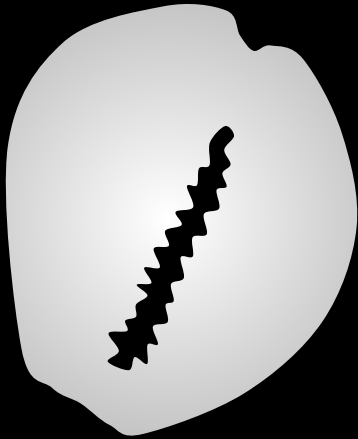


# THE EVOLUTION OF MONEY

@ANILSAIDSO



*"Contrary to popular misconception, money is not a government creation. Money is emergent — it is simply **the most tradable good** in any given market. "*

**-ROBERT BREEDLOVE**

# PHYSICAL

# DIGITAL

PRIMITIVE

PRECIOUS METALS

GOLD-BACKED

FIAT

PROOF OF WORK



DEPOSITED



RECEIPT

GOV'T ISSUED

TIME



## TOOLS

Arrowheads



## COLLECTIBLES

Cowry Shells



## COMMODITIES

Barley



# PRIMITIVE MONEY

*“Primitive money existed long before large scale trade networks. Money had an even earlier and more important use. Money greatly improved the workings of even small barter networks by greatly reducing the need for credit.”*

**–Nick Szabo**

*(Shelling Out: The Origins of Money)*



## SILVER

Silver Siglos Type I  
(c. 520-505 BC)



## GOLD

Gold Daric  
(c.490 BC)



# MONETARY METALS

*“As technology advanced, particularly with metallurgy, humans developed superior forms of money..”*

**–Saifedean Ammous**

*(The Bitcoin Standard)*

The relative difficulty of producing metals meant they were predictably scarce. The durability of metal was superior to shells, grains and beads. All of this contributed to the significant value placed on metals at the time, giving them high value density (portability).

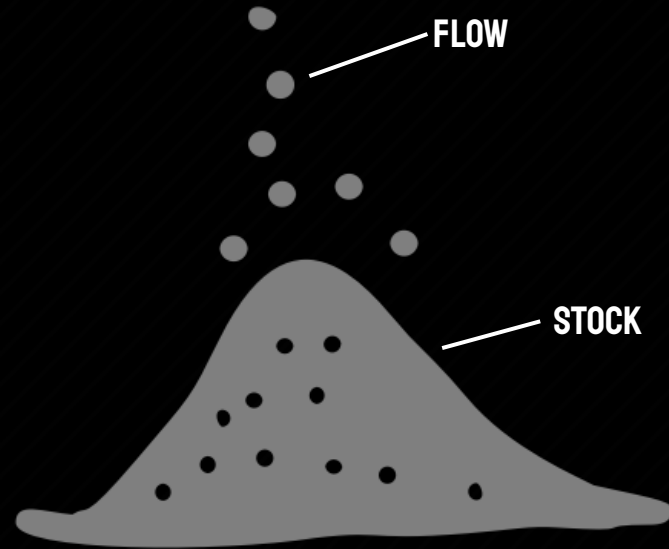
# STOCK TO FLOW

## A MEASURE OF ABUNDANCE

The rate of change at which new units of a monetary good are introduced into the existing supply.

