consumer lending models both saw slightly elevated instances of underbanked clients (25% and 20%, respectively). Lending models that focus on serving business clients have a slightly higher proportion of underbanked clients, though again the predominant client base is that of banked customers. 30% of clients in the P2P/marketplace business lending were categorized as underbanked, 27% for balance sheet business lending and 27% from invoice trading.

Geographically, online alternative finance firms in the UK primarily cater to banked customers (96%), with only 4% being identified as underbanked. Other regions with significantly high

levels of banked customers were MENA (83%) and LAC (82%). In contrast, Fintech activities in SSA are showing their potential to improve access to finance for underserved groups, with respondents across the region indicating that approximately 49% of their customer base could be described as unbanked, and a further 48% as underbanked. Though still predominantly catering to banked customers, firms across the Asia Pacific reported that 51% of their clients were underbanked, with a further 4% unbanked.

Surveyed firms have provided information on the gender distribution of both their funders and their fundraisers. Overall, the percentage of female fundraisers has only slightly increased from 37.8% in 2019 to 38.9% in 2020. However, the percentage of female fundraisers of alternative finance activities in four of seven regions increased from 2019 to 2020: APAC (23% to 24%), Europe (26% to 34%), SSA (47% to 54%), and the UK (47% to 59%). However, activities in the US and Canada (55% to 37%), LAC (43% to 22%) and MENA (34% to 30%) all denoted a decline in the percentage of female fundraisers who utilised online alternative finance.

Female market participation differs widely across alternative finance models as well. For most models, female participation, whether as a fundraiser or funder continued to be below 40% and saw further declines during 2020. When reviewing debt and equity-based models, eight of eleven models reported catering to a lower percentage of female fundraisers in 2020, with P2P consumer lending reporting the largest drop in the share of female fundraisers from 61% in 2019 to 35% in 2020. However, donation-based crowdfunding had the highest number of female fundraisers at 63% across the models surveyed.

When considering key risks to firm operations, for a majority of respondents, a change in regulation is perceived as the greatest potential risk to firms. These concerns were especially prominent in firms offering services relating to P2P consumer lending (50%), balance sheet consumer lending (52%), and invoice trading (50%), where at least half of the respondents perceived this to be high risk. In addition, customer fraud is ranked as a major concern for firms in invoice trading (58%), p2p property lending (42%), and balance sheet consumer lending (41%).

#### WHAT IS DEFI?

DeFi is short for "decentralized finance," an umbrella term for a variety of financial applications in cryptocurrency or blockchain geared toward disrupting financial intermediaries.

DeFi draws inspiration from blockchain, the technology behind the digital currency bitcoin, which allows several entities to hold a copy of a history of transactions, meaning it isn't controlled by a single, central source. That's important because centralized systems and human gatekeepers can limit the speed and sophistication of transactions while offering users less direct control over their money. DeFi is distinct because it expands the use of blockchain from simple value transfer to more complex financial use cases.

Bitcoin and many other digital-native assets stand out from legacy digital payment methods, such as those run by Visa and PayPal, in that they remove all middlemen from transactions. When you pay with a credit card for coffee at a cafe, a financial institution sits between you and the business, with control over the transaction, retaining the authority to stop or pause it and record it in its private ledger. With bitcoin, those institutions are cut out of the picture.

Direct purchases aren't the only type of transaction or contract overseen by big companies; financial applications such as loans, insurance, crowdfunding, derivatives, betting and more are also in their control. Cutting out middlemen from all kinds of transactions is one of the primary advantages of DeFi.

Before it was commonly known as decentralized finance, the idea of DeFi was often called "open finance."

Most applications that call themselves "DeFi" are built on top of Ethereum, the world's secondlargest cryptocurrency platform, which sets itself apart from the Bitcoin platform in that it's easier to use to build other types of decentralized applications beyond simple transactions. These more complex financial use cases were even highlighted by Ethereum creator Vitalik Buterin back in 2013 in the original Ethereum white paper.

That's because of Ethereum's platform for smart contracts – which automatically execute transactions if certain conditions are met – offers much more flexibility. Ethereum programming languages, such as Solidity, are specifically designed for creating and deploying such smart contracts.

For example, say a user wants his or her money to be sent to a friend next Tuesday, but only if the temperature climbs above 90 degrees Fahrenheit according to weather.com. Such rules can be written in a smart contract.

With smart contracts at the core, dozens of DeFi applications are operating on Ethereum, some of which are explored below. Ethereum 2.0, a coming upgrade to Ethereum's underlying network, could give these apps a boost by chipping away at Ethereum's scalability issues.

#### DECENTRALIZATION USING BLOCKCHAIN

#### What is decentralization?

In blockchain, decentralization refers to the transfer of control and decision-making from a centralized entity (individual, organization, or group thereof) to a distributed network. Decentralized networks strive to reduce the level of trust that participants must place in one another and deter their ability to exert authority or control over one another in ways that degrade the functionality of the network.

Decentralization is not a new concept. When building a technology solution, three primary network architectures are typically considered: centralized, distributed, and decentralized. While blockchain technologies often make use of decentralized networks, a blockchain application itself cannot be categorized simply as being decentralized or not. Rather, decentralization is a sliding scale and should be applied to all aspects of a blockchain application. By decentralizing the management of and access to resources in an application, greater and fairer service can be achieved. Decentralization typically has some tradeoffs such as lower transaction throughput, but ideally, the tradeoffs are worth the improved stability and service levels they produce.

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In a decentralized blockchain network, no one has to know or trust anyone else. Each member in the network has a copy of the exact same data in the form of a distributed ledger. If a member's ledger is altered or corrupted in any way, it will be rejected by the majority of the members in the network.

Companies often exchange data with their partners. This data, in turn, is typically transformed and stored in each party's data silos, only to resurface when it needs to be passed downstream. Each time the data is transformed, it opens up opportunities for data loss or incorrect data to enter the workstream. By having a decentralized data store, every entity has access to a real-time, shared view of the data.

Decentralization can reduce points of weakness in systems where there may be too much reliance on specific actors. These weak points could lead to systemic failures, including failure to provide promised services or inefficient service due to the exhaustion of resources, periodic outages, bottlenecks, lack of sufficient incentives for good service, or corruption.

Decentralization can also help optimize the distribution of resources so that promised services are provided with better performance and consistency, as well as a reduced likelihood of catastrophic failure.

#### DEFI EMPOWERED PEERMOON WALLET FOR ALL YOUR FINANCIAL NEEDS

Peermoon empowered by Defi blockchain is designed for investors in the cryptocurrency market who are looking to make their cryptocurrency work just like any other form of capital, such that they can ensure a return on investment in any market. Peermoon is a dedicated non-Turing-complete blockchain, designed specifically for the decentralized finance (DeFi) industry. DeFi provides full functionality for this specific segment of the community, sacrificing other types of functionality for simplicity, rapid throughput, and security.

The function set includes among others:

- Decentralized lending
- Decentralized exchanges (trading)
- Transferable debts and receivables
- Asset tokenization
- Distribution of Dividends
- Stablecoins for making payments

Decentralized Finance promises to provide a variety of financial instruments without the need for middlemen to ensure that the services are trusted. According to the OECD, financial services typically make up 20–30% of total service market revenue and about 20% of the total gross domestic product in developed economies. This is an enormous industry dedicated to one thing: making sure that financial transactions are trusted. With the advent of blockchain, trustless systems and smart contracts can be used to replace much of the functionality of this industry, dramatically increasing the return on investment for the individual investor.

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Financial services today are providing an important service, but at a very high cost, and despite many fintech developments, the following underlying issues persist:

High transaction costs. Due to regulatory requirements, legacy systems with complex interoperability issues, and control by large institutions, transaction fees are high for the average user of banking and financial services. Services that require a broker are even more expensive, as agents and other types of middlemen are involved.

Slow transactions, particularly for international transactions. Although theoretically, it should only take minutes for computers to transact, moving money from one institution to another can take hours within a country, and it can take days between countries.

Lack of transparency and unfair advantages to large players. Financial instruments are complex and most people do not have access to the information that would allow them to make optimal decisions. Lack of transparency is one of the major factors that led to the 2008 financial crisis and in the short term, it always leaves smaller investors (the average person) at a disadvantage compared to institutional investors.

Inaccessibility and/or higher cost to lower-income people. Financial services are simply not available in many geographies, and when they are, lower-income people are hit with even higher fees (percentage-wise) than average.

