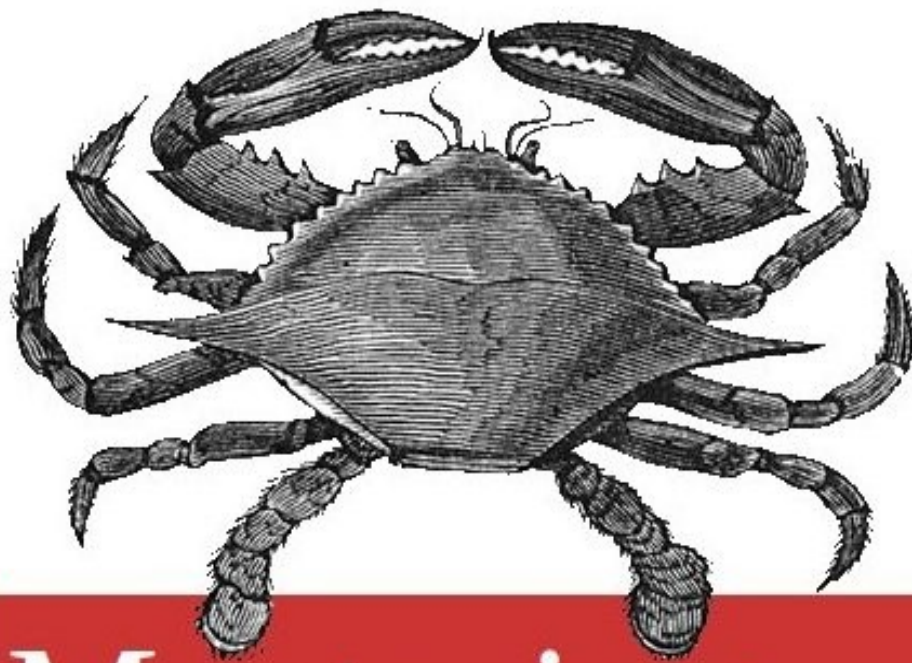


*A Coin Users Guide To*



# Mastering Fiat

*Navigating Legacy Financial Systems*

*Andro Antonopoulos*

# MASTERING FIAT

Andro Antonopoulos



Tokyo, New York, Boston, Paris, Berlin, Moscow, Beijing

# Preface

Most of us are familiar with transparent decentralized public currencies and use them daily as our preferred medium of exchange. While we might not understand all the details, we understand that the money supplies are public and the protocols are documented and open source, regulated by public oversight and cryptographic security. Here however we are concerned with another type of system: corporate fiat currencies.

There was a time that these were the most commonly used exchange commodities in the world. They were continually advertised and promoted by their purveyors. However the methods used in promoting, distributing, and transferring these currencies were not designed to appeal to reason. How can this be? In fact many of human endeavors follow this pattern. It is rare that our behavior is based on rational decision making. More often, human behavior appears to be based on tradition and habit, or on brute force.

Despite the horrendous negative effects of these systems and their limited lifespan and utility in the current era, many are still in use as of the writing of the monograph. It is likely you will find a use for them, or even feel forced to use them. For this reason I have put together this guide to the basic components of a fiat currency. It is my hope that you will learn not only how to better navigate these legacy systems, but also something about human nature and how to improve our organizational structures for the future.

# Chapter 1. Introduction to Fiat

*“It had been justly stated by a British writer that the power to make a small piece of paper, not worth one cent, by the inscribing of a few names, to be worth a thousand dollars, was a power too high to be entrusted to the hands of mortal man.”*

*[John C. Calhoun, speech, U.S. Senate, Dec. 29, 1841]*

## What is Fiat?

Fiat currency is a term which refers both to virtual currencies produced and controlled by private corporations, and to the physical tokens which can represent these virtual currencies. The discerning features of a fiat currency, both in physical and in virtual forms, is a near zero cost of production for the producer, and no means of verification.

