A Free Market for Goods, Services, and Money

by

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ABSTRACT

A free market is composed of people who produce and trade the products of their efforts in exchange for the products of others. Each sets the prices at which he is willing to offer his product and at which he is willing to bid on others' products. The market is dynamic, with prices constantly changing, and more importantly, spreads between prices always changing. This dynamic is driven by a ceaseless arbitrage whereby people attempt to earn a profit. The free market is able to coordinate the activities of everyone, and enable everyone to optimize his results.

Unfortunately, governments interfere in the free market. They do so by the use of force. They attempt to substitute their gun for the reason of the individuals whose rights are thereby violated. The government always justifies its intrusions on the grounds of helping people. Government officials and voters are not aware of the lessons of Frederic Bastiat. The attempt of all to live at the expense of all is doomed. There ain't no such thing as a free lunch.

Rather than helping people, the government's interference inevitably causes distortion. They must take more from point A in the economy in order to give less to point B, and which has the unintended yet still destructive effect on points C, D, and E.

As destructive as government interference is in the area of production, it is that much worse in the area of money and credit. Every aspect of production and trade depends on money, so distortions in this area are magnified. Unfortunately, the government has distorted the monetary system so badly that both are accelerating towards destruction.

The solution, and the only hope for civilization, is to rediscover the principles of free markets, particularly on the monetary realm, and begin returning to a gold standard.

1. The Moral and Practical Aspects of Freedom

A monetary system is but one aspect of a much broader concept: the social system. Before discussing the monetary system, it is important to put it into the context of the social system. This section addresses different social systems and the principles on which they are built.

Throughout history and all over the world, every social system was based on rule by brute force. This includes tribalism, monarchism, imperialism, dictatorship, theocracy, socialism, and fascism. Such systems are either unconcerned with the well-being of their citizens, or falsely promise riches and comforts (while delivering neither). Outright denials of this fact nor glib dismissals based on the alleged failings of particular leaders or particular versions cannot evade that matter of cause and effect; the rule by force causes poverty, misery, and death.

The novelist and philosopher Ayn Rand noted that:

"Every political system is based on some code of ethics. The dominant ethics of mankind's history were variants of the altruist-collectivist doctrine which subordinated the individual to some higher authority, either mystical or social. Consequently, most political systems were variants of the same statist tyranny, differing only in degree, not in basic principle, limited only by the accidents of tradition, of chaos, of bloody strife and periodic collapse. Under all such systems, morality was a code applicable to the individual, but not to society. Society was placed outside the moral law, as its embodiment or source or exclusive interpreter—and the inculcation of self-sacrificial devotion to social duty was regarded as the main purpose of ethics in man's earthly existence." (1963)

A moral code is necessary for man (and impossible for any other living creature) because man has both reason and volition. He has a mind capable of grasping that there are different actions he could take and of choosing one. And he is not capable of surviving automatically. He cannot just hibernate for the winter, or outrun his pray and kill it with his bare hands. He needs a set of universal principles to guide his choices. This is the purpose of morality: to guide man's choices and actions towards his long-term survival and prosperity (Rand 1964).

In order to live and to thrive, a man must use his mind. His body is not tough, fast, strong, or hardy enough to survive the way an elephant, cheetah, horse, or camel can survive. Using his mind to survive necessarily means that he has the individual right of liberty to act on the conclusions he forms. And it also means that he has the right of property, to own the product of his own efforts. And corollaries are the right of freedom of speech to communicate with others, and of contract to agree with others regarding production and trade (Rand 1963).

There are immeasurable benefits to living in a civilization, among a population of other men. Specialization of labor allows each man to develop expertise in one aspect of production and therefore achieve far higher productivity (and produce entire categories of goods) compared to subsistence alone. But the benefits of living amongst other men only accrue if there are certain conditions present.

There are two means that a man can use to deal with other men. One is brute force. A man can kill or threaten to kill others, in order to compel their obedience. The other is reason (including money). A man can give others a good reason why they should cooperate to mutual advantage.

Viewed with this understanding, it is not merely wrong for a man to declare that others cannot decide how to live their lives and therefore use or threaten the use of force to make them do as he wishes. It is evil. If man is incapable of managing his own affairs, then he is certainly disqualified to pick up a gun and manage the affairs of others by constant threat of murder.

This, then, is the view from the field of morality. Each man has a right to his own life, liberty, and property as a consequence of his nature as the rational, volitional animal. Ultimately, man can live no other way and all attempts to make it so by force have necessarily failed.

The field of economics focuses on the nature and causes of production and trade. Economics also comes to the same conclusion. The division of labor economy depends on the respect for the individual's rights of life, liberty, speech, contract, and property.

To understand this, one must begin by considering the atomic unit of the economy: an individual man. The individual is the one who best understands his own needs. He knows when he is thirsty or hungry, tired or cold. He knows what he must do in order to produce the goods that he must consume to survive. And he knows he must plan for the future when he may be sick, or have a bad harvest, or reach his senescence and become unable to work.