Despite legislation to reduce money laundering and related crimes, there is almost no evidence to suggest the current system or AML is, in fact, reducing money laundering.

Fintech has been attempting to address these problems, with some success. Fintech solutions such as online international transfer services, savings, and investment apps, and mobile money for underserved markets have begun to improve the situation. However, the change is incremental, and is still built on top of a system that fundamentally requires the overhead of agents to provide trust. While some of the costs can be reduced, fundamentally, fintech can't address the underlying issues of lack of transparency because it is dealing in the same financial instruments and going through the same major institutions as traditional finance.

For this reason, many investors have begun moving parts of their investments into cryptocurrency. Cryptocurrency by definition has full transparency that traditional systems simply cannot provide. Furthermore, the amount of administration and bureaucracy required is minimal. Most of the activities that were carried out by agents can be written into the code in decentralized financial systems. Of course, there is still some overhead in creating and maintaining the code, as well as maintenance of the networks, but the amount of bureaucracy is minimal, eliminating much of the cost of transacting on these systems.

Despite the promise of decentralized finance, the technology is still nascent, and there are many opportunities to create a richer and more robust decentralized finance environment. To date, investors in cryptocurrency have extremely limited investment options. Promises of peer-to-peer lending platforms, asset tokenization and other types of blockchains have either failed to deliver, been hacked, or delivered a pared-down version of the original promise.

Today, almost universally, cryptocurrency investors have only one way to earn money on their capital: rise of the cryptocurrency asset. While in the short term, this may be a good investment, it's not how currency is designed to work. The investment of capital should provide a return on investment, and cryptocurrency is designed to be like any other form of currency. Investors today want the possibility to lend, invest, and receive returns on their cryptocurrency investments. Well-designed DeFi platforms should allow the development of a variety of safe and secure financial instruments for the investment of cryptocurrency.

#### **DEFI LENDING VS. TRADITIONAL LENDING**

The underlying technology for defi lending is Blockchain; Defi utilizes all its unique features and performs exceptionally well compared to traditional lending. Defi lending offers complete transparency with easier access to assets for every money transfer process without involving any third-party. It provides the most straightforward borrowing process; the borrower needs to create an account on the Defi platform, have a crypto wallet and open Smart contracts. Defi offers a censorship-free environment, meaning there is no preferential treatment while ensuring immutability.

Defi lending benefits both lenders and borrowers. It offers margin trading options, allows longterm investors to lend assets and earn higher interest rates. It will also enable users to access fiat currency credit to borrow loans at lower rates than decentralized exchanges. Moreover, the users can sell it on a centralized exchange for a cryptocurrency and then finally lend it to decentralized exchanges.

#### What is DeFi lending?

Defi lending platforms aim to offer crypto loans in a trustless manner, i.e., without intermediaries and allow users to enlist their crypto coins on the platform for lending purposes. A borrower can directly take a loan through the decentralized platform known as P2P lending. Besides, the lending protocol allows the lender to earn interests. Among all of the decentralized applications (DApps), Defi has the highest lending growth rate and is the most prevalent contributor for locking crypto assets.

#### How do DeFi loans work?



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The underlying value of crypto assets may increase or decrease but sitting idle in wallets doesn't accrue any interest. Just holding a particular cryptocurrency won't make any earning. It is the situation where Defi loans come into the picture. Defi loans enable users to lend their crypto to someone else and earn interest on the loan. Banks always have been utilizing this service to the fullest. Now, in the world of Defi, anyone can become a lender. A lender can loan their assets to others and will be able to generate interests on that loan. This process can be done through lending pools, the loan offices of traditional banks.

Users can pool their assets and distribute them to borrowers using smart contracts. There are various ways to distribute interests to investors; hence it is recommended and worth investing some time to research to identify your interest type. The same goes for borrowers, as each pool will have a different approach on how to borrow.

While taking a loan from a bank, collateral is required that is associated with that loan. For example, for a car loan, the car itself is collateral. When the user stops paying the loan, the bank will seize the vehicle. The same goes with the decentralized system; only the difference is that the system is anonymous and doesn't involve any physical property used as collateral. To get a loan, the borrower needs to offer something more valuable than the loan amount. Smart contracts are used to deposit this amount of currency of at least equal value to the loan amount. Collaterals are available in wide varieties; any crypto token can be used to exchange borrowed cryptocurrency. For example, if a user needs to borrow one bitcoin, he'd need to deposit the price of one bitcoin in DAI.

Furthermore, the prices of Bitcoins keep swinging wildly. A case may arise when the cost of collateral drops below the price of the loan. Now, here the question arises, how to deal with this situation? An example could explain it better. Let's say a user wants to borrow 100 DAI. MakerDAO requires borrowers to collateralize their loans at a minimum of 150% of the loan value. This straight away means that the borrower needs to collateralize the loan with \$150 in ETH. And when the value of collateral reduces below \$150 ETH, it becomes subject to liquidation penalty.



#### WHAT ARE THE BENEFITS THAT PEERMOON DEFI LENDING PROVIDES TO ITS CLIENTS?

#### Improved loan origination speed

Digitally-enabled lending processes have the most significant advantage of fast processing speed. Peermoon Defi lending platform is backed by cloud-based services, analytics for fraud identification and detection and machine learning calculations for optimum loan terms and risk factors. All these technologies eventually help to speed up the process. As soon as the loan is approved, lenders send offers via e-contracts.

#### **Greater consistency in lending decisions**

Rules describing credit policies guarantee consistency in lending decisions. Variations in evaluating applicant attributes and structuring deals by underwriters are eliminated.

#### Analytics for process improvement and portfolio profitability

Analytics can help lenders and borrowers get the most out of the digital lending process. Monitoring loan applications over a particular duration (a week, month or year) can help lenders anticipate and allocate proper resources to accommodate seasonal demands. Analytics also provides insights into demographics, loan sources, credit tiers, etc. The portfolio can be improved by determining how borrower characteristics and credit policies affect loan performance.

#### Permissionless

Defi lending allows open, permissionless access, meaning anyone with a crypto wallet can access Defi applications built on Blockchain, regardless of their geographical location and without any minimum amount of funds required.

#### Transparency

The public Blockchain broadcasts every transaction on the network and is verified by every user on the network. This transparency level around transactions allows for rich data analysis and ensures verified access to every user on the network.

#### Immutability

Blockchain's decentralized architecture ensures tamper-proof data co-ordination and increases security and auditability.

#### Programmability

Smart contracts are highly programmable, automate execution and enable the development of new digital assets and financial instruments.

#### Interoperability

The use of an interconnected software stack ensures that Defi protocols and applications integrate and complement one another.

#### Self-custody

The use of Peermoon wallet ensures that Defi market participants keep strong custody of their assets and control their data.

#### Lending and Borrowing

The most widely used Defi lending applications involve peer-to-peer lending and borrowing protocols.

#### **Savings**

Peermoon Defi lending platform came up with numerous innovative ways for people to manage their savings. By plugging into different lending platforms, users can avail themselves of the services of interest-bearing accounts and maximize their earnings. Interest-bearing accounts can help the user to increase their profits when compared to traditional savings account exponentially.

#### **Asset Management**

Defi lending protocols and Peermoon crypto wallet enable users to be custodians of their crypto assets. It allows users to quickly and securely interact with the decentralized apps and avail the services of buying, selling, transferring crypto and earning interest on investments.



#### HOW DO PEERMOON DEFI LENDING PLATFORM HELP THE FINANCIAL SERVICES SECTOR?

#### **DECENTRALIZED EXCHANGE (TRADING)**

#### **Decentralized Exchanges vs. Centralized Exchanges**

Cryptocurrency exchanges provide a crucial source of liquidity to the global cryptocurrency market, facilitating billions of dollars in trading volume on a daily basis. As this market expands, leading exchange platforms continue to scale in response to the demand for digital assets, offering asset custody, new trading features and functionality, and access to an ever-growing number of digital assets.

With disintermediation as a core philosophy of the blockchain community, decentralized exchanges — or DEXs — have gained in popularity alongside traditional centralized

exchanges (CEXs). Decentralized exchanges take a different approach to buying and selling digital assets: They operate without an intermediary organization for clearing transactions, relying instead on self-executing smart contracts to facilitate trading. This dynamic enables instantaneous trades, often at a lower cost than on centralized crypto exchanges.