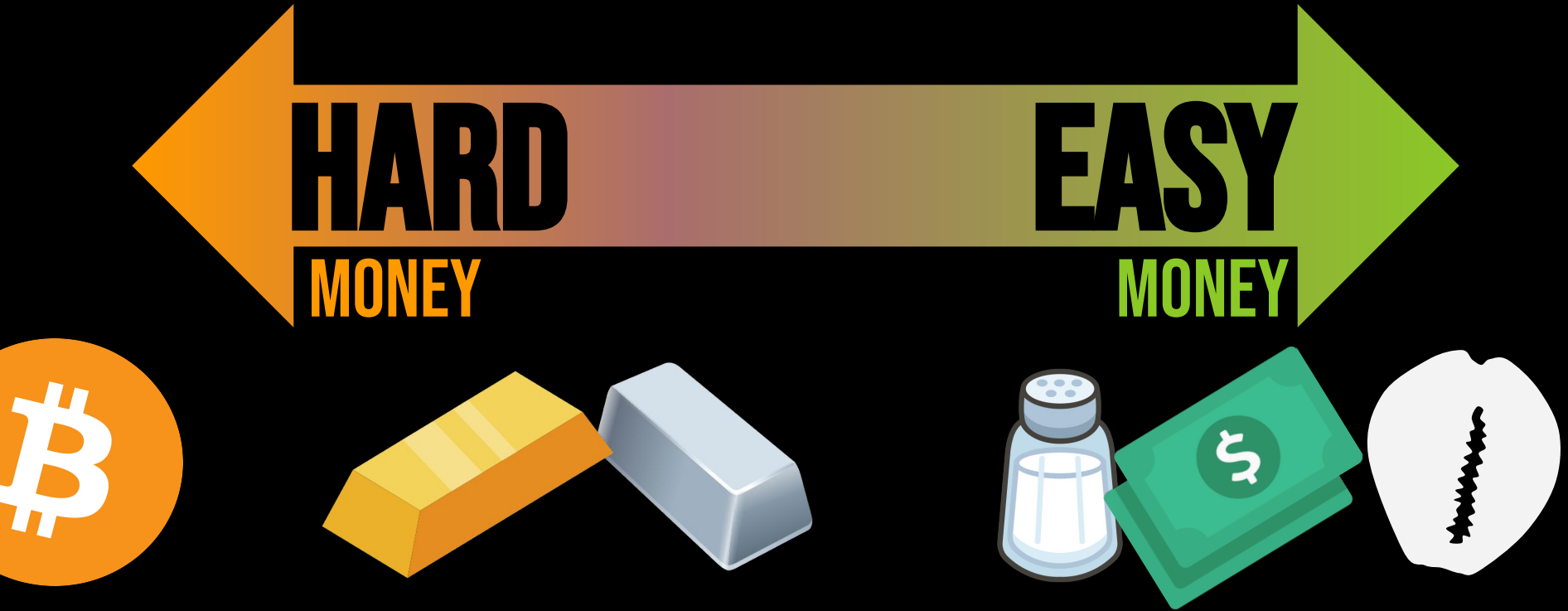
*“For anything to function as a good store of value.. it has to appreciate when people demand it as a store of value, but its producers have to be constrained from inflating the supply significantly enough to bring down the price.*

**-Saifedean Ammous**  
*(The Bitcoin Standard)*



$$\text{S2F RATIO} = \frac{\text{EXISTING STOCKPILE}}{\text{NEW ANNUAL PRODUCTION}}$$

The level of difficulty in producing new units of a money, relative to other forms of money, determines its hardness. This is not a static measure as technology is constantly advancing, relegating formerly hard monies to soft.



# CONVERGING ON GOLD

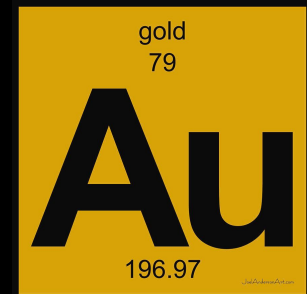
The free market eventually converged on gold due to two key attributes that protected its value reliably over long periods of time and across large parts of the world.



