



image source, screenshot from https://www.youtube.com/watch?v=mXdxG3EkK_Y (bitcoin logo added)

fiat money is very effective

...although it may not be ethically managed

a minitalk for the Silicon Valley Ethereum Meetup 08-October-2017

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...distinguish ethics from effectiveness

.....The Times 03/Jan/2009
Chancellor on brink of second bailout
for banks.....

– ***Satoshi Nakamoto***

from the Bitcoin genesis block

- To me this signals an *ethical* concern (which I share!)
- However, during the financial crisis, fiat base money became more, rather than less valuable, relative to other financial assets and expected consumer prices
 - *Policymakers worried about deflation not inflation*

...distinguish ethics from effectiveness

- Common effectiveness claims about fiat money
 - *“it’s weak”*
 - *“governments are prone to debase it”*
 - *“it’s unstable”*
 - *“it’s doomed”*
- These claims are sometimes true!
- But.
- Fiat currencies are issued by states. Every state is different.
- These claims are almost never true of fiat currencies issued by
 - *strong stable states capable of taxing their citizens*
 - *with banking systems effective at encouraging widespread borrowing*
 - *with large, diversified domestic economies*
(and so the capacity to do with fewer imports if necessary)
 - *that borrow in their own currency, and do not have sizable debts in foreign currency*

...distinguish ethics from effectiveness

- For now, in my view, the fiat currencies of major economies beat every existing form of crypto hands down on effectiveness
 - *this might not be true of a sufficiently credible Tether-like stablecoin whose value is pegged to a fiat currency, but there the crypto is piggybacking on the effectiveness of the fiat*
- Existing fiat monetary systems are managed pretty unethically in my view, in ways that privilege some groups and harm others. A “good” crypto might well compete from an ethical perspective.
 - *although for the moment, the crypto space is so scammish I think it’s giving fiat a run for its money on unethicalness, albeit at a smaller scale so with smaller harms*
- I’m not “for” fiat as money or “anti” crypto. Current iterations of crypto are just ridiculously poor candidates for a dominant money, except maybe in countries that lack the capacity to issue credible fiat.
 - *it’s conceivable, although not very likely, that countries that now “dollarize”, formally or informally, could choose a crypto as an external unit of value rather than a foreign fiat*

what is money?

- The usual story
 - ~~Medium of exchange~~ Means of final settlement
 - Store of value
 - Unit of account
- In value-weighted terms, exchange of cash money is almost never the dominant form of exchange
- We issue *claims on money* and use those claims as our medium of exchange
 - *If that sounds abstract, consider what happens after you pull out your credit card*
- In most economies, final settlement in base money is relatively rare. Claims on money are reproduced and circulate indefinitely as media of exchange
 - *You pay your credit card from bank deposits, themselves a claim on base fiat money. The vendor you pay likely accepts and holds her payment as bank deposits.*

what is money?

- Even where there is no formal bank credit, in value-weighted terms, synchronous, atomic exchanges are the exception, not the norm
 - *You pay your rent in one shot for shelter services delivered over the course of a month*
 - *You pay a lawyer a retainer, from which she bills the hours she works over an extended period of time*
 - *You negotiate a contract with a construction firm, in which funds are delivered in advance and then in tranches as certain milestones are met*
- Asynchronous exchange has to manage two distinct problems
 - *Counterparty risk on both sides (will the buyer deliver the money? will the seller deliver the goods?)*
 - *Valuation risk (will the values that seemed sensible at contract initiation leave one party badly screwed and another with a windfall as the collaboration unfolds over time?)*
- Monetary systems that fail to manage both of these problems will leave parties reluctant to form high-value, over-time collaborations, severely limiting economic activity

what is money?