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In the absence of intermediaries, DEXs take on a non-custodial framework. This means that you retain custody of your cryptocurrency and are responsible for managing your wallets and private keys. Holding your private keys is considered a boon to users who want to maintain complete control of their assets. However, this comes with the risk that your keys could get lost, stolen, or destroyed; or in the unlikely possibility that you become incapacitated or pass away suddenly, if no one knows your password, your keys can't be accessed. The lack of an intermediary also means that most DEXs have limited counterparty risk and are not required to follow Know-Your-Customer (KYC) or Anti-Money-Laundering (AML) regulatory standards.

The emerging DEX market encompasses distinct segments. Each platform uses various implementations of order books, liquidity pools, or other decentralized finance (DeFi) mechanisms like aggregation tools to offer novel and experimental financial instruments.

#### **Decentralized Exchanges (Order Book)**

There are multiple generations to decentralized crypto exchanges and DeFi products. The first generation of decentralized exchanges use order books, similar to conventional centralized exchanges. These order books compile a record of all open buy and sell orders for a particular asset. The spread between these prices determines the depth of the order book and the prevailing market price. On DEXs with order books, this information is often held on-chain during trades, while your funds remain off-chain in your wallet. Many DEXs specialize in a particular financial instrument that is executed in a decentralized manner.

#### **Decentralized Exchanges (Swaps)**

The next generation of decentralized exchanges does not use order books to facilitate trades or set prices. Instead, these platforms typically employ liquidity pool protocols to determine asset pricing. Peer-to-peer in nature, these exchanges execute trades between users' wallets instantly — a process some refer to as a swap. The DEXs in this category are ranked in total value locked (TVL), or the value of assets held in the protocol's smart contracts.

#### **Decentralized Exchange Aggregators**

Decentralized exchanges use a number of different protocols and mechanisms. Although this dynamic results in higher security and autonomy, it also results in disjointed liquidity across platforms. This lack of liquidity can be a deterrent for institutional investors or wealthy independent traders who want to purchase a select crypto asset in large volumes. To address this, DEX aggregators have developed tools to deepen asset liquidity pools across centralized and decentralized crypto exchanges.

#### **Decentralized Exchange Evolution**

Although centralized exchanges account for the vast majority of market activity, since they offer security, regulatory oversight, and oftentimes insurance, the growth of DeFi has created room for the development of decentralized crypto exchange protocols and aggregation tools. Peermoon displays the potential for simple, user-friendly platforms that rely on liquidity protocols rather than order books. As the DEX market matures, the proliferation of new protocols and supporting mechanisms will likely only accelerate.

#### WHAT IS ASSET TOKENIZATION?

Tokenization is basically the process involving conversion of physical as well as nonphysical assets into blockchain. The concept of blockchain tokenization has gained considerable popularity in recent times. Gradually, tokenization is finding blockchain applications in traditional industries such as real estate, stocks, and artwork. So, why did we need tokenization in the first place?

Many would assume that asset tokenization started with cryptocurrency. On the contrary, tokenization has been used since the 1970s as a data security apparatus for financial services. Many conventional enterprises in the world of finance leverage tokenization for safeguarding sensitive and confidential information such as credit card numbers, personally identifiable information, and financial statements.

Generally, the traditional approach to tokenization involves replacing the sensitive information of users with a token that is actually a string of non-sensitive letters and numbers. Let us take an example to understand the conventional asset tokenization approach. Mobile payments utilize one of the significant examples of tokenization.

Some hospitals utilize tokenization for patient records, while software programs leverage tokenization for security of login credentials. Furthermore, tokenization has also found applications in the case of governance, such as voter registration. Asset tokenization in blockchain for government solutions can help in safeguarding a lor of sensitive information. On the other hand, it is also important to notice the reasons for coming up with blockchain tokenization.

Then, the bank enters the details of customer into a cryptographic function for creating tokens. Then, the customer receives the token representing their credit card on their phone. Any criminal trying to hack into the phone of the user would be able to find the token only, without any credit card information. Another important aspect of asset tokenization is that it is not restricted to financial information only.

It all started with cryptocurrencies, and it's now projected to introduce a new type of token or digital asset called CBDC or central bank digital currencies. In reality, CBDC and cryptocurrencies are quite different from one another even though both of them are digital assets and tokenized assets.

#### Separating Asset Tokenization from Securitization and Fractional Ownership

The benefits of blockchain technology with asset tokenization would also improve information security through timestamps and cryptographic encryption. Blockchain tokenization is slightly, although not completely, different from the traditional tokenization mechanisms. The conventional tokenization mechanisms focused on data only, while the asset tokenization with blockchain brought the focus on assets.

You can issue a blockchain token as a digital representation of any actual tradable asset. It allows you to trade with even a single fraction of the asset. Now, many beginners can confuse the process with fractional ownership or securitization. However, tokenization of assets with blockchain bears considerable differences with both of them.

Tokenization and securitization are completely different terms. Tokenization involves the transformation of all real-world assets into a digital token with higher liquidity. On the other hand, securitization deals with conversion of assets with low liquidity into security instruments having higher liquidity.

The security tokens would provide options for trading in markets as well as over-thecounter. Blockchain tokenization is different from fractional ownership as the latter offers the opportunity for bringing unrelated parties to one place for enjoying trading in the digital world.

#### Types of Tokens Used in Blockchain Tokenization

Now that you know the fundamentals of asset tokenization let us find out more about the types of tokens. If you are investing efforts in developing a tokenized asset, then you should look at the different types of tokens used commonly in the blockchain landscape. The first category of tokens refers to the ones that are classified on the basis of their nature. Here are the types of tokens in the blockchain world for different assets.

- Tangible tokens are the collection of assets with specific monetary value alongside general availability in the physical form.
- Fungible tokens refer to digital assets that are created in a way that all the tokens have equal value. This means that one Bitcoin is equal to one Bitcoin, and users can exchange it with one Bitcoin only.
- Non-fungible tokens are also another prominent concern in asset tokenization. The non-fungible assets generally feature unique traits and are not interchangeable.

#### Why Should Businesses Choose Tokenization?

With clarity about different types of tokens available to tokenize your assets, it is reasonable to move towards reasons to opt for the same. Many companies using blockchain technology are presently considering asset tokenization on the grounds of following reasons.

#### 1. Better Liquidity

The foremost entry among benefits of asset tokenization refers to higher liquidity. Privately held firms experience many issues, especially with the additional time required for buyers and sellers to know each other as well as the service offerings. In addition, businesses have to spend lots of time in determining the factors for conducting business together and hiring lawyers as well as other service providers to create contracts for execution of transactions.

On the other hand, asset tokenization helps in making the process streamlined and smoother. Tokenization of assets brings the enterprise blockchain platform that shows

a representation of tokens as private company securities. Tokens are then sold to participants with prior vetting in similar areas in the role of authorized investors with sufficient capital for risk-taking.

Investors could also leave the platform at any time by selling off their tokens on a secondary market efficiently and easily. As a result, investors don't have to worry about early redemption and the massive costs associated with it. Subsequently, individuals and agencies with high net worth could invest in private company securities. In the long run, asset tokenization could lead to development of a global market for private securities.

#### 2. No More Intermediaries

Traditionally, asset trading took days, or even months, to achieve the desired settlement for involved parties. Asset trading brings in external entities for validating documentation of transactions along with eligibility of investors. The external entities could, in turn, add up to the costs of the process. On the other hand, asset tokenization with blockchain can bring better transparency and immutability through smart contracts. As a result, tokenization can take away the intermediaries from transactions for better efficiency.

#### 3. Automation and Efficiency

The use of smart contracts with blockchain-based asset tokenization is also helpful for automation of a major share of the process. The reduction of intermediaries takes away the burden of cost of intermediaries and the efforts needed in administration of the complete process. So, all users could achieve transactions with more speed and cost-effectiveness.

#### 4. Better Transparency

Another notable highlight that marks the efficiency in tokenization of assets refers to transparency. With the help of tokenization, the token holder can embed their rights and responsibilities in contracts for definition of token attributes, as well as a comprehensive ownership record. As a result, users could have a clear idea of the person they are dealing with, their power, and the source of purchasing the token. All of these factors can improve the transparency of asset management processes.

#### 5. Improved Accessibility

The final advantage associated with asset tokenization points out to better accessibility. It is helpful in fragmentation of a specific asset into minimum possible amounts as tokens. Subsequently, tokenization also drives investors to obtain ownership of a minimal fraction of shares. As a result, enterprises can find open doors for asset management with considerable relaxation in minimum investment amount and period.