Even without the moral issue of rule by force, the central planner does not and cannot know the precise needs and timing of those needs for even simple goods such as food and clothing, much less the products and services of our modern economy. Henry Hazlitt showed inductively, step by step, how the ruler of a socialist dictatorship must rediscover the concept of prices that emerge in a market and that it is prices which provide the information that coordinate activity in an economy. (1966). This is a problem that is not corrected by having a computer, or sophisticated algorithms.

Most people, when they consider socialism, note that it deprives men of any incentive to work hard, take risks, or creatively think to solve problems. And this is obvious. If you promise a man that he will receive the same benefits and the same results whether he works hard or performs the absolute minimum of him demanded by his taskmaster, why should he do more than the minimum? And why should the taskmaster care, either? And how would the taskmaster even know what the man is capable of doing?

Aside from socialism's inability to know how to plan the work of everyone in the economy, and aside from its attack on every man's motivation, it has another feature that guarantees its failure. Socialism attacks capital accumulation.

The coin of the realm in socialism is not the value that one has produced, offered in trade for value produced by someone else. Socialism trades (rather, pretends that is possible to trade) in need. So long as one man exists somewhere who does not have his first meal of the day, then no one else can have a second meal. Fortunately, enforcement has never been consistent or efficient.

Socialism opposes, in principle, the concept of profit. Its hatred of profit is based on the naïve view of the rich man living in decadence. And (especially under socialism) everyone constantly suffers from privation. How can anyone be allowed to earn a profit when there are hungry children, the socialist demands of the uncaring stars?

Another way of looking at profit is capital accumulation. Socialism does not permit capital to be accumulated, preferring to take any income in excess of a subsistence wage and give it to others to be consumed immediately. But accumulated capital is leverage for human effort, allowing a man to produce more and more output for the same level of effort. It should be obvious that we don't work harder today, than they did 10,000 years ago (probably a lot less hard!) and yet we produce such abundance that they could not have conceived of it back then, much less wondrous products such as computers.

Socialism has yet another ill side effect. It does not permit the entrepreneur to exist. While most men work at producing goods and services using tools and principles that were previously discovered, an entrepreneur works to discover new ways of doing old work more efficiently, and new work that is more valuable to do. Rather than focusing on the best way to raise and care for horses, entrepreneurs such as Henry Ford focused on how to replace horses with cars.

The entrepreneur can only operate if he has the freedom to innovate, even if his innovation offends people (such as managers of existing enterprises). The entrepreneur does not function under orders. You cannot manage the entrepreneur and tell him what to do, in what order, and when. Even aside from the contradiction of trying to force a mind to think, the would-be dictator does not know what orders to give. The thug would

sooner and more likely succeed in ordering food production and distribution (at which he always fails) than in ordering innovation. And, of course, the entrepreneur typically requires capital.

There is no particular limit to the improvements on productivity, or entirely new kinds of products and services that man can devise and bring to market. This is because there is no particular limit to the ability of man's mind to form abstractions from concretes, and to form abstractions from abstractions.

And likewise, there is no limit to the collapse of civilization if thugs or even "well intentioned experts" seek to seize control of the means of production and attempt to centrally plan the economy. Ultimately, the division of labor is not possible without the coordination made possible by the information embedded in prices. And without the division of labor, man reverts to a mean level of subsistence.

One final point underscores both the argument from morality and the argument from economics (i.e. for capitalism). There is no conflict between men who respect one another's rights. We have already established that one man's real or claimed need is not an entitlement to the efforts or capital of another man. This understanding eliminates the confusion regarding whether two or more men could have a legitimate claim to the same good (e.g. food). The food belongs, by right, to the man who produced it. This right includes both use and disposal. He can trade it to another man in exchange for something else he wants (e.g. clothes).

While many people are tempted to try to use economics to "help" people by providing goods and services to them that they did not produce nor trade for, it does not work. There are only two alternatives. One is that each man determines what he will work at, how hard he will work, how much capital he will employ, and how to use and dispose the products of his efforts. The other is that a central planner dictates such things. The latter falls into the essential failure of socialism: it is impossible to direct slave-men towards achieving any goal at all, much less their own fulfillment.

1.1 Arbitrage

Conventional economics in the mainstream, including the modern day followers of Keynes, Friedman's Monetarism, and even many calling themselves "Austrian" accept the linear and static supply-and-demand curve story (it does not deserve to be called a "theory"). Adherents claim that there is a hypothetical demand curve (Demand curve 2012), representing how much of a good would be bought by people in the market at each possible price level. And there is a hypothetical curve of supply, showing how much of a product would be sold by producers at each possible price.

This story is pure fiction, based as it is on hypothetical "data points" that do not exist in reality.

Reality, unlike the view promoted in this story, is multi-variable as well as multi-dimensional and dynamic. For example, time is an important variable for producers. Real demand and real supply are constantly changing as time passes, for a variety of reasons. And there are asymmetries, for example between the consumer and the producer. The consumer has many choices, including the choice not to buy anything. He can keep his money, which will be good tomorrow. The producer is under significantly more pressure to sell his existing inventory and to line up sales for his ongoing production. He typically has fixed capital at risk if his enterprise shuts down, as well as employees, and other ongoing process that cannot easily be restarted if it stops for any length of time. Additionally, his inventory has nearly zero marginal utility.