Cannot be **destroyed**



Cannot be **synthesized**  
from other materials



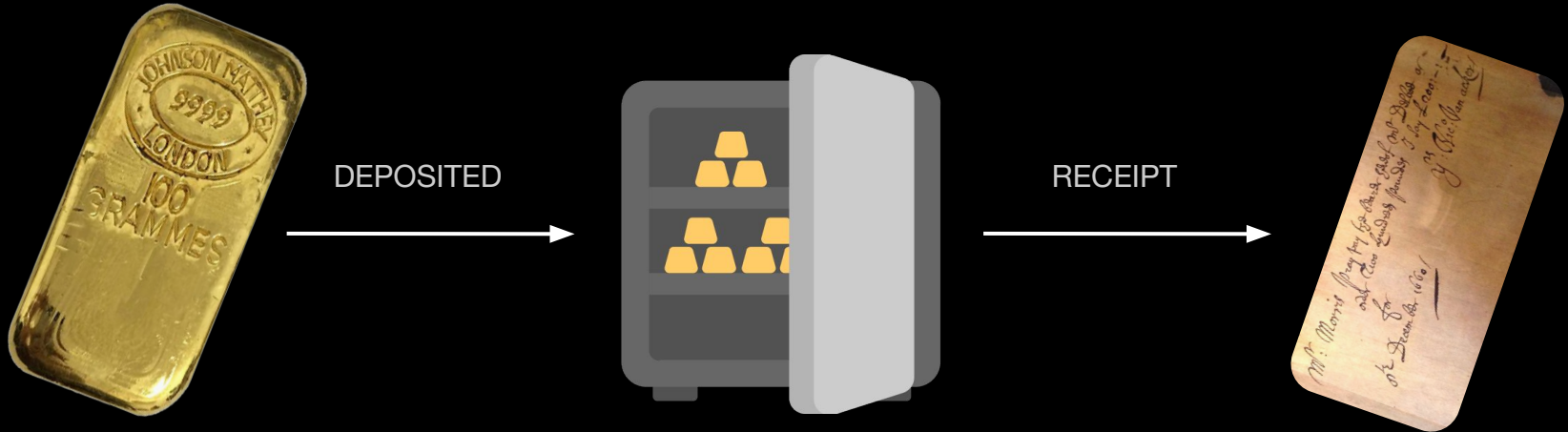




# THE ORIGINS OF PAPER MONEY BACKED BY GOLD

Gold could be minted into coins and bullion with standardised weights and purity. As trade routes expanded transporting large volumes of gold became more risky. Paper notes (redeemable for gold), were a convenient solution where trusted banks existed.

This differed from a promissory note or IOU which had been used for centuries prior. Paper receipts were bearer instrument and could be freely traded and redeemed by anyone.



*“When a man deposits goods at a warehouse, he is given a receipt and pays the owner of the warehouse a certain sum for the service of storage. He still retains ownership of the property; the owner of the warehouse is simply guarding it for him. When the warehouse receipt is presented, the owner is obligated to restore the good deposited. A warehouse specializing in money is known as a **bank**.”*

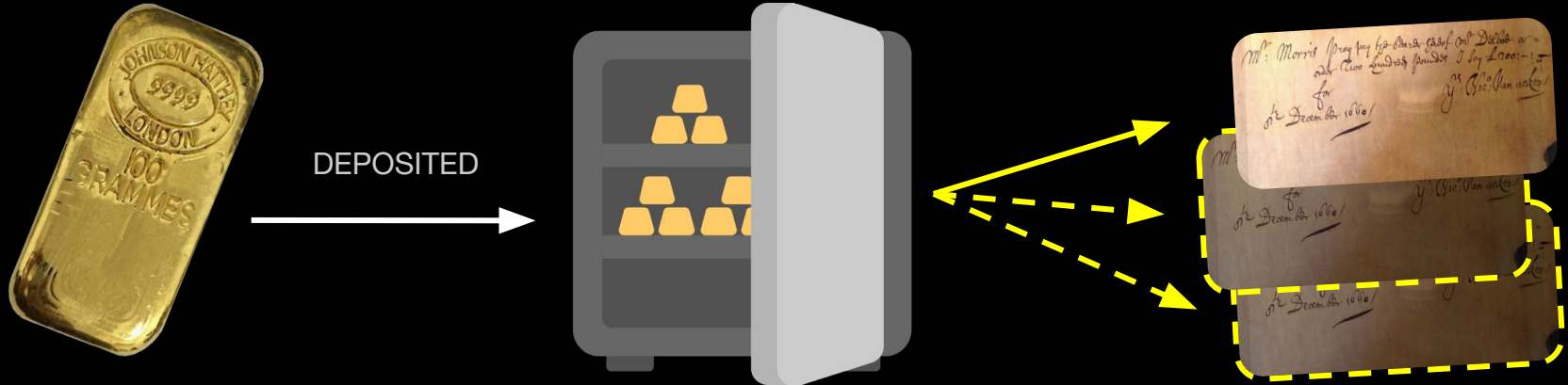
**–Murray Rothbard**  
*(Man, Economy, and State)*

# Bank

*(noun)*

# FRACTIONAL RESERVE BANKING

Gold storage came with a fee. However, by allowing a vault or bank to lend out your gold, they would pay you for the privilege. If deposits exceeded redemptions, banks would be tempted to increase their profits by issuing multiple notes (as 'loans') against the same piece of collateral.



# RUN THE BANKS

As banks and vaults engaged more brazenly in issuing IOUs in excess of their deposits, even small shocks in the economy could be enough to rattle the confidence of depositors.