## Physical fiat tokens.

A user of physical fiat tokens is by default fully anonymous, and able to trade the tokens for commodities or services if he or she can find a partner willing to accept it. It is for this reason that fiat tokens are commonly associated with black market and criminal activity. Economists in the late 20th century estimated that well over 90% of all physical fiat tokens were in the black market. A user of physical fiat tokens is also able to duplicate the tokens, a property we call counterfeitability. In practice, the private companies which produce the tokens wish to keep this practice by others at a minimum and so attempt to make it costly or difficult. However this is in conflict with maintaining their own ability to produce the tokens and near zero cost. The resulting effect we refer to as a whack-

a-mole system, as the controlling entity cannot truly stop reproduction of the physical tokens but only can stop individual players who get caught. Running such an organization is very difficult because all the employees and users of the production systems have a strong incentive to utilize it for their own benefit. Again this must be prevented with whack-a-mole security.

The supply of physical tokens circulating is, like any other physical good, not publicly auditable. For the case of physical elements such as precious metals we know the supply is capped and can at least make some estimates as to the amount in circulation, though these estimates are subject to large error. However, fiat tokens have no cap to the supply. Monetary theorists sometimes refer to estimates of the supply of physical fiat tokens in circulation as “M0”. M0 is roughly the equivalent in the fiat world to the total supply of a public coin, with the important difference that a public coin has a money supply publicly verifiable, whereas fiat M0 can never be directly observed but only estimated.

The preferred medium for physical fiat tokens is paper, due to its low cost. To make counterfeiting by other parties more difficult, the controlling company will use exotic printing and marking devices which they hope will be hard to reverse engineer.

In addition to paper, metals are also used. Metal tokens are long lasting and convenient, and inspire confidence due to the cosmetic similarity to older systems based on precious metals. Most metallic fiat tokens in circulation today are made of zinc due to its low cost and machine-ability. For this reason, some people refer to physical fiat tokens as “the zinc standard”.

## Virtual Fiat Tokens

Most of the fiat currency used is in virtual form. This is easier for the users as they are not required to carry cumbersome physical tokens, and also cheaper for the controlling company to produce. However it limits the anonymity for most users and creates even further incentive for embezzlement and fraud by members of the controlling company's network. At the height of the fiat era scores of companies were in business enabling transfers and storage of virtual fiat. This was a hugely profitable business not because of charging fees for participants but because at every step the possibility of creating extra virtual tokens as profit exists.

Because of the incentive to create more virtual tokens, the supply of these inflates even more rapidly than the physical fiat token supply M0. Economists refer to the amount of virtual tokens at various levels as M1, M2, and M3. Roughly speaking, M1 includes only other physical tokens which represent the fiat (such as travelers checks), while M2 also includes those virtual tokens which are claimed to be liquid (readily spendable) such as checking accounts. M3 includes all of the above as well as more exotic illiquid balances which list quantities of fiat. As we move up this hierarchy of fiat money supplies our knowledge of the total amounts in question only becomes harder to estimate. It is worth pointing out again that at no level are these amounts verifiable.

## A Very Brief History

The history of fiat and monetary systems in general is far too vast and interesting to do it justice here, but a few points might be useful. Some people might date the first fiat currency with the early use of paper money in China. However the practice of marking of metal coins is also an introduction of fiat

currency use, as often the coins are then devalued by making them less heavy than marked or less pure in metal. This practice was common in the time of the Roman empire. Others have described the beginning of fiat currency as the start of fractional reserve banking, with paper notes being issued which were redeemable for other hard assets. Some people point to 1971 as the marker of the fiat era as that was when it became official that the US dollar was a fiat currency. In fact, the idea of “backing” paper with the promise of a hard asset is already sign of a fiat currency, as the availability of enough of the asset in such a system is impossible to verify. Every fiat currency has its own history, though often it is difficult to know the details of the history due the incentive for the producers to keep the history hidden.

## Chapter 2. Why should I use Fiat?

*“It is well enough that people of the nation do not understand our banking and monetary system, for if they did, I believe there would be a revolution before tomorrow morning.”*

*[Henry Ford]*

### Corruption Can Pay

A wise man once said that the only thing better than eliminating corruption would be to be included in the corruption. The most obvious reason to use and even promote fiat currencies, is that you can profit from doing so. If it were only a few people that took the profit from the corruption made possible by fiat currencies, nobody would stand for it. Instead the individuals and companies which control fiat currencies are set up like a pyramid, in which a few people profit enormously but a lot more profit a little bit, or at least are made to believe they do. This enables a certain stability.