- Even where exchange is formally synchronous, we all (as individuals and as businesses) face real obligations that unfold over time.
 - *We are born “short” a stream of food, water, and shelter that extends indefinitely over time*
 - *Businesses have to anticipate future costs (payroll, raw material, maintenance) and future revenues in order to plan for the future*
- We want a unit of account that helps us to solve the ***economic calculation*** problem, that helps us to reason about our future receipts and obligations
- We want a unit of account and store of value that ***hedges our risk***, inherent in the fact that our contractual obligations and the prices of goods and services we require may fluctuate over time and leave us unable to meet our obligations.
- Monies that fail to enable economic calculation will prevent valuable enterprises that require complex work over time from forming. Monies that fail to hedge risk will leave humans too nervous for speculative enterprise.

what is money?

- The unit of account that we choose will sometimes form the basis our assets
 - *we will hold or contract for claims on this unit*
- But it will frequently form the basis of our liabilities!
 - *we will contract to make future payments in this unit*
- It will not be desirable for the value of this unit (in terms of actual goods and services) to unexpectedly collapse, as that *inflation* would devalue our assets
- But it will also not be desirable for the value of that unit (in terms again of actual goods and services) to unexpectedly spike, as that *deflation* would cause the burden of our liabilities, our debts, to balloon!
 - *People who want to profit from price fluctuations, who hope to speculate, can always invest in things they expect to spike. If they are wise, however, they will do only with what is left over after first hedging upcoming obligations!*

what is money?

- The sine qua non of money...

Money is defined by the unit of account in which obligations payable into the future get denominated

- An almost equivalent formulation, since human labor is (at least for now) the most prevalent thing for which people (directly or indirectly) contract is this...

Money is defined by the unit of account in which labor contracts are negotiated and priced

...usually everything else follows

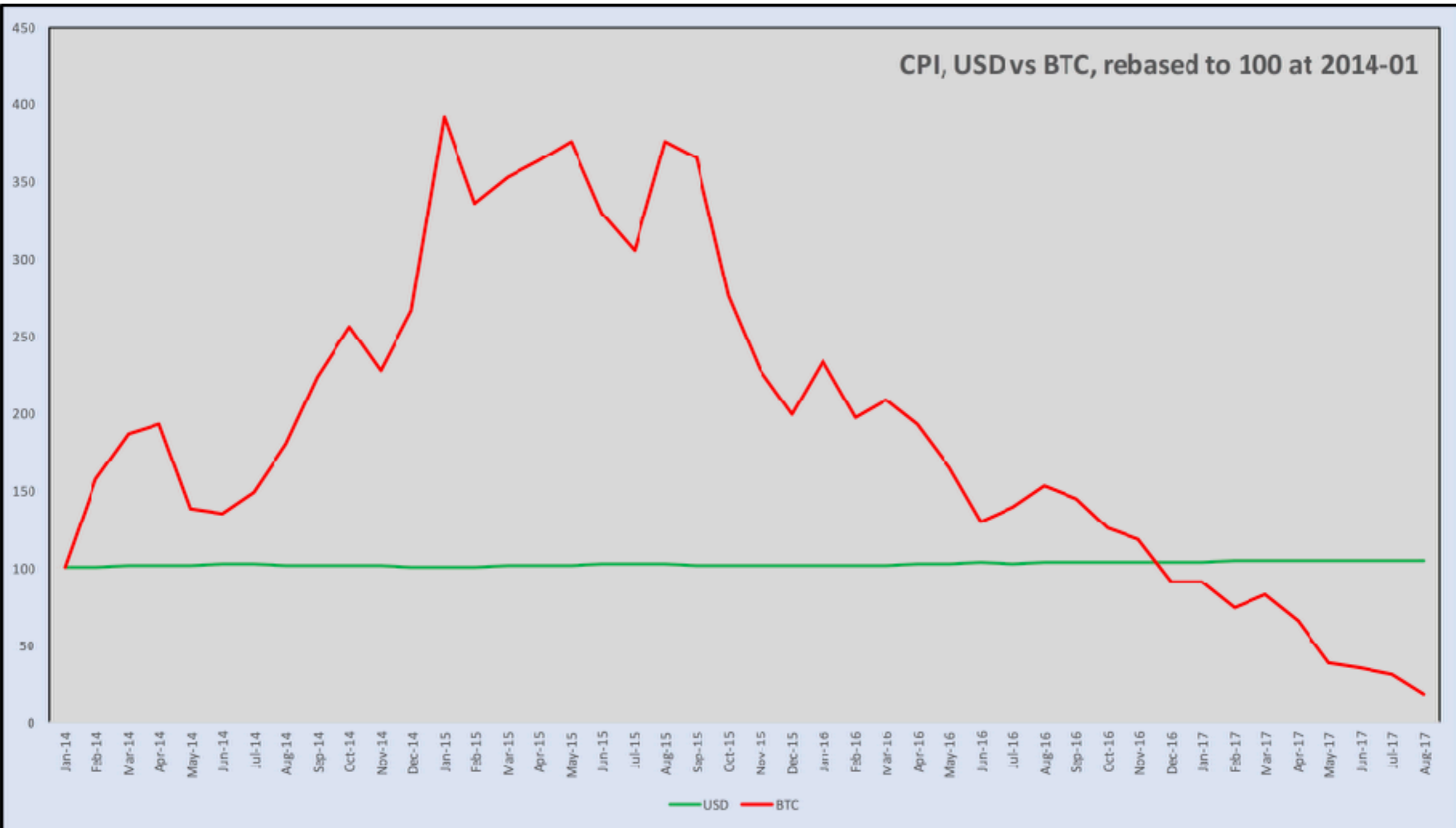
what is money?