When fears over an institution's solvency began to circulate it would set off a race among depositors to withdraw their money. The sudden drain of deposits en masse would expose an institution engaged in excessive leverage through fractional reserve banking.

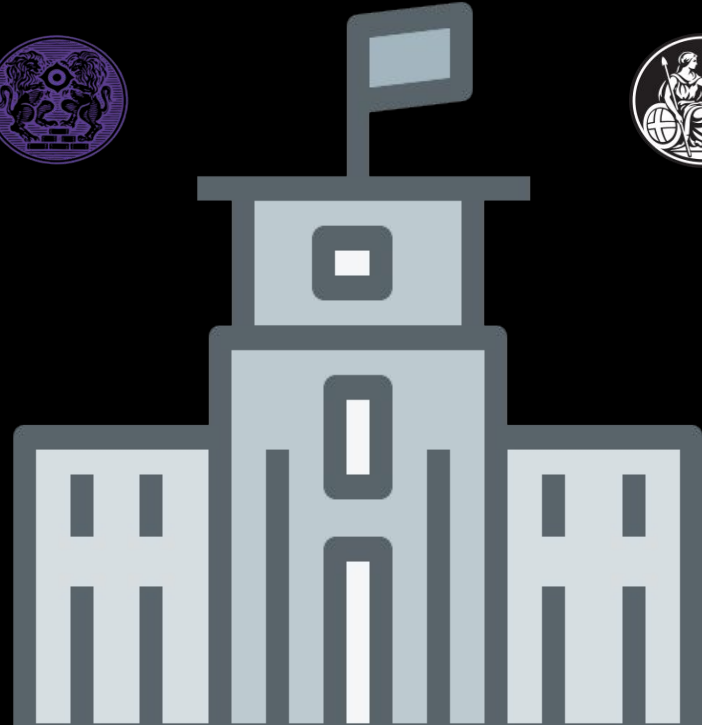
Such an event can naturally trigger systemic fears, drying up liquidity and bringing an entire financial system to a halt.



*Bank Run on American Union Bank,  
New York City, 26 April 1932*

# MODERN CENTRAL BANKING

Governments would eventually use the issue of bank runs, resulting from fractional reserve practices, as justification to end the private issuance of currency and establish their own national central banks. Such institutions were granted exclusive rights to issue banknotes, often backed by a set amount of gold, establishing a unified national currency. They would also become the 'lender of last resort', providing liquidity when required and reassuring citizens that their deposits are safe.



# FROM GOLD TO GOLD-BACKED

Although intended to be independent from govt, the gold peg was a hindrance to govt's who wished to borrow from the future for spending today (especially to finance wars not popular enough to fund via higher taxes)