#### Tokenization of Real-World Assets is the Catalyst for Market Democratization

Tokenization is bound to play a transformative role in asset management for years to come. It holds the potential to truly democratize countless markets while making them safer and more fair.

The only true hurdle standing in the way of real-world asset tokenization comes in the form of legal boundaries. To what extent this obstacle stands in the way depends on what assets get tokenized – obviously, creating a platform for exchanging collector cards will have a much easier time than a network of priceless artworks.

Creating a legal bridge between blockchains and real-world assets requires novel legal entities that solve cross-jurisdictional and tax-related issues. Nevertheless, we feel like these concerns will be ironed out in the near future. After all, if legal hiccups are the only thing standing in the way of a significant shift towards a truly superior way of managing assets, it's fair to expect that a compromise will be made sooner rather than later.

#### **Distribution of Digital Currency Dividends**

Earlier this year, digital currency issuer First Bitcoin Capital Corp (OTCMarkets: BITCF) announced history's first dividend to be paid in cryptocurrency. The company intends to pay 10% quarterly digital cash dividends in cryptocurrencies, provided that they have a surplus of money in reserves. The company intends to pay additional dividends in various cryptocurrencies, provided that the surplus condition is met.

BITCF is one of the only publicly traded bitcoin companies available today. As such, it provides a degree of exposure to bitcoin, which is the world's largest cryptocurrency by market cap. This partly explains the share's huge jump in value this year.

BITCF has also launched a decentralized digital currency called the TeslaCoilCoin, or Teslacoin for short. The Teslacoin utilizes a proof-of-stake protocol that allows coins to be created as interest in your cryptocurrency wallet. The specifications limit total currencies to 75 million, which will keep the token's value high. Providing a hard cap on the number of coins that can be created is a common feature of cryptocurrency. However, unlike some other coins, the Teslacoin isn't pegged to traditional measures of wealth. Instead, the developers have focused on improving the existing system. This has resulted in a much more stable cryptocurrency relative to others.

The growth and widespread adoption of cryptocurrency have raised important questions for value investors. Chief among them is whether it is possible for normal dividend companies to announce payouts denominated in cryptocurrency. Can, say, Johnson & Johnson (JNJ ) or Apple Inc. (AAPL ) announce dividends in bitcoin? The answer is yes and no.

It is possible for fiat-based companies like JNJ or AAPL to issue cryptocurrencydenominated dividends only if they mint their own digital currency and create a modality that rewards investors with crypto coins. While these companies won't be able to issue bitcoin-based dividends, they can mint their own cryptocurrency and issue dividends in it. (Note: Neither JNJ nor AAPL has developed their own cryptocurrency.)

You may be asking, can companies really create their own cryptocurrency? They absolutely can. In fact, hundreds of startups have already raised billions of dollars through initial coin offerings (ICOs). An ICO is essentially an IPO for a blockchain-based

startup. Instead of purchasing dollar-denominated shares, investors contribute money to a project and receive a corresponding portion of the company's newly supplied cryptocurrency. In general, the cryptocurrency a company issues needs to have solid use cases to be successful.

Any tokenized asset with return on investment can use the dividends distribution module to create smart contracts that pay out returns on the investment automatically. Using DeFiChain will allow a leap in the functionality of dividends distribution. It will be possible to implement models similar to today, where payouts are performed on a weekly, monthly, or quarterly basis, or models where payouts are on a daily, hourly or even minute-by-minute basis.

Distribution of dividends would be relevant in any type of tokenized asset, as described above. For example, today, a municipal government might do a bond issue to invest in a wind turbine to supply electricity. The government would take care of everything, and repay that bond according to the schedule. With distribution of dividends, the community could purchase the wind turbine directly, and distribute the dividends to the investors in the wind turbine. Instead of going through the administration required through the centralized authority (government), every citizen who wanted to could invest in that wind turbine, and dividends would be paid according to each person's contribution to that investment.

Eliminating overhead and fair distribution of profits would be major benefits for the community owning the wind turbine. In this case, the wind turbine is a public good, but it could also simply be a private investment.

Any private investment could be run this way: a pinball machine, self-driving taxi, real estate investment, etc. Automatic distribution of dividends reduces the need for administration and overhead, as well as eliminating uncertainty about payouts and control by a centralized authority.

The need for joint dividend investing is becoming increasingly relevant with IoT. Devices are able to create tremendous value. A self-driving car will be able to provide taxi services. Vending machines, sensors, satellites, etc., are all potentially revenue-generating devices that people can own together and share in the profit of together, yet until now the legal and financial complexity of doing so has been prohibitive. DeFi can simplify those processes.

Similarly, distribution of profits for a private company can be implemented. One of the first experiments in this area is a DAO (Distributed Autonomous Organization) called dOrg. dOrg is a collection of programmers (as well as a sales/operations team) who coown their software house. Distribution of salaries is through a DAO that functions as a multi-sig, such that every 2 weeks, the whole organization submits their payment requests for work contracted, and the team votes to pass one anothers' salary requests. Inside dOrg, each person holds a "reputation" that represents the percentage of ownership each person has earned (they earn ownership according to the amount of work done since the inception of the company). But what will happen to the profit at the end of the year? Presumably, each individual will have to submit a request for their percentage of the profits, and everyone will have to vote on that, too, because the DAO does not allow for automated distribution of profits. Using DeFiChain, the team could easily implement a quarterly or annual function that would automatically distribute the profits of the company to each person, according to their holdings in the company. This scheme would work even for people who were active in the past, but are no longer active, so they aren't in the DAO any longer, but they still hold a percentage based on their past contributions. Other contributors might be an investor who puts money into the company, but does not participate.

The examples above seem logical and straightforward, but today are extremely timeconsuming and complex. People who want to make an investment together in companies, real estate, or other income-deriving assets type of dividend distribution today is complex and requires a lot of manual calculations. Through the DeFi Distribution of Dividends functionality, it becomes not just simple, but automatic for companies to distribute dividends to equity owners.

Most companies have relied on the Ethereum network to build their cryptocurrency. Ethereum is the second-largest cryptocurrency when measured in terms of market cap.

ICO issuers typically reward investors with a share of the profits, but dividends are also possible.

#### WHAT ARE STABLECOINS?

Stablecoins are a type of cryptocurrency that is built to offer more stability than other cryptos because it is backed by assets like the U.S. dollar or gold. Other cryptos, such as bitcoin, aren't pegged to a stable asset; their value is derived from a combination of peer-to-peer technology and software-driven cryptography.

#### How do stablecoins work?

Stablecoins are backed by multiple sources, including fiat currency (meaning traditional currencies like the U.S. dollars in your bank account), other cryptocurrencies, precious metals and algorithmic functions. But a crypto's backing source can impact its risk level: A fiat-backed stablecoin, for instance, may be more stable because it is linked to a centralized financial system, which has an authority figure (like a central bank) that can step in and control prices when valuations are volatile. Stablecoins that aren't linked to centralized financial systems, like a bitcoin-backed stablecoin, may change drastically and quickly in part because there is no regulating body controlling what the stablecoin is pegged to.

Fiat-backed stablecoins are described as an IOU — you use your dollars (or other fiat currency) to buy stablecoins that you can redeem later for your original currency. Unlike other cryptos, with value that can fluctuate wildly, fiat-backed stablecoins aim to have very small price fluctuations. But that's not to say stablecoins are a totally safe bet — they are still relatively new with a limited track record and unknown risks and should be

invested in with caution. The cryptocurrency exchange Coinbase offers a fiat-backed stablecoin called USD coin, which can be exchanged on a 1-to-1 ratio for one U.S. dollar.

Crypto-backed stablecoins are backed by other crypto assets. Because the backing asset can be volatile, crypto-backed stablecoins are overcollateralized to ensure the stablecoin's value. For example, a \$1 crypto-backed stablecoin may be tied to an underlying crypto asset worth \$2, so if the underlying crypto loses value, the stablecoin has a built-in cushion and can remain at \$1. These assets are less stable than fiat-backed stablecoins, and it is a good idea to keep tabs on how the underlying crypto asset behind your stablecoin is performing. One crypto-backed stablecoin is DAI, which is pegged to the U.S. dollar and runs on the Ethereum blockchain.