A quote might be relevant here, this time from Kurt Vonnegut's book “God Bless You Mr. Rosewater”. The context is that the character is positioned high up on the fiat pyramid and is explaining how it works:

*“The what?”*

*The Money River, where the wealth of the nation flows. We were born on the banks of it. We can slurp from that mighty river to our hearts' content. And we even take slurping lessons, so we can slurp more efficiently.*

*“Slurping lessons?”*



*From lawyers! From tax consultants! We're born close enough to the river to drown ourselves and the next ten generations in wealth, simply using dippers and buckets. But we still hire the experts to teach us the use of aqueducts, dams, reservoirs, siphons, bucket brigades, and the Archimedes' screw. And our teachers in turn become rich, and their children become buyers of lessons in slurping.*

*"It's still possible for an American to make a fortune on his own."*

*Sure—provided somebody tells him when he's young enough that there is a Money River, that there's nothing fair about it, that he had damn well better forget about hard work and the merit system and honesty and all that crap, and get to where the river is. 'Go where the rich and powerful are,' I'd tell him, 'and learn their ways. They can be flattered and they can be scared. Please them enormously or scare them enormously, and one moonless night they will put their fingers to their lips, warning you not to make a sound. And they will lead you through the dark to the widest, deepest river of wealth ever known to man. You'll be shown your place on the riverbank, and handed a bucket all your own. Slurp as much as you want, but try to keep the racket of your slurping down. A poor man might hear.'*

By necessity, much of the infrastructure in a fiat system is secret and lawless. There is very little I can tell you about the higher levels of any fiat pyramid, especially if I actually knew anything about them! Each fiat currency has its own hierarchy and players, and it is far beyond the scope of this guide to go into the details of each.

Instead we can enumerate a couple of the methods of getting a piece of the action lower down in the pyramid, and the risks associated with these methods.

## Loans

One way new virtual fiat tokens are created officially or legally is via loans. Loans in the fiat world are

essentially virtual fiat tokens given out to recipients (borrowers) by those who can create fiat tokens at no cost (lenders). Often a separate pyramid structure exists classifying different lenders, as some lenders will not be able to issue themselves but must borrow from other lenders higher in the pyramid. The reason a lender would agree to this arrangement is that an interest rate is then charged to the borrower, which can provide a needed income as well as legitimize the operation. If a borrower plays his or her cards right, he can borrow money and get a piece of the corruption in the form of newly issued virtual fiat. The trick is to make sure other income is available so that the interest payments required can be met, and that these payments will wind up being less than the income due to general inflation caused by the introduction of new fiat throughout the whole economy.

While it may sound easy, the truth is that the world of loans is difficult to navigate. Many are caught unawares by high interest rates and wind up in a net loss. Others are forced to continually borrow to pay off the interest of previous loans. The charging of interest rates on loans is also known as “usury” and in some places it is considered a crime. We should note that usury and lending are by no means unique to fiat currencies. Hard assets such as public coins can also be lent out at interest, but in this case of course they are not issued at zero cost by lenders but obtained through previous relationships.

If you have no way to prove to a lender that you can make interest payments, you will have difficulty convincing them to issue you a loan. Generally, one can attempt to find one's place on the pyramid by looking at the interest rates available to them. The lowest levels of the pyramid are forced to pay the highest interest.

## Investment Vehicles

Sometimes the company in control of a certain fiat currency will make it clear that they will be investing newly issued currency in certain investment vehicles. The idea is that some fraction of the population will also invest in that vehicle, and will get returns due to the continued “pumping” of the asset by the controlling company. This allows you to get a piece of the action simply by holding the asset in question.

This also might sound easy, but again in practice it is difficult. One can never know exactly what the fiat issuing company has plans to do, and so the pumping of newly issued fiat into the asset class could stop unexpectedly leading to massive losses. Further, the ownership of any asset has further risks. Often counterparty risk is required to hold the asset, leaving the investor in the hands of another set of folks who could defraud them (see Chapter 3).

## The Merchant is Always Right

Wanting a piece of the corruption is not the only reason to use fiat currency. Another is that as a customer, one must have respect for the merchant. Merchants have their own histories, debts, and contracts, and it is not our job as customers to judge their pasts. If they only wish to sell their goods or services for some given fiat currency, we will need to obtain some of it or go elsewhere. Chastising merchants for their requirements is impolite and can be counterproductive. This logic applies to all kinds of merchants, from street buskers to landlords to supermarket owners. In essence, you may need to trade your public coin or other hard assets for some fiat to satisfy these merchants. When you do so it will be necessary to at least briefly hold some fiat.