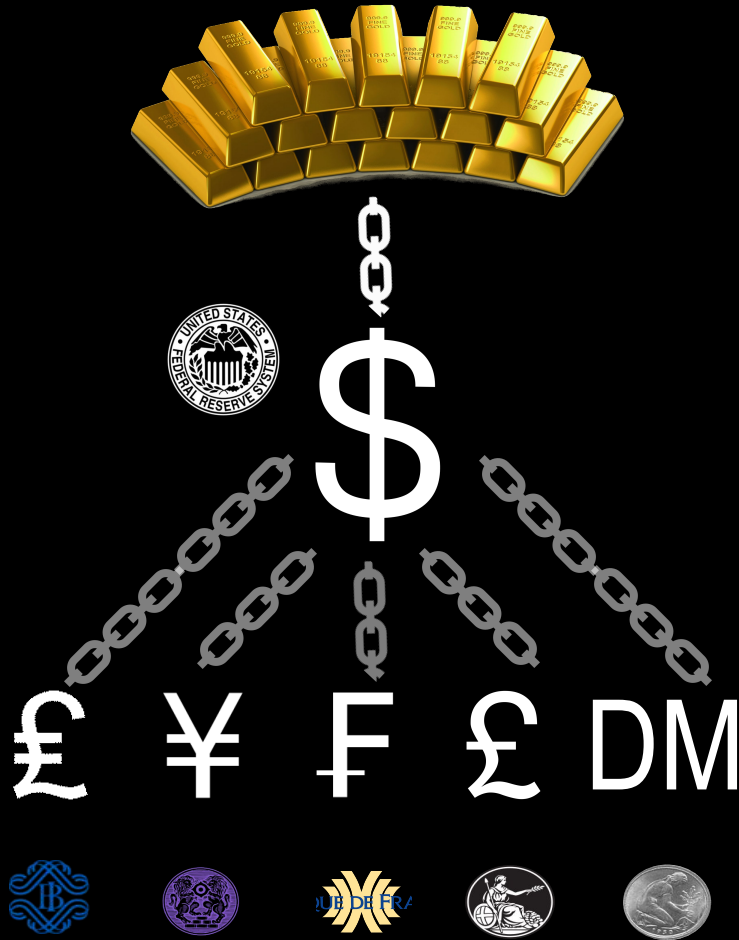


Gold as Money



Gov't Issued Paper redeemable in Gold

# THE BRETTON WOODS SYSTEM



 *Bretton Woods, NH, USA (1944)*

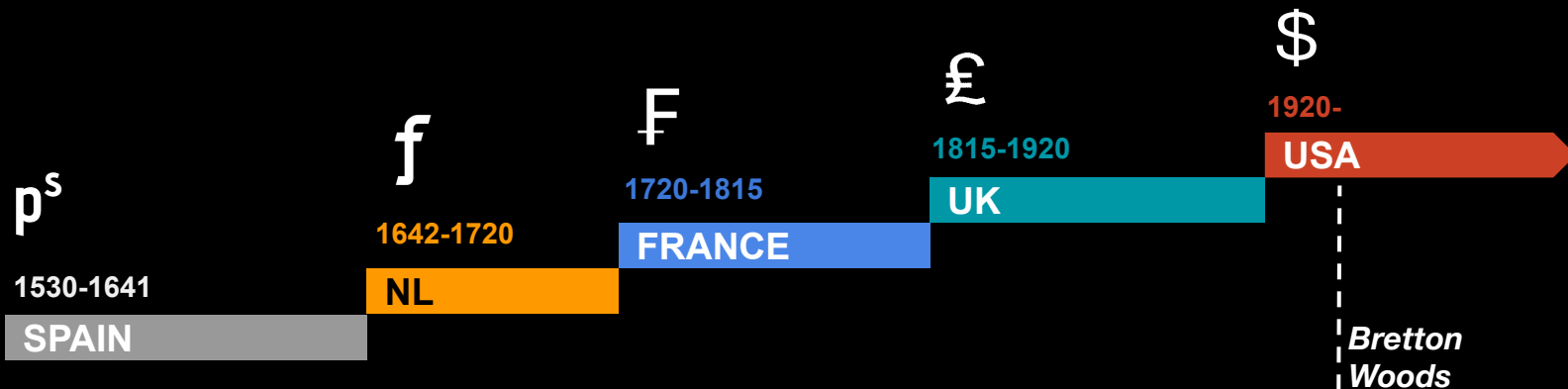
After two world wars, many economic superpowers were broke. The US now controlled  $\frac{2}{3}$  of the world's gold (as a result of net defense exports).

A new global monetary order would see countries pegged to the USD, with the USD pegged to Gold.

# THE GLOBAL RESERVE CURRENCY

## A CHANGING OF THE GUARDS

The global reserve currency acts as the preferred or demanded currency of settlement in international trade. Changes to this represent major geopolitical realignment. The dominant global currency has had a lifespan of around 100 years





# THE NIXON SHOCK



*15 August, 1971*

The end of the Bretton Woods system:

“Nixon directed Treasury Secretary Connally to suspend, with certain exceptions, the convertibility of the dollar into gold or other reserve assets, ordering the gold window to be closed such that foreign governments could no longer exchange their dollars for gold.”

**-Wikipedia**

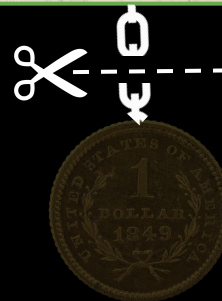


# THE *UNBACKING* OF GOVERNMENT MONEY

*Banknote  
Redeemable  
for Gold*

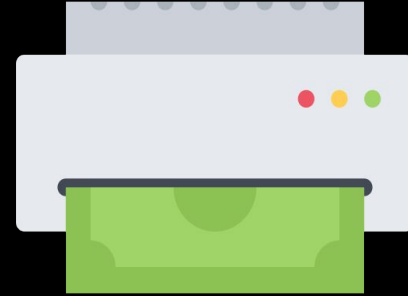


*'Fiat' Paper  
Currency*



# THE FIAT ERA

The word *fiat*, taken from Latin, translates to 'let it be done'. In the context of money, it refers to an authority (in this case a sovereign government) issuing a currency that is not directly redeemable for a fixed quantity of some asset. Its utility is often enforced by legal tender laws which require it to be universally accepted by merchants and the only currency accepted by the government for settling tax debts.