Precious metal-backed stablecoins use gold and other precious metals to help maintain their value. These stablecoins are centralized, which parts of the crypto community may see as a drawback, but it also protects them from crypto volatility. Gold has long been seen as a hedge against stock market volatility and inflation, making it an attractive addition to portfolios in fluctuating markets. Digix is a stablecoin backed by gold that gives investors the ability to invest in the precious metal without the difficulties of transporting and storing it.

Algorithmic stablecoins aren't backed by any asset — perhaps making them the stablecoin that is hardest to understand. These stablecoins use a computer algorithm to keep the coin's value from fluctuating too much. If the price of an algorithmic stablecoin is pegged to \$1 USD, but the stablecoin rises higher, the algorithm would automatically release more tokens into the supply to bring the price down. If it falls below \$1, it would cut the supply to bring the price back up. How many tokens you own will change, but they will still reflect your share. One algorithmic stablecoin is AMPL, which its creators say is better equipped to handle shocks in demand.

#### **Buy stablecoins on Peermoon**

To buy any type of stablecoins you'll need an account with Peermoon where you can buy crypto directly. Some services may not be available in all locations, so be sure to check whether the options you want are available where you live. Exchanges like Coinbase may offer some stablecoins, but such centralized exchanges may list fiatbacked versions only. For more options, you could use Peermoon to swap any existing tokens for most stablecoins.

#### Medium of Exchange and Store of Value

The most immediately apparent advantage of stablecoin technology is its utility as a medium of exchange, effectively bridging the gap between fiat and cryptocurrency. By minimizing price volatility, stablecoins can achieve a utility wholly separate from the ownership of legacy cryptocurrencies.

As their name suggests, stablecoins are inherently stable assets, making them a suitable store of value, which encourages their use in everyday transactions. Further, stablecoins

improve the mobility of crypto assets throughout the ecosystem.

Stablecoins point the way toward integrating traditional financial markets with the quickly evolving decentralized finance (DeFi) industry. As a force for market stability, stablecoins present a primary vehicle for cryptocurrency adoption in loan and credit markets, while inheriting much of the utility previously reserved for only fiat currency.

#### WHAT KEEPS THE PRICES STABLE?

#### How do stablecoins stay clear of the volatility seen in the crypto markets?

There are two types of stablecoins depending on the collateral: national currency backed, and cryptocurrency backed.

Collateralised stablecoins are attached to another asset, like the US dollar. Their issuers back up the value of their coin by holding on to that asset.

Other stablecoins are linked to the price of crypto assets like Ether or, in certain DeFi apps, collections of coins put up as collateral. Some stablecoins also employ algorithms to manage supply and demand of the coin so what's in circulation matches what's held in reserve.

# But why do people use stablecoins even though the US dollar can serve its purpose directly?

There are institutional features that excite investors to use stablecoins.

The first is added costs when trading cryptos for dollars. On some exchanges, there are longer processing lags for dollar withdrawals. Fees are also often imposed when dollar withdrawals are frequent or large. Another feature favoring stablecoins is their usage across a greater cross-section of crypto exchanges.

Crypto exchanges that have trusted volume do not provide investors with any on-ramp for trading dollars. They only accept stablecoins as a medium of exchange.

Two primary reasons for the price stability of fiat currencies are the reserves that back them and the timely market actions by the controlling authorities, like central banks. Since fiat currencies are pegged to an underlying asset, such as gold or forex reserves which act as collateral, their valuations remain free from wild swings.

Even in certain extreme cases when a fiat currency's valuations may move drastically, the controlling authorities jump in and manage the demand and supply of currency to maintain price stability. The bulk of cryptocurrencies lacks both these key features—they don't have a reserve backing their valuations and they don't have a central authority to control prices when required.

Stablecoins attempt to bridge this gap between fiat currencies and cryptocurrencies. There are three categories of stablecoins, all based on their working mechanism.

#### Why not use a regular cryptocurrency?

It's not that other cryptocurrencies such as Bitcoin, Ether or Lumens can't be used to facilitate transactions on blockchain. They definitely can and are already being used in

production on blockchain networks. Many offer advantages over fiat currencies, for example privacy and anonymity of transactions with real time settlement. However, there are a number of reasons pure cryptocurrencies might not be the best solution for widespread, mainstream use, including:

- Exchange rate volatility
- Liquidity issues (which will probably go away over time)
- Stability, efficiency or control of anonymous networks
- Scalability of the network (downsides of mining-dependent public networks)
- Lack of regulatory controls for anti-money laundering or identity management
- Absence of conventional monetary policy

Price of cryptocurrencies are constantly fluctuating depending on conditions in the market. This is not unlike other currency markets, however with these coins we are seeing 10, 20 or even 30 percent price fluctuations in a single day. This exchange rate volatility, which is present in most cryptocurrencies available today, is one of the biggest barriers to using traditional cryptocurrencies to facilitate everyday transactions on blockchain. Merchants are hesitant to accept cryptocurrencies as payment because their value could suddenly drop or go up the next day. Payment processors are weary because the underlying networks are still maturing and not scalable to the levels of peak processing like transactions on credit card networks — in the case of Bitcoin and Ethereum, not even close.

This volatility and inherent risk mean that most financial institutions are wary of using cryptocurrencies as the basis for mainstream commercial transactions and why some countries have banned their use entirely.

#### **TECHNICAL INFORMATION - DEFI BUILDING BLOCKS**

DeFi uses a multi-layered architecture. Every layer has a distinct purpose. The layers build on each other and create an open and highly composable infrastructure that allows everyone to build on, rehash, or use other parts of the stack. It is also crucial to understand that these layers are hierarchical: They are only as secure as the layers below. If, for example, the blockchain in the settlement layer is compromised, all subsequent layers would not be secure. Similarly, if we were to use a permissioned ledger as the foundation, any decentralization efforts on subsequent layers would be ineffective.

Aggregation layer	Aggregator 1	Aggregator 2	Aggregator 3				
Application layer							
Protocol layer	Exchange	ding Derivatives	Asset management				
Asset layer	Native protocol	Fungible tokens: ERC-20 tok	on-fungible ens: ERC-721				
Settlement layer	asset (ETH)	(Ethereum) blockchain					

This section proposes a Peermoon framework for analyzing these layers and studying the token and the protocol layers in greater detail.1 It differentiates between five layers, as shown in Figure 2: the settlement, asset, protocol, application, and aggregation layers.

- 1. The settlement layer (Layer 1) consists of the blockchain and its native protocol asset (e.g., Bitcoin [BTC] on the Bitcoin blockchain and ETH on the Ethereum blockchain). It allows the network to store ownership information securely and ensures that any state changes adhere to its ruleset. The blockchain can be seen as the foundation for trustless execution and serves as a settlement and dispute resolution layer.
- 2. The asset layer (Layer 2) consists of all assets that are issued on top of the settlement layer. This includes the native protocol asset as well as any additional assets that are issued on this blockchain (usually referred to as tokens).
- 3. The protocol layer (Layer 3) provides standards for specific use cases such as decentralized exchanges, debt markets, derivatives, and on-chain asset management. These standards are usually implemented as a set of smart contracts and can be accessed by any user (or DeFi application). As such, these protocols are highly interoperable.
- 4. The application layer (Layer 4) creates user-oriented applications that connect to individual protocols. The smart contract interaction is usually abstracted by a web browser-based front end, making the protocols easier to use.
- 5. The aggregation layer (Layer 5) is an extension of the application layer. Aggregators create user-centric platforms that connect to several applications and protocols. They usually provide tools to compare and rate services, allow users to perform otherwise complex tasks by connecting to several protocols simultaneously, and combine relevant information in a clear and concise manner.
- 6. Now that we understand Peermoon model, let us take a closer look at tokenization and the protocol layer. After a short introduction to asset tokenization, we will investigate decentralized exchange protocols, decentralized lending platforms, decentralized derivatives, and on-chain asset management. This allows us to establish the foundation needed for our analysis of the potential and risks of DeFi.

#### TOKENIZATION AS A DEFI PEERMOON STANDARD TOKEN (DPST)

The implementation of the features described in this whitepaper is performed with the use of standardized tokens. This chapter describes the mechanics of the tokens, interaction with other cryptoassets (tokens), and how they are used in Peermoon DeFi blockchain.

#### **Cross-chain Mechanics**

Peermoon uses token standards to bring in external tokens to Peermoon in a trustless manner and allow trustless financial contracts and trading of all major cryptoasset tokens. The token standards are similar to ERC20 on Ethereum and Omni on Bitcoin blockchain. Through this standard, Peermoon allows tokenization of any assets.