- Note that “unit of account” is much more important than medium of exchange or means of final settlement.
 - *In some countries, contracts are negotiated in foreign “hard-currency” terms, but may be paid in a local scrip*
 - *Store of value usually follows unit of account. If paid in local scrip, people usually save in the currency their future obligations are contracted in, to hedge valuation risk*

fiat does price stability

- The Consumer Price Index (CPI) is an imperfect, perhaps politically distorted, measure of how much “ordinary life” costs for a typical household.
- There cannot be a perfect measure of such a thing, because there is no typical household. Each individual buys different things from different vendors, facing different prices and changes in prices, with different preferences and willingness to make substitutions as prices rise or fall.
- Nevertheless, imperfect measures are usually all we have and often very valuable, and for all the worries and conjectures about politicized statistics, over moderate periods of time, lots of strands of evidence suggest US CPI is a not-too-terrible imperfect measure.
- Let’s look at US CPI in US dollar terms and in Bitcoin terms since 2014.

fiat does price stability



CPI is extremely stable in USD terms. In BTC terms, depending on when you contracted to pay or receive coins, you were likely either badly screwed or received a windfall. Every contract is a currency gamble in addition to whatever else it is

fiat does price stability

- If you live in the US and are not especially atypical in what you buy, you can pretty safely adopt US dollars as the unit of account in which you negotiate your wages and/or obligations
 - *The value in terms of real goods and services of the future US-dollar-denominated amounts you negotiate is predictable*
- In the US (or anywhere else), you cannot negotiate wages or obligations in terms of BTC without taking huge chances on the value of those wages and obligations in terms of actual goods and services
- In the US, you could have effectively hedged your anticipated needs of real goods and services by saving US dollars at any time over this period.
- If you had stored value in BTC during January 2014 to cover anticipated needs of real goods and services in January 2015, you would have found yourself with roughly a quarter of the value you required and would have gone hungry. But if it was August 2017 needs you had tried to cover, you'd find yourself rich, with 5 times more purchasing power than you put aside.

fiat does price stability

- In part this is an unfair comparison, a self-fulfilling prophecy. Since the US dollar is already the dominant currency in the US, it is already the unit of account that contracts and wages are denominated in, which stabilizes the cost of producing goods and services in US dollar terms, at least over the short term. If BTC were the dominant money, prices of goods and services would be somewhat more stable in BTC terms by virtue of this effect.
- But that is a small part of the story. We know from the history of commodity money that despite denomination of contracts in a currency, prices of goods and services can fluctuate quite wildly.
 - *We'll take a look at the purchasing power of the dollar over the gold-standard era shortly*
- Fiat prices are stable ***because they are actively managed to be stable.***