*"Federal Reserve notes are not redeemable in gold, silver or any other commodity, and receive no backing by anything."*

-U.S. Dept. of the Treasury

# FROM GOLD TO PAPER



Gold as  
Money

Bank-issued  
Paper Note  
Redeemable for  
Gold



Gov't-issued  
Gold Certificate

Govt-issued  
Paper Note  
Redeemable for  
Gold



Gov't-issued  
Notes (post-1933)  
Not Redeemable for  
Gold



# Physical

# Digital

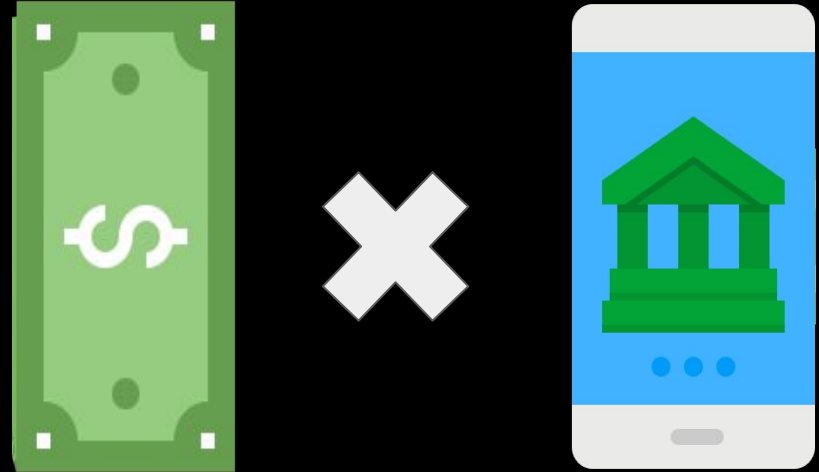


@anilsaidso

# DIGITAL FIAT

A digital representation of physical cash, digital fiat was enabled by the proliferation of digital communications networks, the growth of consumer devices & the standardisation of payments protocols.

Digital fiat is replacing physical fiat at a rapid pace thank lower costs, increased speeds & the increased capabilities for surveillance.





## PLASTIC CREDIT

The invention of the credit card gradually normalized the act of borrowing for consumption, something that impacts the time preference of users- optimizing for short-term consumption over long-term investment or saving for delayed gratification.

Today there are roughly **three billion** active credit cards globally.

**OVERDUE**

# THE **DOUBLE SPEND** PROBLEM



In the digital world, where the marginal cost of replication is zero, ensuring that the same digital unit cannot be spent twice by its owner was key to a monetary system operating without a central authority.

The coordination of trust among strangers requires the alignment of incentives between participants- rewarding honesty and making dishonesty prohibitively costly.

Several previous attempts were made to create a non-sovereign digital money, but each faced their own unique set of challenges. These lessons would all be taken into account by Satoshi Nakamoto to inform the robust design of Bitcoin.

<i>DigiCash</i>	<i>Cyber Cash</i>	<i>E-Gold</i>	<i>Bit Gold</i>
1989	1994	1996	1998





# AN INNOVATIVE SOLUTION

## Bitcoin: A Peer-to-Peer Electronic Cash System

Satoshi Nakamoto  
satoshin@gmx.com  
www.bitcoin.org

**Abstract.** A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network, they'll generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone.

### 1. Introduction

Commerce on the Internet has come to rely almost exclusively on financial institutions serving as trusted third parties to process electronic payments. While the system works well enough for most transactions, it still suffers from the inherent weaknesses of the trust based model. Completely non-reversible transactions are not really possible, since financial institutions cannot

*“I’ve been working on a new electronic cash system that’s fully peer-to-peer, with no trusted third party.”*