On Peermoon the standardized tokens are called DeFi Peermoon Standard Token (DPST). DST tokens are of two different types: DCT, created by users of the system, and DAT, which are

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asset-backed tokens created with the backing of cryptoassets.

### DEFI PEERMOON CUSTOM TOKEN (DPCT)

DPCTs are custom tokens that can be created by any user to represent any project or set of smart contracts implemented on Peermoon. Any user can create such a DCT. To prevent abuse, creation of any proprietary DPCT requires the user to lock up 1,000 DFI for the time that the tokens are issued. The DFI is returned when the tokens are revoked and the DCT is cancelled.

DPCT tokens are not backed intrinsically by Peermoon. They may be backed through an external mechanism, but it's essential to note that Peermoon does not intrinsically back them. An example on the Ethereum blockchain would be DGX, which is an ERC20 token backed by gold. Ethereum does not back DGX, although the token is created through ERC20. The Digix Foundation is accountable for the value of that token. Similarly, DPCT is the DeFi parallel to ERC20 on Ethereum. Creation and issuance of tokens on DeFi is simplified and the potential for errors in the smart contract is eliminated, because creators of DPCT can set only the parameters below, using an easy-to-use scripting interface.

#### **DPCT Parameters:**

- DPCT ID: Unique blockchain identifier for the token.
- Name: Name of the tokens.
- Symbol: The ticker symbol for the tokens. The DPCT protocol will provide a reference for ensuring the choice will be a unique symbol.
- Decimal places: Divisible number of decimal places for the tokens. This cannot be changed once it is set.
- Total initial supply: Initial issue of tokens during the event generated.
- Initial distribution list: List of addresses for distribution of tokens.
- Minting support: yes/no
- Final supply limit (optional): Immutable total supply limit. If minting is supporting this will define the ceiling on how many tokens the token owner can mint in total (some may be reserved at this time). If this parameter is left blank, this is an unlimited supply token. This cannot be changed after the initial definition of the token.
- Tradeability: yes/no. This is a one-way switch allowing the token owner to transfer tokens during initial distribution period and also to decide when a token is tradeable/movable. To ensure the decentralized nature of DPCT, once "tradeability" is set to yes, the owner is no longer able to reverse the tradability of a token. Typically, when creating a token, this should be turned to "no" until the initial distribution is confirmed to be accurate.

Using this interface, there is no need to have a smart contract developer, and there is no need for a security audit.

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#### DeFi Peermoon Asset Token (DAT)

DeFi Asset Tokens (DATs) are backed in a decentralized manner. DATs on Peermoon are tokens and crypto assets external of Peermoon, such as:

- DBTC, backed by BTC
- DETH, backed by ETH
- DXRP, backed by XRP
- DUSDT, backed by USDT
- DBCH, backed by BCH, etc.

New DATs are introduced to the system through voting by masternodes. This ensures that only assets that gather the most interest amongst Peermoon users get introduced.

#### **ECONOMIC PEGGING OF DATS**

The goal of DAT is to have it represent the native asset on the other blockchains, e.g. 1 DBTC should represent 1 BTC.

There are two approaches to this:

#### 1. Stablecoin approach

For every single issued 1 DBTC, 1 BTC has to be locked up in an address or a smart contract.

While this would help to build a guarantee to DBTC, it introduces some other issues – country-party risks and affect the decentralized nature of DeFi.

#### 2. Economic pegging

By providing a strong guarantee that the DAT representing an asset has its price closely tracking the native asset, i.e. by holding DBTC, one can have a good confidence that the value of DBTC will track that of BTC.

In order for us to achieve economic pegging, the following building blocks are built natively on Peermoon:

- Loan Contract
- Decentralized Exchange (DEX)
- Cross-chain Exchange (XCX)
- Pricing Oracles

#### CONSTANT FUNCTION MARKET MAKER

A constant function market maker (CFMM) is a smart contract-liquidity pool that holds (at least) two cryptoassets in reserve and allows anyone to deposit tokens of one type and thereby to withdraw tokens of the other type. To determine the exchange rate, smart contract-based liquidity pools use variations of the constant product model, where the relative price is a function of the smart contract's token reserve ratio. The earliest implementation I am aware of was proposed by Hertzog, Benartzi, and Benartzi (2017). Adams (2018) has simplified the model, and Zhang, Chen, and Park (2018) provide a formal proof of the concept. Martinelli and Mushegian (2019) generalized the concept for cases with more than two tokens and dynamic token weights. Egorov (2019) optimized the idea for stablecoin swaps.



In its simplest form, the constant product model can be expressed as xy = k, where x and y correspond to the smart contract's token reserves and k is a constant. Considering that this equation must hold, when someone executes a trade, we get  $(x + \Delta x) \cdot (y + \Delta y) = k$ . It can then be easily shown that  $\Delta y = (k/(x + \Delta x)) - y$ . Consequently,  $\Delta y$  will assume negative values for any  $\Delta x > 0$ . In fact, any exchange corresponds to a move on a convex token reserve curve, which is shown in Figure 4A. A liquidity pool using this model cannot be depleted, as tokens will get more expensive with lower reserves. When the token supply of either one of the two tokens approaches zero, its relative price rises infinitely as a result.

It is important to point out that smart contract-based liquidity pools are not reliant on external price feeds (so-called oracles). Whenever the market price of an asset shifts, anyone can use the arbitrage opportunity and trade tokens with the smart contract until the liquidity pool price converges to the current market price. The implicit bid/ask spread of the constant product model (plus a small trading fee) may lead to the accumulation of additional funds. Anyone who provides liquidity to the pool receives pool share tokens that allow them to participate in this accumulation and to redeem these tokens for their share of a potentially growing liquidity pool. Liquidity provision results in a growing k and is visualized in Figure 4B.

#### RISKS

DeFi also has certain risks, namely, smart contract execution risk, operational security, and dependencies on other protocols and external data. We discuss these aspects in the following subsections.

#### **Smart Contract Execution**

While the deterministic and decentralized execution of smart contracts does have its advantages, there is risk that something may go wrong. If there are coding errors, these errors may potentially create vulnerabilities that allow an attacker to drain the smart contract's funds, cause chaos, or render the protocol unusable. Users have to be aware that the protocol is only as secure as the smart contracts underlying it. Unfortunately, the average user will not be able to read the contract code, let alone evaluate its security. While audits, insurance services, and formal verification are partial solutions to this problem, some degree of uncertainty remains.

#### Similar risks exist in contract execution

Most users do not understand the data payload they are asked to sign as part of transactions and may be misled by a compromised front-end. Unfortunately, there seems to be an inherent trade-off between usability and security. For example, some decentralized blockchain applications will ask for permissions to transfer an infinite number of tokens on behalf of the user—usually to make future transactions more convenient and efficient. Such permission, however, puts the user's funds at risk.

#### **Operational Security**

Many DeFi protocols and applications use admin keys. These keys allow a predefined group of individuals (usually the project's core team) to upgrade the contracts and to perform emergency

shutdowns. While it is understandable that some projects want to implement these precautionary measures and remain somewhat flexible, the existence of these keys can be a potential problem. If the keyholders do not create or store their keys securely, malicious third parties could get their hands on these keys and compromise the smart contract. Alternatively, the core team members themselves may be malicious or corrupted by significant monetary incentives.

Most projects try to mitigate this risk with multisig and timelocks. Multisig requires M-of-N keys to execute any of the smart contract's admin functions, and timelocks specify the earliest time at which a transaction can be (successfully) confirmed.

As an alternative, some projects rely on voting schemes, where the respective governance tokens grant their owners the right to vote on the protocol's future. However, in many cases, the majority of governance tokens are held by a small group of people, effectively leading to similar results as with admin keys. Some projects have tried to mitigate this concentration of voting power by rewarding early adopters and users who fulfill specific criteria, which range from simple protocol usage to active participation in the voting process and third-party token staking (yield farming). Nevertheless, even when a launch is perceived as being relatively "fair," the actual distribution often remains highly concentrated.

Governance tokens may lead to undesirable consequences. In fact, a high concentration of power may be even more problematic when these rights are tokenized. In the absence of vesting periods, malicious founders can pull the rug by dumping their entire token holding on a CFMM, causing a massive supply shock and undermining the project's credibility. Moreover, yield farming may lead to centralization creep by allowing an already well-established protocol to assume a significant portion of a relatively new protocol's governance tokens. This may create large meta protocols whose token holders essentially control a considerable portion of the DeFi infrastructure.