fiat does price stability

- **States** — by virtue of taxation, issuance of new currency, borrowing, spending, and managing interest rates — can actively adjust the supply of their currencies and work to counteract fluctuations in demand in order to keep prices relatively stable.
 - *This requires continuous observation of actual conditions and intelligent adjustment across a varied range of instruments to those conditions*
 - *From a price stability perspective, conventional cryptocurrency’s “hard money” fixed supply is laughably unsophisticated and inadequate*
 - *Much of the (often deservedly) bad reputation of fiat money systems comes from the fact that states have many instruments by which to effect price stability. Choices of which to use, which are ultimately discretionary, create different distributional outcomes and pick winners and losers*
 - *States with a longstanding reputation for delivering price stability have an easier time of it, because widespread expectations of continuing price stability can be self-fulfilling. Central bankers like to crow that inflation expectations are “well-anchored”.*

fiat does capital-efficient reversibility

- Price stability is about managing *valuation risk*, and makes a money useful for economic calculation and hedging the risk humans face of finding themselves unable in the future to afford the real goods and services they require
- Fiat money banking systems also enable effective means of managing *counterparty risk*. Most obviously, payments are often reversible.
 - *If I have paid for something with a traditional credit card and believe the merchant has not adequately delivered the good or service contracted, I can dispute the charge.*
 - *In many cases, the charge will be reversed without any recourse to expensive litigation.*
 - *There is unnerving discretion (on the part of banks, who serve as arbitrators) in this process. On philosophical grounds, one might object that the procedure is insufficiently predictable or fair, or that it is distorted by bank and state objectives like discouraging forms of commerce declared illegal.*
 - *But it works “well enough” to enable commerce that otherwise might fail to occur for lack of trust*

fiat does capital-efficient reversibility

- Reversibility can be built on top of cryptocurrency systems, but most solutions require escrow, either directly or indirectly on the part of some guarantor of a transaction.
- Escrow is expensive: It ties up some party's capital that might otherwise be used productively.
 - *Somebody always pays the cost of escrow. For a guarantor, funds in escrow might be “productive use”, because she charges a fee to guarantee and so earns a return. But that just shifts the cost of escrow to whatever parties pay the fee*
- Cryptocurrency types often tout irreversibility or the absence of settlement risk as a feature, rather than a bug. And for some niche uses, that's right. Irreversibility helps enable commerce that states and/or banks might seek to censor by threatening reversal *despite* delivery of the goods or services contracted.
- But the vast, vast majority of commerce in well-developed states is not illicit. The benefits of reversibility are real, the costs to most buyers are rare or hypothetical. Sellers bear costs from reversibility, but those are offset by increased buyer confidence.