**-Satoshi Nakamoto**

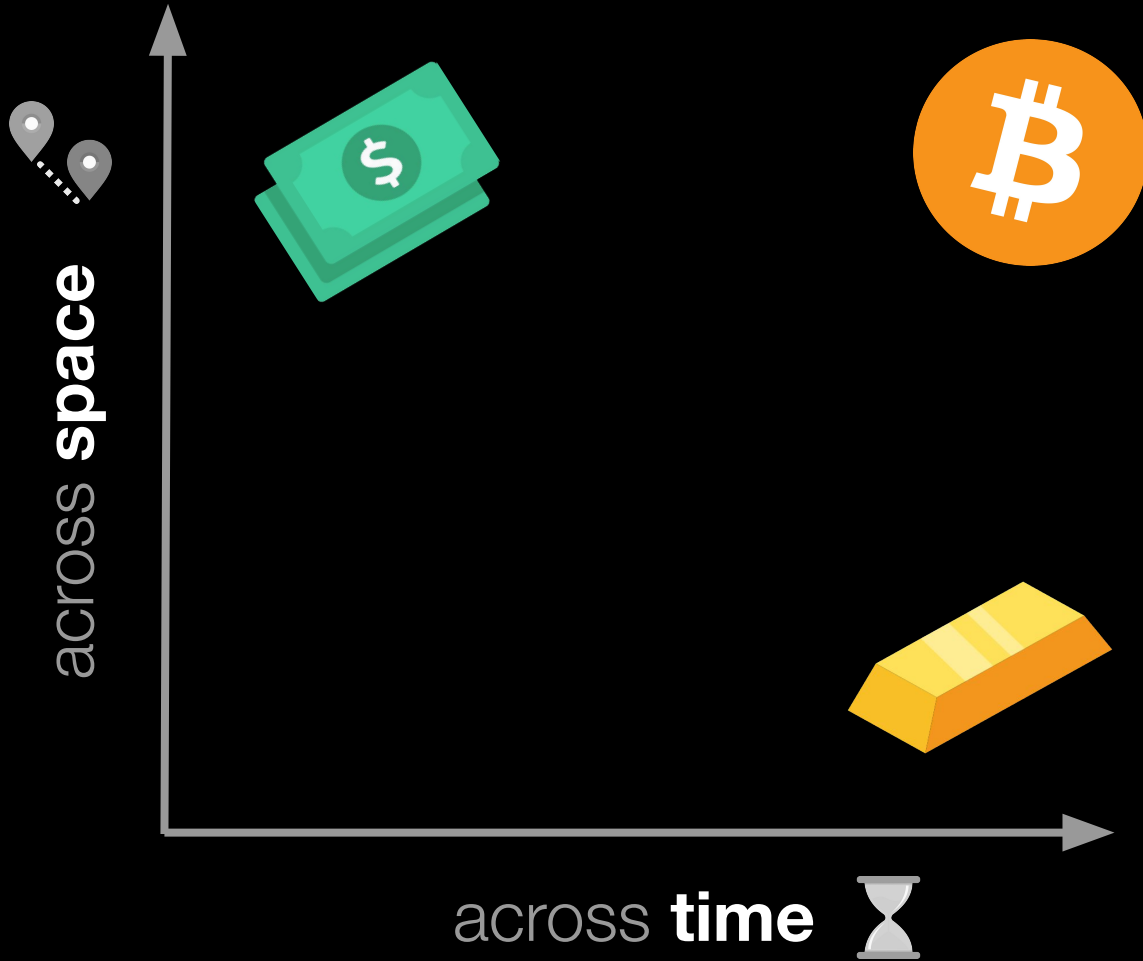


# HOW IT'S MADE

*“In the bitcoin network, only coins that have already been mined can settle transactions. In a gold-based economy, only existing gold coins can be used to settle transactions. With fiat, government credit allows nonexistent tokens from the future to be brought to life when the loan is made.”*

**-Saifedean Ammous (The Fiat Standard)**



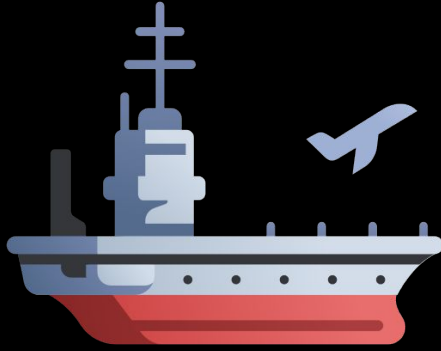
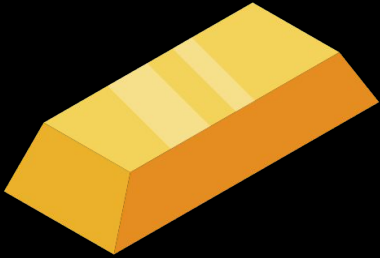
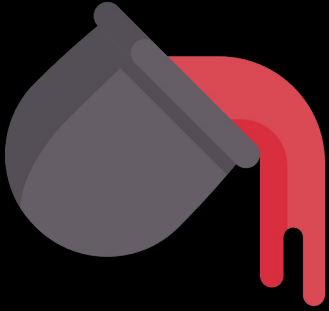


## **Salability** *(noun)*

The extent to which something can be easily sold.