As attractive and "elegant" as the notion seems, it is not possible to model the actions of numerous individual men (who, let's not forget, possess reason and volition). Just as central planning is not possible on grounds that one lacks the information necessary to plan, central modeling is equally impossible for the same reason.

While it's not possible to model the aggregate actions of men in the markets, it is possible to understand the drivers at the individual level. All actions of all men in the markets are various forms of arbitrage.

Prior to Galileo, people thought of the concept of speed as "the degree of motion." (Peikoff n.d.) While one can see what they meant with this, their definition was useless. The field of physics was not possible until Galileo made the fundamental identification that speed is the change in distance per unit of time (e.g. meters per second).

Today, most people think of arbitrage as "the practice of taking advantage of a price difference between two or more markets". (Arbitrage 2012) While this is not useless for traders in certain markets, it does not help the economist trying to understand action in the markets. We need a different concept altogether.

Arbitrage is the act of straddling a spread in the markets.

In brief, for every good in every market, there is not one price but two different prices. If one comes to the market to buy, one must pay the offer (also called the ask). If one comes to sell, one must take the bid. The offer is always higher than the bid. Of course, one can "haggle" by putting in a better bid or offer, and one may or may not get (or take) a trade.

The best bid is the highest bid in a stack that typically extends down a long distance below. Each bid in the stack includes both a price the bidder is willing to pay, and the quantity the bidder seeks to buy. Similarly, the best offer is the lowest in a large stack.

In the very act of buying at the offer, one fact is implicit. The seller has traded away his goods and received his money. Satisfied, he leaves the market. The next offer in the stack tends to be higher. This phenomenon, of buying at the offer with the result that the next offer is higher, is called "lifting the offer." Analogously, selling at the bid with the result that the next bid is lower is called "pressing the bid."

Lifting the offer and pressing the bid are critical concepts to understand how arbitrage affects the markets. Let's look at a simple example. An entrepreneur discovers that eggs are offered at 0.1 ounces of silver per dozen at a market in a farm town which is a three-hour drive from a city, and eggs are bid at 0.5 ounces of silver per dozen at a sidewalk stand in the city center. He drives up to the farm, buys every egg he can fit into his car, drives back to the city and sells them to consumers there from a pushcart. Initially, he can earn a spread of 0.4 ounces of silver per dozen.

But his buying activity lifts the offer on eggs at the farm town to 0.2 ounces of silver. And his selling in the city center presses the bid to 0.4 ounces. Now his profit is 0.2 ounces per dozen. His competitors' actions lift the farm offer to 0.29 ounces, and press the city bid to 0.31. Now the profit for everyone is 0.02 ounces per dozen. At this point the marginal entrepreneur looks elsewhere; the egg distribution business is not attractive any more.

The very process of arbitrage compresses a spread. The offer for eggs at the farm is pulled towards the bid for eggs in the city. One analogy would be the gravitational force between any two objects in the universe. Another analogy would be to look at the action of the arbitrageur as like putting a clamp or a vice onto a spread. He and his competitors will continue to add more and more clamps until the spread compresses. This is the most powerful force in the markets.

Another way of looking at the compression of spreads is increasing economic coordination. It makes no sense that eggs are valued so little in a farm town that they can spoil, while in a nearby city people demand eggs but cannot get them. The entrepreneur (arbitrageur) fixes this problem by coordinating the activities of egg producers and egg consumers via transportation and distribution.

It is important to note that the only way to make money in a free market is to straddle a spread, which means: to provide something of value in exchange for the profit one earns.

There are no exceptions. The free market does not tolerate parasites and does not reward mere wishing (much less value destruction) with profits.

Antal Fekete describes straddles of one, two, and four legs. (1999)

The egg story, is an example of a two-legged straddle. The egg distribution entrepreneur buys eggs in the farm town. This is the long leg of his straddle; he is long farm-town eggs. He sells them in the city center. This is the short leg of his straddle; he is short city-center eggs.

The marginal egg distribution entrepreneur is responsible for the city-center egg bid. At some point, he is reluctant to sell any lower. That becomes the bid.

The marginal consumer in the city sets the offer price. At some point, he refuses to take the uptick in price. This could be because at that price, eggs do not fit into his budget. More likely in a modern economy, it is because there are other egg sellers on other street corners, who may buy them from other farm towns or even have a chicken plant downtown.

It is counterintuitive that the marginal consumer sets the offer and the marginal producer sets the bid. But this is so important to a proper understanding of economics that it bears underscoring. Both parties have the power to act to cause the price to move in the opposite direction that they would prefer. Only by his inaction, by walking away, can anyone cause the price to move in a favorable direction. This has surely been the source of much frustration over the millennia (and many bad laws).

The egg consumer is an example of a one-legged straddle. He buys eggs, which is his sole (long) leg. But he is aware of the multiple different sellers of eggs (and egg substitutes). His reluctance to buy eggs on Third Street at 0.35 ounces per dozen when they are offered at 0.32 ounces per dozen on Fifth Street will tend to compress the spread between different city vendors of eggs.

Four-legged straddles are outside the scope of this paper, but we can see an example if we extend the story of the egg entrepreneur. When we last left him, he is long farm-town eggs and short city-center eggs and he is earning a very thin spread. What could he do to improve his profits?