fiat does capital-efficient reversibility

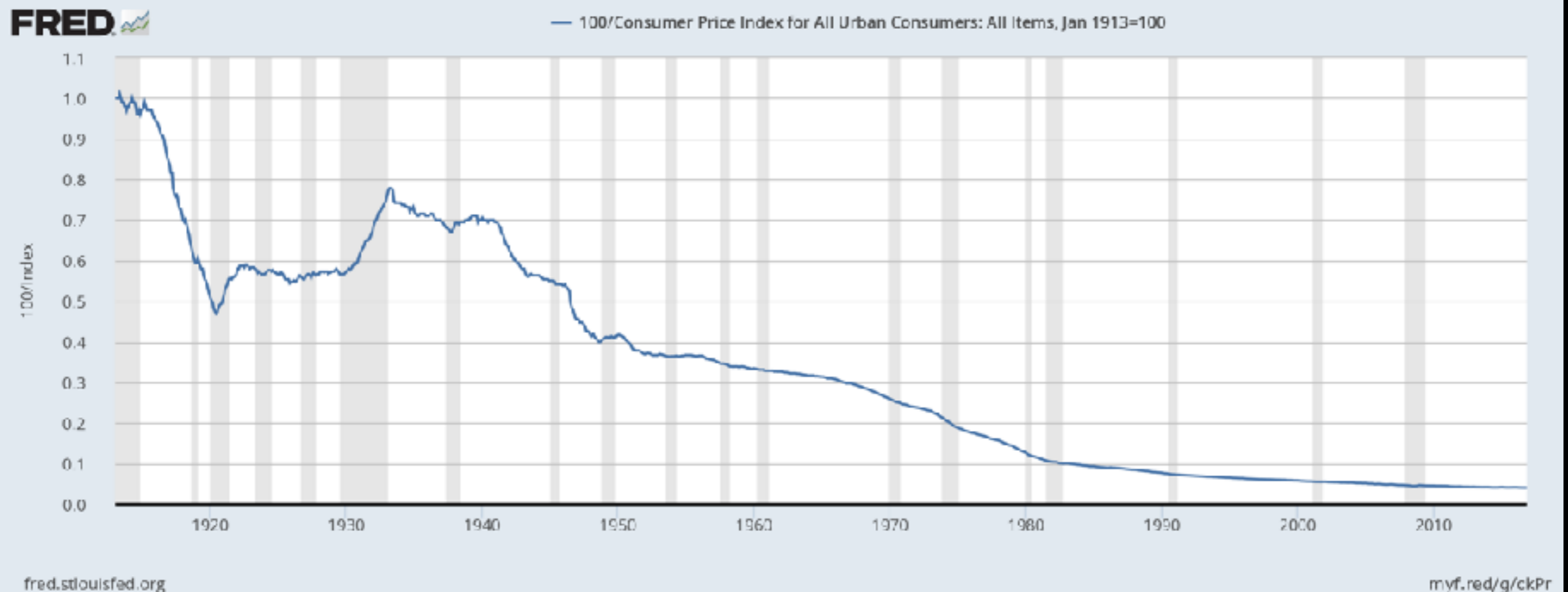
- Of course, it is possible that the costs of transaction censorship are actually huge, that if people were free to transact as they saw fit without fear transactions would be sabotaged by reversal (or confiscation, or disclosure to the state), there would be many more of these “niche” transactions and they would prove so economically valuable as to offset the benefits of reversibility with respect to counterparty risk
- However, there is little evidence for this counterfactual. In the real world, prosperity and commerce are *positively correlated* with intrusive, regulated banking systems, not negatively correlated as anarcholibertarians might predict.
 - *Correlation isn't causation. Maybe we observe this correlation because prosperous economies attract Randian “looters”, rather than intrusive, regulated banking systems greasing the wheel for commerce. While there is no doubt plenty of parasitism in modern banking systems, I think denying the importance of their role in enabling commerce among strangers at scale is obtuse.*

...more on the stability of fiat money

- **Compare and contrast:**
 - *Claim 1: “Paper money” always collapses to worthlessness. History proves that. The value of gold endures!*
 - *Claim 2: Every human dies, while rocks endure. So you are better off hiring a rock to be your dentist.*
- **Every fiat currency will indeed eventually collapse, because every state will collapse.**
- **During the eventual heat death of the universe, most atoms of gold found on Earth today will continue to exist.**
 - *Maybe you would still want them if you were there!*
- **In the meantime, on the time horizons relevant to us, fiat currencies usually work really well and the whole world has adopted them for good reasons.**
 - *But. This won't remain true if the preconditions for strong fiat cease to hold. (See earlier slide.) If you predict a political and/or economic collapse of the backer of your favorite fiat you should absolutely fear sudden devaluations. Sometimes you might predict this.*