“Money is, and always has been,  
**technology.**”

**-MICHAEL SAYLOR**



# THE **FIVE** CRITICAL TRAITS OF MONEY

According to Robert Breedlove, the '*most tradable good*' in an economy emerges as money. The criteria by which this is determined encompasses the following five critical traits →

1

## **SCARCITY**

Difficult to produce, resistant to supply manipulation/value dilution

2

## **DIVISIBILITY**

Units that can be combined or separated at various scales

3

## **PORTABILITY**

Density of value, ease with which it can be moved across space

4

## **DURABILITY**

Does not deteriorate, ease with which it can be moved across time

5

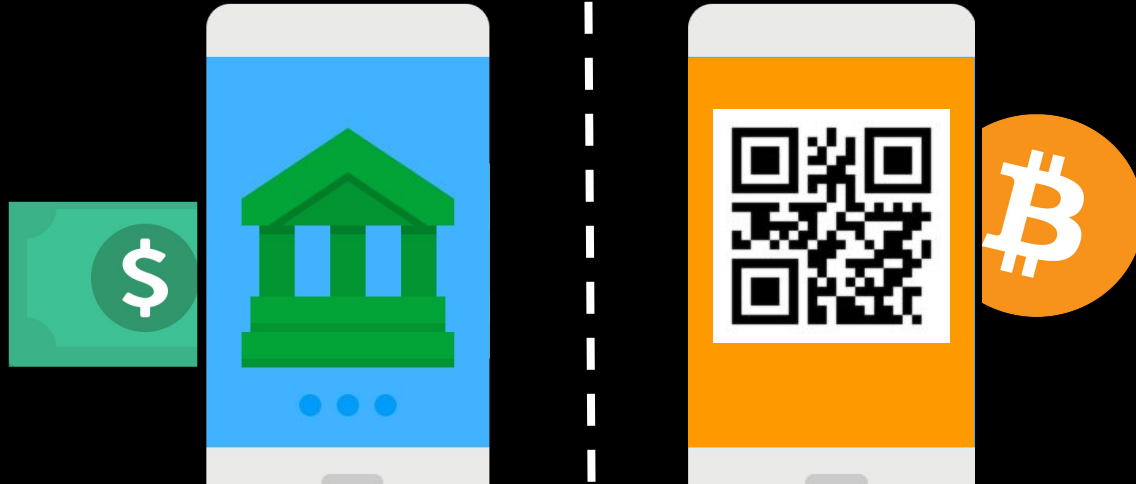
## **RECOGNIZABILITY**

Ease with which it can be identified and its value verified by others

# DIGITAL VS. DIGITALLY NATIVE

Digital fiat takes a product designed for the industrial age and translates that into a digital version, bringing with it all of the same bugs and restrictions. It's a closed system, heavily permissioned and designed to erode in value over time.

Bitcoin is a purpose-built money for the digital age—upgradable and open-source. It benefits from the ingenuity and innovation of all who build upon its foundations.





# CENTRAL BANK DIGITAL CURRENCIES

## THE RACE FOR MARKET SHARE

CBDCs do not compete directly with bitcoin as a store of value. They are instead competing with other forms of digital payment rails and currencies for market dominance in the digital age. CBDCs are neither decentralized nor permissionless.

A key factor in the emergence of CBDCs is the surveillance and censorship capabilities that it provides the issuer. Additionally, in the age of negative real rates, the widespread push for public adoption comes in tandem with the eradication of physical cash, helping to ensure that currency is devalued in real terms.



*“absoluuuuuuuuuuute  
control”*



*“A key difference with CBDCs  
is central banks would have  
absolute control..”*

**-Agustin Carstens**  
(General Manager, Bank for  
International Settlements)



**Anil**

@anilsaidso 