He discovers an ostrich ranching town near the farm town. There, the offer on ostrich eggs is quite low. And the bid in the city for this new kind of egg is high. The entrepreneur stops buying farm-town eggs, and begins buying ostrich eggs. We can express his termination of the farm-town long position as being closed by an equivalent short. Similarly, he stops selling city-center eggs. Closing his short position is equivalent to putting on a long position (at least in terms of its effect on the markets). One kind of four-legged straddle is when the entrepreneur is forced to respond to compressed spreads by switching to straddle a different spread that is wider and hence more profitable.

2. The Government

"The difference between political power and any other kind of social 'power,' between a government and any private organization, is the fact that a government holds a legal monopoly on the use of physical force. … a government holds a legal monopoly on the use of physical force.

… The nature of governmental action is: *coercive* action. The nature of political power is: the power to force obedience under threat of physical injury—the threat of property expropriation, imprisonment, or death." (Rand, America's Persecuted Minority: Big Business 1966)

As described earlier, a proper government uses its political power to protect man's individual rights from the only thing that could possibly threaten them. A man can be deprived of his rights only by the initiation of the use of force (or its corollary, fraud). The government retaliates with force against thugs, both domestic and foreign, who initiate the use of force, or threaten to initiate the use of force, against its citizens.

But what if the government uses its power to interfere with the rights of men to act in the markets? This can be recognized as an attempt at partial central planning. The government asserts that it will let the free market do what it does best. It will let people produce a growing abundance and variety of goods and services. But it will use force to achieve goals that it says are worthy (of coercion!) It will, as Ayn Rand characterized it, create a "mixed economy":

"…a mixture of capitalism and statism, of freedom and controls. A mixed economy is a country in the process of disintegration, a civil war of pressure-groups looting and devouring one another." (Rand, The Obliteration of Capitalism 1966)

This is what exists in every country of the world today, of course. Those who receive benefits from the government, including but not limited to unearned goods and services, and favorable laws that protect them from competitors, continually strive to expand the size of their benefits. It is an unstable system that necessarily moves either towards dictatorship or towards freedom. Unfortunately, in most of the world it is moving towards dictatorship.

From the perspective of economics, there are innumerable ways in which government can alter the operation of a market by the initiation of the use of force. Let's look at examples of the following categories: (1) fix a minimum price, (2) fix a maximum price, (3) tax a kind of transaction, (4) tax profits, (5) tax wages, (6) tax capital gains, (7) prohibit a transaction, (8) subsidize a transaction, or (9) declare a good or service to be a "right".

2.1 Interference 1: Fixing a Minimum Price

"It is unfair," declares the government (at the prompting of the farm-town egg growers), "that the price of ostrich eggs is so low!" Let's say that ostrich eggs in the city are bid at 0.25 ounces of silver per egg (ostrich eggs are much larger than chicken eggs) and offered at 0.3 ounces.

The government passes a law mandating a minimum price for ostrich eggs. What happens then? There are three cases to consider. The minimum price may be below the bid, between the bid and the offer, and above the offer.

If they set the minimum price below the bid, then the law has no immediate effect (though it will if the market moves). If they set the minimum price above the bid but below the offer, then what happens?

It is now illegal for the producer to come to market and take the bid. It should be obvious that the government cannot make consumers want to raise their bid. People bid what they bid as a result of the process described earlier. The government has the power only to destroy, to prohibit, and to prevent a transaction. The government cannot change reality, only prevent people from dealing with it as they think best.

As there is still demand for ostrich eggs, the ostrich egg dealer continues to buy ostrich eggs and sell them in the city center at the same offer he had previously set. But what if he needs to liquidate his inventory? He is now prohibited from doing so.

This would have several consequences, including making him reduce the inventory he is willing to risk holding, reduced volume of trades in the ostrich egg market, and increased risk to those in the business.

If the law sets the minimum price above the offer for ostrich eggs, then it is illegal for the market to operate to determine the offer. The government uses its guns to override this process. By diktat, the offer is set at 0.5 ounces of silver per ostrich egg. To understand what happens, one must visualize the people who buy ostrich eggs at the offer arranged from least to most price-sensitive.

The least price-sensitive may be a scientist who is doing research on the ostrich and needs to buy an egg occasionally for his laboratory. The value of his research is much higher than the price of an egg, and so he buys even if the price goes up 50-fold. The next least price sensitive may be an athlete who is eating one ostrich egg per day on a special diet.

We can keep looking down the line of buyers until we get near the other end, those who are most price-sensitive. In our earlier example, these are the people who were buyers of farm-town eggs until one entrepreneur changed to selling ostrich eggs. These people changed to buying ostrich eggs because they were a cheaper egg. They will now be forced to go back to buying farm-town eggs. Hypothetically, they are still willing to take the offer on ostrich eggs but this is now a criminal act and most people do not want to risk being sent to jail.

It is evident that if the law fixes a minimum price above the offer, sales volumes will fall dramatically until the market offer can rise to the legislated minimum. Liquidity will be reduced even more than described under the previous case.