#### Dependencies

The most promising features of the DeFi ecosystem are its openness and composability. These features allow various smart contracts and decentralized blockchain applications to interact with each other and to offer new services based on a combination of existing ones. On the flip side, these interactions introduce severe dependencies. If there is an issue with one smart contract, it may potentially have wide-reaching consequences for multiple applications across the entire DeFi ecosystem. Moreover, problems with the Dai stablecoin or severe ETH price shocks may cause ripple effects throughout the whole DeFi ecosystem.

The problem becomes apparent when illustrated by an example. Let us assume that a person locks ETH as collateral in the MakerDAO contract to issue Dai stablecoins. Let us further assume that the Dai stablecoins are locked in a compound lending smart contract to issue interest-bearing derivative tokens, called cDai. The cDai tokens are subsequently moved to the UniSwap ETH/cDai liquidity pool, along with some ETH, allowing the person to withdraw UNI-cDai tokens representing a share of the liquidity pool. With every additional smart contract, the potential risk of a bug increases. If any of the contracts in the sequence fail, the UNI-cDai tokens could potentially become worthless. These "token on top of a token on top of a token" scenarios, which create wrapper tokens, can entangle projects in such a way that theoretical transparency does not correspond to actual transparency.

#### **External Data**

Another point worth mentioning is the fact that many smart contracts are reliant on external data. Whenever a smart contract depends on data that are not natively available on-chain, the data must be provided by external data sources. These so-called oracles introduce dependencies and may, in some cases, lead to heavily centralized contract execution. To mitigate this risk, many projects rely on decentralized oracle networks with a large variety of data provision schemes.

#### **Illicit Activity**

A common concern among regulators is that cryptoassets may be used by individuals who want to avoid records and monitoring. While the inherent transparency of DeFi is a deterrent to this use case, the network's pseudonymity may provide some privacy. However, this may not necessarily be a bad thing, and the situation is more complicated than it may seem at first glance. On the one hand, pseudonymity can be abused by actors with dishonest intentions. On the other hand, privacy may be a desirable attribute for some legitimate financial applications. Correspondingly, regulators should act with great care, trying to find reasonable solutions that allow them to step in where necessary without stifling innovation. Moreover, one has to be aware that regulating a decentralized network may not be feasible.

While it is questionable whether regulators can (or should) regulate a decentralized infrastructure, there are two areas that deserve special attention, namely, fiat on- and off-ramps and the decentralization theater.

Fiat on- and off-ramps are the interface to the traditional financial system. Whenever people want to move assets from their bank account to the blockchain-based system or the other way, they have to go through a financial service provider. These financial service providers are regulated and may require background checks on the origin of the funds.

In a similar vein, it is important to differentiate between legitimate decentralized protocols and projects that only claim to be decentralized but are in fact under the exclusive control of an organization or a few individuals. The former may provide exciting new possibilities and remove some dependencies, while the latter may essentially introduce the worst of two worlds, that is, de facto dependencies on a centralized operator with limited supervision. Keeping this in mind, regulators should watch closely and analyze carefully if a given DeFi protocol is indeed decentralized or if the DeFi label is just for show in an attempt to get around regulation.

#### Scalability

Blockchains face the ultimate trade-off between decentralization, security, and scalability. While the Ethereum blockchain is generally regarded as relatively decentralized and secure, it struggles to keep up with the great demand for block space. Escalating gas prices (transaction fees) and long confirmation times adversely affect the DeFi ecosystem and favor wealthy individuals who can conduct large trades.

Potential solutions to this problem include base-layer sharding, as well as various Layer 2 solutions, such as state channels, ZK (zero knowledge) rollups, and optimistic rollups.

However, in many cases, scalability efforts weaken composability and general transaction atomicity—two of DeFi's most prominent features. On the other hand, moving DeFi to a more centralized base layer does not seem to be a reasonable approach either, as it would essentially undermine its main value proposition. Thus, it remains to be seen if a truly decentralized blockchain can keep up with the demand and provide the foundation for an open, transparent, and immutable financial infrastructure.

#### PEERMOON CONNECTING CRYPTO AND FIAT-FINANCING

#### **Financing process**

Detailed financing process indicating actions of various members of the ecosystem as well as automatic Peermoon actions based on smart contracts.

Description of Peermoon financing process:

#### **1A New Borrower:**

New SME applies using their business credentials to join Peermoon and must undergo initial pre-qualification process, i.e., prove that it is a legal company, provide some generic company data. SME is automatically check against Trust arbitrage smart contract to make sure that if SME was 'removed' earlier from Peermoon, it would not be able to return before the reconciliation period ends.

SMEs can join Peermoon directly or via a broker / agent who deals with SME non-crypto way while moving the needed loan onto Peermoon. Moreover, to further stipulate self-sustainability of the ecosystem, referral system compensating anyone attracting a new borrower with Peermoon tokens will be in place.

Borrower is registered on Peermoon, a new account for crypto currency is created (unless an existing one is used during the onboarding process).

- **1.1 Prequalify:** If Borrower passes automatic prequalification (i.e., amount of revenue, time from registration), the financing process advances; otherwise, Borrower can't join Peermoon and can try doing it later.
- 1B New application: Borrower can apply for a new loan (indicating needed amount,

acceptable interest rate, advanced interest rate in case of minimal late payment, repayment date and other critical data) and provide information on assets to be used as a collateral for the loan, if any. Initial validation of application will be taken care - to automatically refuse applications that would not make any business sense for the ecosystem thus not wasting members' time as well as not to fill the ecosystem with 'garbage' applications.

All data is recorded on the blockchain. New smart contract for particular asset is automatically created. Borrower shall have Peermoon tokens before applying for the loan as Borrower pays Peermoon tokens for asset creation within the ecosystem.

**2A Verify ASSET:** Borrower (or Investor) requests verification counterparty to verify the asset and authenticate it to description provided using traditional measures, i.e., phone call to company, checking signed copies of documents, or automatic process, i.e., automated process linked to local databases or other blockchain solutions.

New smart contract for verification of the asset is automatically created. Borrower (or Investor) may request more than one verifier to perform this step, then all individual verifications as well as aggregated verification is presented. Results of verification are recorded to blockchain. The initiator of this step (Borrower or Investor) shall compensate counterparty for performing this step in Peermoon tokens - considering trust rating vs. price of verification. Amount of 10% from all received fees by the verification counterparty is frozen to guarantee quality of future services delivered.

**2.1 Verified:** If asset is verified, the financing process advances; otherwise, the fact about 'unverified asset' is passed to trust arbitrage smart contract and the financing process is terminated, the loan request (based on the asset) is removed from Peermoon.

**2B** ASSESS RISK: Borrower (or Investor) requests risk assessor counterparty to assess the risk of the asset (loan). Risk assessment is a complicated process that is influenced by data available for different geographic locations and involves various facets of potential risk like SME, its financial data, its customers, liquidity of assets provided, market they operate, location they operate etc.

Counterparty can do risk assessment manually by analyzing data or by using automated risk scoring algorithms.

New smart contract for risk assessment is automatically created. Borrower (or Investor) may request more than one risk assessor to perform this step, then all individual assessments as well as aggregated assessment is presented. Results of risk assessment are recorded to blockchain. The initiator of this step (Borrower or Investor) shall compensate counterparty for performing this step in Peermoon tokens - considering trust rating vs. price of risk assessment. Amount of 10% from all received fees by the risk assessment counterparty is frozen to guarantee quality of future services delivered.

**3A INSURANCE:** The loan may be insured to decrease risk for Investors against default of borrower and guarantee partial or full repayment of the loan. Hence ensuring better traction of

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financing. It is a step performed by insurer counterparty on the request of Borrower or Investor.

New smart contract for insurer is automatically created. Borrower (or Investor) may request more than one insurer to perform this step. Fact of insurance is recorded to blockchain.

The initiator of this step (Borrower or Investor) shall compensate counterparty for performing this step in Peermoon tokens - considering trust rating vs. price of insurance and proposed terms of insurance. Amount of 10% from all received fees by the insurance counterparty is frozen to guarantee quality of future services delivered.