## A Moral Dilemma

Perhaps you have seen the devastation to human society, science, and our ecosystems that has resulted from the previous use of fiat currency and the corruption that results from the unchecked power given to fiat providers. Perhaps you object to the conditions of debt slavery that were enabled from such a system and the horrendous waste of resources produced by the massive thefts. However, imagine that before you stands a man requesting zinc fiat coinage, and he truly believes he needs it to obtain necessities. He might also believe that your gift or refusal is indicative of your respect or disrespect. What do you do?

This is a difficult question which must be answered separately in every context. I cannot answer it for you. The choice of how much or little to participate in these systems is yours alone. Contemplate the choice carefully. One must respect tradition and show respect to others but also educate others and consider the risks to your own immediate finances as well as the effects you wish to have on the future.

Another important point to consider when dealing with these issues is that the people involved are just that: people involved. It may be tempting at times to blame individuals for the problems the system has caused. Behaviors may seem inexplicable and rude, so be prepared to be shocked. Don't do anything rash or blame people for having been affected by a lifetime, or even generations, of what some call debt slavery.

## Language and Mechanics

Like all currencies, each fiat has its own nomenclature and language. Just as you might be familiar with satoshis and millies, doge and litecoin, you will need to learn words that apply the the fiat currency you intend to use. From haepennies to shillings, bucks to grands, there are many terms and units associated with fiat. When physical fiat tokens are used, different terms apply to each denomination. Learn them and become familiar with the ways of shifting from one to the other. You will also need to learn to store these tokens unobtrusively on your person, in ways so that they are accessible at the times you need them. Depending on the location, it might be required that exactly the right combination of fiat tokens is available. Be sure to check beforehand not only that the amount is ready but that the exact form required by the merchant is ready.

Like many commodities, the most common way to obtain physical fiat tokens is to initiate a relationship with somebody who already has them. Many coin users prefer to find a friend or family member who is proficient with fiat and deal with them directly to avoid further hassle of establishing other contacts. However if it is required to go so far as to use virtual fiat yourself, you will need to keep relationships with those who operate virtual fiat transfer and storage shops such as banks. You will need to learn their language and behave as they expect of you. Yes it sounds silly, but behavior and dress can be crucial in these relationships. It is usually wise to have multiple such relationships because sometimes a single one can be unreliable (see Chapter 4). The customs associated with all these relationships vary considerably from place to place and are often combined with other traditions. Typically you will want to minimize your exposure to these traditions, for financial reasons as well as to avoid wasting time.



# Chapter 3. Pitfalls of Fiat

*“Give me control of a nation's money  
and I care not who makes the laws.”*

*[Mayer Amschel Rothschild]*

## Unverifiability

One of the most striking features of fiat when a public coin user first uses it is that all numbers are completely unverifiable. Not only the money supply, but also every transaction! If one is not careful this can lead to great mishaps. Very often business and individuals will report financial figures such as earnings, income, losses, costs, etc. One must be very careful to realize that these numbers are extremely malleable and if an incentive to change them exists, they probably will be changed. Don't put stock in any such numbers, regardless of where you might have heard it. Transactions in virtual fiat are never publicly confirmed and one must always trust a third party as an ultimate arbiter. This property is sometimes referred to by saying fiat is “discretionary”.

Due to these problems, some people attempt to verify numbers with third party audits. Sometimes this is called “regulation”. This generally is a continuation of the whack-a-mole type security that fiat producers use to stop counterfeiting. Unfortunately this does not eliminate the incentives for corruption which existed in the first place, and so the result is something known as “regulatory capture” in which the behavior which regulation was designed to eliminate is now institutionalized. Regulatory capture is another phenomenon worthy of much further study, outside of the scope of this monograph.

## Inflation (and Deflation)

For a public coin user, there is usually a set amount of inflation on the money supply. All new coin is visible and so all users are at least equally informed as to the economics of the coin. In fiat, the money supply is invisible to all so the inflation of the money supply is not known to the participants. This can lead to great hardship to fiat users who are not properly hedged.

In practice, inflation and deflation of the money supply affects the costs of goods and services. However in the past it has sometimes taken decades for the changes in the supply at the higher levels of the pyramid to trickle down into the economy enough to change the prices. In practice it is very difficult to predict what will happen to prices in a fiat economy because not only is the money supply not publicly available but also the rate at which the newly issued currency trickles into the economy to affect the prices is also not well known.