In both cases, the government has no power to raise the consumer's bid. It has only the power to prevent the producer from lowering his offer. The government can, however, force this spread to be wider. This has the effect of reducing economic

coordination. One should think of narrowing spreads as increasing coordination, and widening spreads as decreasing coordination (or disintegrating coordination or increasing disorder).

2.2 Interference 2: Fix a Maximum Price

What if, instead, the Healthy Ostrich-eaters Group (HOG) lobbies the government to set a price cap on ostrich eggs? This way, even poor people can eat healthy ostrich eggs.

If the price cap is above the offer, then it will have no immediate effect. What if the price cap is above the bid but below the offer?

It is obvious that more consumers will want to buy ostrich eggs. The marginal consumer from the earlier example of the free market does not walk away; the price is not permitted to rise to the point where he is reluctant to pay. The problem comes in when one considers the ostrich egg distributor. Recall, he is buying the eggs from the ostrich ranch town and selling them in the city center. He will only do this if he can earn a spread large enough to justify his time, costs, and risks.

If the government sets a price cap, the marginal ostrich egg distributor will leave the business. The marginal distributor provides an offer in city center (which may or may not be the best offer). His departure will reduce the stack of offers, which will probably mean the offer will increase. Note that he is responsible for the marginal **bid**. When he leaves, the marginal bid will rise, but not as much as the offer. The spread widens.

The marginal distributor has an analogous impact in the ranch town. He makes a bid, and his departure will reduce the stack of bids and probably decrease the marginal bid. He is also responsible for the marginal offer, and when he leaves the offer will fall but not as much as the bid. The spread widens here, too.

The main impact is, of course, on the ranch town offer to city center bid spread. As each marginal distributor leaves, this spread is forced to widen to what it was before they

entered the business initially. There are willing sellers of ostrich eggs in the ranch town and willing buyers in the city center, but it has become illegal to make a profit matching that supply with that demand.

Ostrich egg distributors will be forced to leave the business until the spread widens sufficiently. This is when the offer in the ranch town falls to the level where it is profitable to buy at this offer and sell in the city center at the legally allowed price.

It is important too, that the hypothetical free-market offer on ostrich eggs in the city center is rising throughout this process. One obvious cause: there are fewer ostrich eggs being brought to that market. The law does indeed have the power to enforce a lower offer on the seller, with the consequence that the seller will leave the market, and this has the consequence of reducing the supply of ostrich eggs.

The market bid-ask spread in the ranch town has visibly widened. The hypothetical bid-ask spread in the city center has widened, but the law forces the official bid-ask spread to appear narrower with the net result being a shortage. Not all of the consumers who wish to buy eggs at the legally allowed price can buy eggs. Some of them must do without, or find a substitute.

Economic coordination has been reduced.

It is even worse if the law sets the maximum price below the bid in the city center. Then, sellers will quickly run out of their stock of ostrich eggs. They will be either unable or unwilling to buy more in the ranch town (where the offer is marginally higher than the bid in city center). Setting a maximum price below the bid will have the net effect of shutting down the legal market, and the only trades that can occur are in the black market.

2.3 Interference 3: Tax a Kind of Transaction

Governments today levy taxes based on all sorts of activities, for numerous reasons. They may tax a particular kind of transaction, either because they envy those who can

engage in it, or to achieve a stated social goal of reducing the transaction, or simply because they need to raise revenue and the lobbyists for dealers in this transaction were not influential enough to push for the tax to be moved to something else.

Let's go back to the ostrich egg story again. Now the government imposes a tax of 10% on all sales of ostrich eggs in the city center. This should be considered as an increase in the offer, except the government takes the increase, and the entrepreneur keeps only the smaller amount of the original offer.

This causes a widening spread and thus decreases economic coordination. There is an additional consequence. Many marginal consumers become sub-marginal by this act of tax fiat. They are forced to do without or find a substitute product. Consumers will walk away in sufficient numbers until the marginal consumer sets the marginal offer at the level of the free-market offer plus the tax.

Reducing the marginal offer, however, will lead to reduced volumes. With reduced volumes, the spread between the offer in the ranch town and the bid in the city center will widen. This is no inducement to an entrepreneur because it is not an opportunity to profit. It is forcibly kept open by the government's that, which has the effect of prohibiting the entrepreneur from compressing this spread.

This is a further decrease of economic coordination.

2.4 Interference 4: Tax Profits

The clever student of economics may concede that taxing a type of transaction is not efficient or "economically neutral" as it is called in their parlance. A better way to raise revenues is to tax profits. Let's look at this.

What if the ostrich egg entrepreneur was forced to pay 10% of his profits (net or gross, it does not make a difference to this example)? He buys ostrich eggs in the ranch town for 0.25 ounces and sells them in the city center for 0.3 ounces, a gross margin of 0.05

ounces per egg. He sells 100 eggs per day, for a gross profit of 5 ounces of silver per day. He has other expenses — such as fuel — of 1 ounce, so his net profit is 4 ounces. The government takes 0.4 ounces as tax on his profits. What happens next?

As discussed in the earlier example, when an entrepreneur discovers a spread to straddle he buys at the offer in one market and sells on the bid in another. This tends to compress this spread. Competitors come into the market (or the first entrepreneur scales up if he is aggressive and has the capital) until the spread is compressed to the point where the marginal entrepreneur does not see it as attractive. The spread is too small to be worthwhile, so the marginal entrepreneur (or the marginal growth of the large-scale enterprise that has aggressively exploited this spread by itself) looks elsewhere.