...more on the stability of fiat money

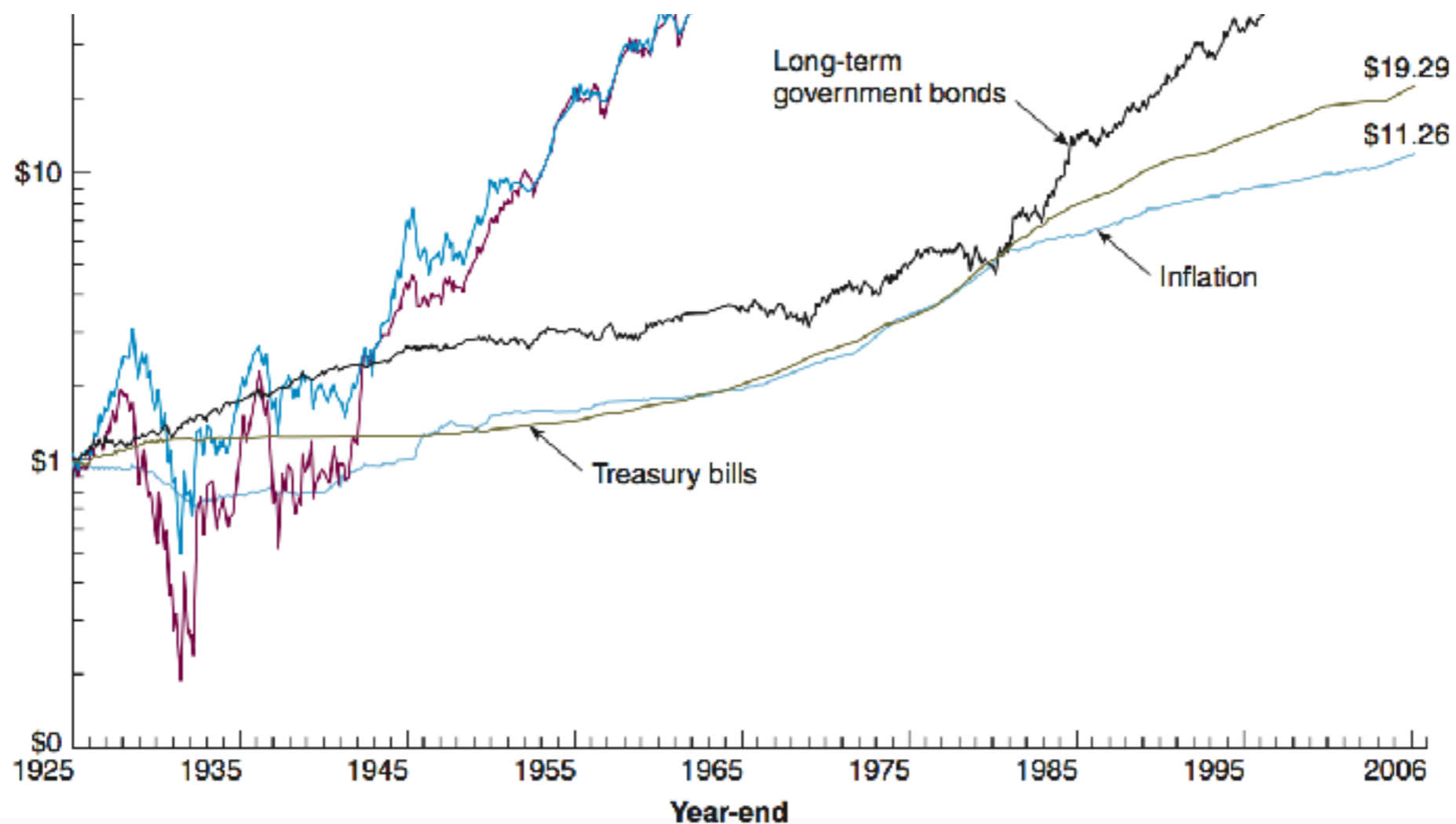
- But hasn't the purchasing power of a US Dollar collapsed by about 96% since 1913? Why yes, it has!



- If you've kept money in a mattress since 1913, you've been badly screwed.
 - *Do note, however, that the worst and sharpest screwing happened during World War I, under the gold standard, and the greatest "unscrewing" was the Great Depression. Good times.*

...more on the stability of fiat money

- However, if you held your money in anything interest-bearing, including short-term Treasury bills with no-credit-risk, you've at least almost doubled the purchasing power of your money!