Figure 1. An example of the decline of purchasing power of one of the most popular fiat currencies of the 20th century.



For these reasons, most users try not to keep any balances in fiat instead preferring to own hard assets such as businesses, real estate, or coin. When exposure to a currency is needed holding debt instruments such as bonds is often the vehicle of choice.

While it might seem like a decline in value of fiat is guaranteed by the system the truth is that it is not. Some tightly managed currencies have even gained value at times, something which can be a crushing experience to anyone who has bet against it by taking on debts, or who was convinced into taking on debts for any reason. Again, caution is advised due to the hidden nature of the total supply of these exchange commodities.

## Counterparty Risk

Counterparty risk is not unique to fiat currency. Coin users also experience this any time they let an individual or a company manage their coin or other resources. However with virtual fiat tokens counterparty risk is unavoidable. All of us should make note of where these risks lie; typically they are with companies or individuals that provide storage and transfer of virtual fiat tokens and related investment vehicles. It is not worth going through the many thousands of examples of people losing big when the counterparty disappears with the money. Some of the excuses given are bankruptcy, theft, embezzlement, devaluation, electronic theft, fire, war, and terrorism. The end result is the same: the user no longer has access to the assets he or she thought she controlled.



# Chapter 4. Societal Effects

*"We have, in this country, one of the most corrupt institutions the world has ever known. I refer to the Federal Reserve Board. This evil institution has impoverished the people of the United States and has practically bankrupted our government. It has done this through the corrupt practices of the moneyed vultures who control it."*

*[U.S.A. Congressman Louis T. McFadden in 1932]*

## Corruption

Power corrupts. Absolute power corrupts absolutely. At the heart of the fiat system is corruption, it is the ability of the controllers of the printing presses to be dishonest with the rest of the participants. If the controllers and others high in the pyramid structure use this power wisely, this would not be a bad thing. However, the general tendency we have observed is that resources which are easily obtained are often quickly squandered. It doesn't take an advanced degree in psychology, nor more than a casual glance at a history book, to know where this kind of system will lead.

Unfortunately this tendency reached to all areas of society that have had contact with fiat currency. The trouble is that rather than merit and reason deciding the direction for human endeavors, they have been decided by the discretion of those to whom the results matter little. Agricultural decisions are not made by the consumers of the foodstuffs, but by the issuers of loans and subsidies. Construction decisions are not made by the residents or users of the buildings, but by the issuers of loans and subsidies. Scientific and medical research also follows this pattern. There are many cases where people have done brilliant things, and used the system to a great advantage. Sadly these have been

more the exception than the rule.

## War

In the 20th century under the peak of fiat usage, the term “warfare” took on a very different character from what it had in previous struggles. Because soldiers and weapons could be purchased at effectively zero cost by issuing fiat currency, they blossomed into worldwide conflicts with no end in sight. War coffers were inexhaustible. Fortunately this type of war funding will not be possible in the coming era.

## Short Term Thinking

Fiat currency has no clearly defined long term value, as the evolution of the money supply is unknown. Generally providers are more likely to return Therefore participants are not encouraged to think for the long term. Businesses with relationships with fiat dealers and lenders are expected to put emphasis on quarterly results, and often will survive from interest payment to interest payment. As a result, very little thought goes into the results of our activities on the lives of the next generations. Resources are squandered, and saving is discouraged. This is clearly detrimental to the long term health of society and ecology.

# Chapter 5. Acknowledgements

*“By this means government may secretly and unobserved, confiscate the wealth of the people, and not one man in a million will detect the theft.”*

*[John Maynard Keynes]*

## Let there be coin!

Without the invention of public key cryptography in the seventies, the creation of electronic computers before that, the networking efforts of the late 20th century, and all other efforts leading to the creation of first public and verifiable money system in 2009, this work would not be possible. The new era has much to offer us, and can give us not only financial freedom but also optimism for the future of humanity. However we would be wise to not forget that our psychology has not changed. Even if money supply fraud can be eliminated, there are many other pitfalls facing us. Long term value of a given coin is by no means guaranteed. Theft and usury will still affect us if we let them. Many have suggested that this is but one step on the road to a future in which exchange commodities are not needed at all.

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