The addition of a profits tax changes the equation for the entrepreneur. Before the tax, the marginal entrepreneur was able to cover his risks, cost of capital, and his time to distribute ostrich eggs if he could earn 4 ounces per day. At 3.6 ounces, the business is sub-marginal. The marginal entrepreneur is forced to exit the business.

Two spreads will now widen. The bid-offer spread on ostrich eggs in the city center will widen. And the ranch-town offer to city center bid spread will widen.

Economic coordination is reduced.

2.5 Interference 5: Tax Wages

"OK," the good-government advocate says. "We should target the wage earner to tax. He does not have the choices of the entrepreneur, so extracting money from him will be economically neutral!"

Not quite.

It is true that the wage earner does not have the flexibility of the entrepreneur to move his wages from a taxable category to a non-taxable category. Most wage earners have little

control of the amount of their wages or work hours. They must work when their employers demand it. So what happens if the government imposes a tax on wages? There are several consequences.

First, it should be noted that a wage is a price of labor. The marginal worker is the source of the bid by employers. And the marginal employer is the source of the offer by workers. Taxing wages is no different than taxing any kind of transaction as described above. The tax on a wage forces the offer higher, just as the tax on ostrich eggs forces the offer higher.

The result is to push the rate of unemployment higher. This is a decrease in economic coordination. Perhaps unemployment would be lower if politicians who engaged in such interference had to explain to workers who are rendered sub-marginal why the politician considers that an acceptable price to pay for achievement of the his goals.

Some wage earners can leave the wage-earning market and enter the entrepreneurial profits market or the capital gains market. This is analogous to the entrepreneur leaving the ostrich egg market and entering the market for a good that is not taxed.

Some wage earners can cut back their work hours, for example, professionals such as accountants, lawyers, and doctors can reduce their income if they find that the extra work is not worthwhile for the reduced income (especially if the tax rate is progressive, and the tax rate on their marginal labor is much higher than the tax rate on their average income).

The good-government advocate is correct in arguing that most wage earners have no choice. They must work in order to eat. In this case, what happens?

The wage earner has less money with which to buy every good and service. Producers will find that the offer is lower than it would have been without taxation of wages. The consumer simply does not have as much money to take the uptick in price as far as they did previously. The bid-ask spread is wider, and thus economic coordination is reduced.

There is another, more subtle and more pernicious effect. The tax on wages reduces savings. The wage earner has a smaller income and finds that a greater proportion of his income is required to buy the necessities of living. The role and importance of savings will be discussed later.

2.6 Interference 6: Tax Capital Gains

What if the government seeks to tax "the rich" via taxing capital gains? A capital gain is realized when one buys an investment and subsequently sells it for a higher price. The obvious answer to the question is that fewer investments will be made. Either the marginal investor does not find that the gains net of the tax are justified in his portfolio in light of the risk, or the marginal investment opportunity becomes sub-marginal when tax is subtracted from any potential gain. This is especially important when considering the risk of many investments (e.g. a new venture with an estimated 50% probability of success).

A follow-on effect is that a capital gains tax reduces the capital accumulated by successful investors. Even if he is faced with an unlimited list of opportunities to invest that produce great returns, the investor only has a finite amount of capital to invest at any given moment. Some opportunities will not be given investment capital.

Taxing capital gains has the net effect of reducing the number of investors who bid for equities. Enterprises who need to raise capital will have to go deeper into a thinner and weaker stack of bids to get the same amount of capital. The offer may be reduced due to fewer buyers being willing to take the uptick, but not as much as the bid. Thus widening the bid-ask spread and reducing economic coordination.

2.7 Interference 7: Prohibit a Transaction

The government, for reasons of populism, popular notions of morality, or special interest group lobbyists, could outlaw a transaction. "The selling of ostrich eggs are prohibited in this city on grounds of the threat that their cholesterol poses to 'public health'!"

Now what happens? A black market develops.

There are still people who desire ostrich eggs, and those consumers still provide a bid. Given that ostrich eggs now carry the risk of imprisonment, fewer people will bid, so the stack of bids is thinner and weaker. There are still enterprising young men who are willing to risk life and liberty to procure ostrich eggs across the border, smuggle them into the city center, and sell them for outsized profits. The stack of offers is much thinner and firmer than it was before the edict.

The black market is characterized by a much wider bid-ask spread than one would see in a free market. The sellers incur enormous risks, and pay a high price to mitigate those risks as much as possible. They demand a very high net profit in order to operate under such circumstances. There are fewer sellers.

In addition, especially if there are uses of the illegal good other than final consumption (e.g. scientific research briefly mentioned earlier), there is a different kind of spread that is forced wider. With fewer (if any) scientists willing to risk imprisonment to obtain ostrich research, their offer is raised, or even withdrawn entirely, in the research market. The value of that research does not increase simply because there are fewer people willing or able to perform it, so this market's spreads are so wide that it may not clear at all.

Economic coordination decreases, and we have not even addressed the violence that arises when transactions are prohibited or the collateral damage that occurs as a result of said violence.