...more on the stability of fiat money

- “Price stability” in current practice is defined dynamically, not statically
- It retains the essential feature of price stability: ***the price level, over the medium term time horizon of economic planning, should be predictable***
- However, rather than staying constant (the most intuitive notion of stability), under dynamic price stability, prices are publicly targeted to rise at a predictable constant rate (typically 2% per year, under current practice)
- There are solid economic reasons to prefer this “dynamic price stability” to a system in which the purchasing power of the currency remained fixed.
- In particular, wages are famously “sticky downward”. In theory prices fluctuate freely, and must vary up and down with economic conditions. In practice, labor is different, humans don’t accept wage cuts happily, firms lay off workers to reduce labor costs rather than cut individual worker wages

...more on the stability of fiat money

- With dynamic price stability, after some boom has raised wages to a level inconsistent with full employment, once the boom subsides, “wage cuts” can be delivered by simply failing to provide annual raises that keep up with inflation. In practice, the humans more easily accept this.
- Under dynamic price stability, you might imagine that during “ordinary times”, prices, wages, and money held in bank accounts or short-term Treasuries all increase by the same 2% per year. This holds the purchasing power of wages and saved money constant.
- However, in extraordinary times, like during a recession, wages might rise more slowly than 2% (translating to a cut in real terms) and interest rates might decline to less than 2% (creating more incentive for savers to either spend more money or invest it in riskier but more productive ways).

...more on the stability of fiat money

- People who complain that fiat money systematically screws savers are badly mistaken. In practice, fiat money systems more usually err on the side of overcompensating savers.
 - *We saw that between 1925 and 2006, enjoyed increases in purchasing power of more than 70% for holding fiat money in short-term Treasury securities – not meaningfully invested, bearing no more risk than they would by holding cash.*
 - *The “mattress tax”, the value lost on funds literally held as paper currency, relatively minor (on the order of 1% of Federal expenditures), and arguably desirable as a tax on illicit activity and failing to participate in the investment process.*
- Stronger cases can be made that currently dominant fiat systems have screwed workers (through silent wage cuts that might otherwise have been resisted) and borrowers (if savers have been overcompensated, borrowers have been overcharged)

...summary

- Fiat money systems are extraordinarily effective. They rule the world. You may or may not like them, but you measure your wealth in fiat money.
- Fiat currencies are like humans, many fail, but those that succeed succeed extraordinarily.
- Over a period of centuries, economic development and military power have gone to states that have been able to simultaneously relax the constraints of commodity money while retaining the credibility to borrow in their own currencies.
 - *The British “Pound Sterling” has not bought a pound of sterling silver for a very long time. If you want a simple explanation for how some little rainy island came to rule much of the world before World War II, look to the Bank of England, which mastered the art of opportunistically offering, then suspending, then restoring, then eliminating, convertability (to gold, not silver) meet military and economic objectives while retaining investor credibility.*

...summary

- Fiat currencies are not “backed by nothing”. They are backed by the labor and assets of all the humans who have obligations to pay in fiat, by the power of the state to coercively create such obligations via taxation, and by the ingenuity of banking systems at seducing people to voluntarily accept obligations to repay fiat
- Fiat currencies are no more “created from thin air” than you create money from thin air when you make a purchase with your credit card
 - *You do, actually, create a medium of exchange from thin air when you make such a purchase! But you are disciplined in that money creation process by the consequences that would befall you if you failed over time to sustain the credibility of that medium (collection letters, bankruptcy, shame, poverty)*
 - *States issue money from thin air subject to quite similar constraints. If they are incautious, their currencies collapse and their leaders risk shame, revolution, prison, beheading*

...summary

- Fiat currencies are worrisome not because they are ineffective, but because they are so effective. The management of fiat provides state actors with incredibly powerful, ultimately discretionary, tools which significantly affect who wins and who loses and how equal or unequal a society is. Fiat money and associated banking systems are the technology that enables the finance of war on scales that would have been unimaginable a few centuries ago. Price stability, the primary advance fiat offers users over other forms of money, is often purchased at the expense of workers and the unemployed, on behalf of those who have the luxury of worrying about economic calculation for their businesses or hedging with their savings horde
- The case *against* fiat is an ethical case, much more than an effectiveness case. Cryptocurrency enthusiasts who pretend that fiat money can be superseded by a “technically superior” alternative usually both misunderstand the problem, and fail to understand or appreciate even the technical strengths of the target they claim to be on the verge of “disrupting”