**4A Invest in a loan:** Investors use list of available loans / dashboard of available loans on Peermoon to check, pick and invest in one or many loans at the same time. Investors will be able to request more services to have better information about the asset or based on the available information make an informed decision in which loan to invest. Manual and automatic investment options will be available – automatic option allocates designated investor's funds based on predefined criteria, for example, risk rating, amount of loan, geographic location, market operated in etc.

Investors will use existing borrower's asset smart contract to record investment. To have an automatic investment Peermoon will scan and analyze existing borrowers' asset smart contracts and automatically invest in the loans corresponding to automatic investment options set by particular investor. Fact of investment is recorded to blockchain. Investor needs to have Peermoon tokens before investing in a loan as Investor should pay Peermoon tokens for investment creation within the ecosystem.

**4B Fiat investment:** Peermoon is a hybrid solution, all loan-related payments (principal and interest) will be dealt in fiat currencies and treated as "physical financial goods". There will be a specific counterparty to ensure fiat transactions – a fiat facilitator. Investors will make fiat transfers to fiat facilitators who will make needed transfers to Borrowers based on investor's investment indications on Peermoon. As Borrowers need to receive a single fiat wire for the deal, many investors' payments in fiat need to be aggregated beforehand by fiat facilitator.

Fiat facilitators will use existing borrower's asset smart contract to record fiat payments sent. Fact of fiat transfer is recorded to blockchain. Fiat facilitators keep a small percentage of fiat payments made as a compensation for their services of distributing fiat from investors to borrowers and vice versa.

**5 Secondary market:** As soon as investors have invested in a loan, a new tokenized asset class, a sub-investment instrument, is created. Such crypto assets can be sold to other investors directly on Peermoon's secondary market. Secondary market ensures that other investors will be able to purchase "late assets with discount" or current investors will be able to liquidate their existing investment with or without discount. Investor may list investments in loans that investor wants to resell and indicate discount offered to new investors. Other investors may choose to buy the existing investment.

If one investor buys an existing investment from another investor on Peermoon secondary

market, investment smart contract is changed that ensures the repaid principal and interest is transferred to the new investor. Results of secondary market transactions are recorded to blockchain. Current investor needs to have Peermoon tokens before publishing an existing investment on a secondary market as current investor should pay Peermoon tokens for creation of a secondary market item within the ecosystem.

**6.1 Loan paid on time:** If Borrower repays loan with interest on time by making a fiat payment to fiat facilitator, process is continued by fiatfacilitator.

If Borrower does not repay loan with interest on time (including advanced interest period, if such was anticipated), debt collection process is started.

**6A Fiat repayment:** When Borrower repays principal and interest, fiat facilitator assigns received fiat to investors as well as exchange agreed part of interest received to Peermoon tokens and transfer to investors' accounts on Peermoon. This allows investors to keep continuously using services on the ecosystem. Fiat facilitators repay fiat to investors only if requested by an investor. Fiat is not repaid every time as holding it allows fiat facilitator to optimize for fiat transfer costs, to distribute operated fiat over various regions and countries. It is important as SMEs joining Peermoon should use local (the cheapest) fiat transfers available.

Fiat facilitators will use existing borrower's asset smart contract to record fiat payments received. Fact of fiat transfer is recorded to blockchain.

**6B Debt collection:** If Borrower does not repay loan with interest on time (including advanced interest period if such was anticipated) a newsmart contract for debt collection is automatically created and debt collection counterparties may make proposals. Investors should vote on which proposal to take as they may be extremely different, i.e., anything from regain small amount fast to regain most of the amount very slowly. The period for votes closes either if more than 50% of Investors picked a single debt collection option or time dedicated for voting ends. The option most supported by Investors is picked and that particular debt collector starts work for all existing Investors (not only the ones that voted). When (part of) debt is collected, information is passed to fiat facilitator to understand how fiat payment received should be distributed.

Fact of debt collection is recorded to blockchain. All debt collection costs are taken from the borrower.

**7A TRUST arbitrage:** When the process for particular loan ends (either by successful repayment of loan or buy debt collection process), automatic trust arbitrage process is triggered for all members involved in the particular loan.

Each smart contract used throughout financing of a particular loan will automatically trigger trust arbitrage smart contract for both parties involved.

Trust arbitrage smart contracts will be linked to main asset smart contract to follow 'the outcome' of the loan. Based on specific objective criteria trust rating will be updated (increased or decreased by certain amount of trust points) for each party involved.

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Service counterparties will not trigger Peermoon trust arbitrage directly but via community trust arbitrage smart contract to ensure that the whole community represented by a particular counterparty gets their trust rating updated.

Trust rating can define availability, price, or priority for further actions within Peermoon bringing financing process to a new level by optimizing financing process to promote the best performing members of the ecosystem.

Available trust ratings will be displayed on Peermoon to allow other members to consider trust before engaging into mutual business operation. Data displayed may also include particular parts of trust rating, for example, number of successful transactions, number of 'thumbs up/down', number of disputes, and total transaction volume. With every successful transaction and good final ranking, the increase in the system reputation will result in additional Peermoon token transfers across all involved members.

**7.1 Action needed:** Specific business rules will be developed within trust arbitrage smart contract for automatic operations with Peermoon members based on changing trust ratings. To do that Peermoon will scan and analyze existing trust arbitrage smart contracts and performed designated actions if trust arbitrage smart contract corresponds to automatic actions designed.

**7B TRUST action:** Based on changing trust ratings, specific business rules will trigger trust arbitrage smart contract to perform certain actions. For example, if trust rating of a counterparty drops by 50% its community shall decide of what to do with particular counterparty, if no 'positive' or 'negative' action is taken – the counterparty involved is automatically frozen for certain period or removed altogether. Any automatic rule will be transparent and publicly available to anyone. They are needed to ensure that only trustworthy counterparties are participating within the ecosystem and to minimize fraudulence and potential trust damage to the whole global ecosystem.

#### PEOPLE BEHIND PEERMOON DIGITAL WALLET AND OUR VISION



Dan Martalog Co-founder, CBDO



Tadeusz Blago Co-founder, CTO



Elena Kriek Co-founder, CMO



Daniel Bary Advisor, Angel investor



Chad Nguyen Advisor, Angel investor

Currently, about 60 people are involved in the development of the Peermoon digital wallet. The authors of the Peermoon product idea have many years of experience in the financial sector and investing in various asset classes. The lack of a convenient solution for investing in various instruments inspired us to make a change - to create an advanced solution that allows us to invest in many types of assets and use other financial services.

Next year, after the launch of Peermoon digital wallet, we plan to grow to a team of up to 300 people, mostly IT professionals, product developers, and the growth team, responsible for the expansion of digital wallet partners network to ensure the widest possible variety of products inside the digital wallet to the end-user.

We have invested our own capital and angel investors have already supported the idea of our product with their investments. The initial investment we made into product/technology development amounts to USD 960k. During the ICO campaign, we plan to attract about USD 16 million to grow internationally and to make our product a global player in the financial industry.

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#### **TOKEN SALE ESTIMATE / DISTRIBUTION**

Token distribution	12 000 000 000,00		
Early Bird/Seed Investors	240 000 000,00	2%	
Private sale A	960 000 000,00	8%	
Private Sale B	840 000 000,00	7%	
Public Sale	600 000 000,00	5%	
Advisors	600 000 000,00	5%	
Team	3 000 000 000,00	25%	
Liquidity	1 800 000 000,00	15%	Locked for 18 months
Staking Fund	2 400 000 000,00	20%	
Marketing	1 560 000 000,00	13%	





	Valuation, USD				
Total tokens	12 000 000 000,00	120 000 000,00			
Token price	0,01				

Rounds	Sale price	Qty	Amount raised, USD	Nominal value of tokens, USD	
Early Bird/Seed Investors	0,004	240 000 000,00	960 000,00	2 400 000,00	2%
Private sale A	0,005	960 000 000,00	4 800 000,00	9 600 000,00	8%
Private Sale B	0,007	840 000 000,00	5 880 000,00	8 400 000,00	7%
Public Sale	0,01	600 000 000,00	6 000 000,00	6 000 000,00	5%
Total		2 640 000 000,00	17 640 000,00		

Token Sale Rounds	Locking	Vesting
Early Bird/Seed Investors	3 Months after listing	12 Months
Round A Sale	No locking	
Round B Sale	No locking	
Public Sale	No locking	
Token locks and vesting for team and advisors	Locking	Vesting
Advisors	No locking	24 Months
Team	24 Moths after listing	24 Months