2.8 Interference 8: Subsidize a Transaction

The government may assert that some goods or services are "important". Or it can declare that some "deserving" people who cannot currently afford to buy a good or service should have it. So, the government offers a subsidy. Buyers or sellers (there is

no economic difference based on where the government injects the subsidy) are given "free" money if they buy a particular good.

Of course, there is no such thing as free. The government is merely taxing someone else (see the above sections on taxing transactions, profits, wages, or gains for a description of how taxes force spreads wider and thus reduce economic coordination).

In addition, there is another effect of subsidizing a transaction. Above, we saw that taxing a transaction is, in effect, raising the offer. Subsidizing it has the effect of raising the bid. The free-market bid remains the same, but now there is free money being added on top of it. At first, this appears to narrow the bid-ask spread. But this is fleeting and illusory.

Let's return to the ostrich egg business. Instead of banning ostrich eggs because of their cholesterol, they are subsidized because, "why should only the rich have access to such exotic and wonderful foods? We should help the poor be able to have ostrich eggs too."

Obviously, at first, more entrepreneurs will be attracted to this spread. With such a firm (propped up by the government) bid, the entrepreneur cannot help but to make a fat profit. Or so it seems. The first problem is that the offer in the ranch town is lifted. Entrepreneurs will continue to enter this market until the rate of profit comes down to the marginal rate of profit in the economy as a whole. So what has happened is that the subsidy has driven up the cost of ostrich eggs in the ranch town to match the elevated bid in the city center. The consumer does not get access to more ostrich eggs for the same money. The price has risen and now the consumer depends on the subsidy or else he fears he cannot afford ostrich eggs at all.

Meanwhile in the ranch town, the same dynamic has occurred. Their temporarily greater margins are taken away as they push up the cost of their inputs such as ostrich feed and ostrich ranch labor.

Finally, the subsidy promotes an overinvestment in ostrich ranching. The bid on the inputs for cattle ranching will fall as a result of the increased bid on the outputs of ostrich ranching. The bid-ask spread on cattle feed, for example, is widened.

Economic coordination, once again, is reduced.

2.9 Interference 9: Declare a Good or Service to be a "Right"

The case of declaring that ostrich eggs are a "God-Given Right", just because a consumer is alive and breathing, is similar in some ways to the case of subsidizing ostrich eggs. It will result in rising input costs for ostrich egg production, and widening bid-ask spreads in production of anything which competes with ostrich eggs—not for the same consumer—but for the same inputs.

There is one essential difference.

If ostrich eggs are the right of anyone who can stand up and demand that he be given ostrich eggs in whatever quantity, then that makes ostrich egg ranchers and distributors slaves. There is no way to attempt to guarantee that all ostrich egg rights holders get all the ostrich eggs to which they have a right, except by an army of regulators. All aspects of every business involved in bringing ostrich eggs to consumers will be subject to controls, diktats (including price caps sooner or later), inspections, audits, and often conflicting rules.

In this sense, declaring ostrich eggs to be a "right" is just like the case of prohibiting the sale of ostrich eggs. It is a disincentive to produce or deal in ostrich eggs. Unlike the case of prohibition, however, this case does not come with the increased prices of the black market.

The end result is that there will be a shortage of ostrich eggs. People have the "right" to get as many as they want, but in reality ostrich eggs are not available for the getting. The bid may not rise, but the offer is withdrawn due to a synergistic

combination of several factors. Input costs rise out of control; entrepreneurs lack any desire to enter the ostrich egg business, and the regulators who increasingly take over the ostrich egg business do not know how (and lack any incentive) to produce ostrich eggs efficiently. Only by means of massive inflows of subsidy money can any ostrich eggs be produced at all.

Economic coordination is reduced.

2.10 Other Interference

The above list of the ways that the government can interfere in a market is not exhaustive. However, one can perform the same kind of analysis on the bids and offers in the various markets that are affected. In all cases, this author is confident that the result is widening spreads and reduced economic coordination.

In recent history, each case of widening spreads is taken as a further justification for additional interference. Ayn Rand was right. A mixed economy is unstable. It is either moving towards more freedom or, today, towards more controls (Rand, The New Fascism: Rule by Consensus 1966).

3. Distortion

There is a concept implicit in every example of government interference with the rights of men to produce and trade as they determine individually at their own discretion. The net result is always distortion.

Distortion is when government renders a buyer unable to trade with a seller.

As described above, if the government sets a minimum price on ostrich eggs, the end result is that fewer people can buy ostrich eggs. There is a consumer who is ready willing and able to buy ostrich eggs. There is a producer who is ready willing and able to sell ostrich eggs. Both could agree on a price. But the government forces them not to do business.

Some distortion is immediate, such as the inability to buy and sell ostrich eggs. Some distortion has a slow, pernicious effect and is not felt for years or even decades.

One example is a distortion caused by a tax on wages. As described above, this reduces savings. This has a further consequence. The wage earner invests his savings while he works, so that he might enjoy a good income when he is unable to work and retires. Reduced savings will obviously mean reduced income in retirement. But let's focus on the other impact of this situation.

Savings are invested in improving the efficiency of production and in developing new kinds of goods and services. Reduced savings equates to reduced investment. This reduces economic coordination in space—between different points in the economy today. And it reduces economic coordination in time—between points in the economy today and points in the economy that will be in the future. Growth is an exponential function, so the loss of investment has a compounded effect over time. All of society is impoverished far more than most people can imagine, as a result of taxes on wages (or any other government distortion).

Distortion is analogous to the Second Law of Thermodynamics. This law states that a machine cannot create free energy, and indeed, it cannot even break even. All moving systems are necessarily subject to loss of energy.

In economics, government interference cannot create free goods or services. It cannot even break even. All interference necessarily causes distortion (and reduced economic coordination).

How can it be that, for example, some people who would work to produce food are unemployed (and some land which grows food is fallow) and at the same time other people elsewhere in the economy are hungry?

As with everything else in economics, one must look to the individual man to understand the dynamic. Looking at aggregate food production and consumption numbers for last year will not lead to any insights.

Men are not automatons. They respond to the spreads they see in front of them (and entrepreneurs look for new spreads that others have not discovered yet). Despite the moral condemnations of the supporters of statism, this is the nature of man. Economics, like every other science, must deal with reality, as it is, not with the fantasy that as one wishes for.

In a free market, prices are not set by whim (much to the chagrin of the statist). They are not arbitrary, capricious, or random. Prices—and consequently spreads—are set by producers and consumers in the markets, by a dynamic process that leads to improved efficiency, development of new products, and increasing coordination of everyone's activities. The complaint that one is not free to step outside the market and wish for unearned results is no legitimate complaint at all. Everyone participates in the markets because the result he gets is far superior to the result he would get by subsisting alone in the wilderness.

In the mixed economy, where there is a partially free market combined with some degree of government interference, the information signaled in spreads is distorted. It is logical to assume that this will lead to distortions in the economy itself. Let's look at this more deeply.

Going back to the case of the ostrich egg business, the entrepreneur looks at two spreads: (1) the ranch-town offer to city center bid spread and (2) the city center chicken egg bid to city center ostrich egg bid. The former spread tells him that he could make money by distributing ostrich eggs. The latter tells him that he is likely to find robust demand and hence to make money; ostrich eggs are underpriced relative to chicken eggs.

He is, of course, motivated by his desire to earn a profit. But the market is offering him an opportunity to make a profit only for doing something that adds value. His customers (or would-be customers) want ostrich eggs and are willing to pay him a profit to bring them.

What happens when the government interferes in the market is that it creates perverse incentives. No longer does the entrepreneur respond to the facts of the cost of procuring ostrich eggs, transporting them, and the bid from the consumer. Now he must reckon with something else.

A perverse incentive is the change to a spread that is caused by government interference.

Another way of thinking of this is that a perverse incentive is when government interference causes something to be profitable that adds no value to the market, or when it causes something which adds value to the market to be unprofitable.

To anyone except an economist or philosopher, the perverse incentive is all but undetectable. They look at the spreads and think they are natural. The consumer, the wage earner, the entrepreneur, and everyone else in the markets, must respond to each spread as it actually appears in the market. They cannot tell themselves that they will not

enter or leave the ostrich egg business because the real reason why it's profitable, or not profitable, is the government. If a spread is profitable, one either straddles it or one's competitors will straddle it. If a spread is unprofitable, one either abandons it or one goes bankrupt.

It is in this light that one must look at such phenomena as inefficiency, waste, capital decumulation, and malinvestment.

An example of inefficiency comes from the interference whereby the government declares ostrich eggs to be a "right", and then consequently regulates ostrich egg production and distribution. While it may require one employee to drive up to the ranch town to buy ostrich eggs, the ostrich egg distribution business may need 10 employees to comply with the regulations, fill out paperwork, respond to audits, lobby the legislature, compute the taxes owed, etc.

An example of waste is if the government sets a minimum price on ostrich eggs that is between the bid and the offer. It is therefore illegal for the ostrich egg distributor to liquidate inventory, i.e. by selling on the bid. He must continue to hold to the offer. But aside from cash flow needs, there may be a different and very urgent reason to liquidate ostrich eggs. They have a limited shelf life and then they spoil. When ostrich eggs spoil, that is waste.

An example of capital decumulation is if the government sets a maximum price on ostrich eggs in the city center that is below the offer in the ranch town. The business of buying ostrich eggs in the ranch town and selling them in the city center is shut down. Its trucks and sorting machinery become idle and begin to rust. The same happens with the barns and equipment on the ranches at the ranch town. Productive capital is rendered non-viable and in a short time, rust and rot degrade it.

An example of malinvestment is if the government subsidies ostrich egg buying in the city center. Entrepreneurs come from all corners of the world to set up ostrich egg

distribution businesses and ostrich ranches in the ranch town. They invest capital in trucks, barns, fencing, tractors, egg sorting lines, etc. But all of this is malinvestment. The demand for ostrich eggs is due to a subsidy; it is not real. Those extra ostrich egg businesses exist only at the mercy of the subsidy. When the subsidy is removed, sooner or later, those businesses will be bankrupt and their capital will be mostly lost (sold for scrap metal).

Perverse incentives and distortion in any area of the economy are enormously destructive, more than even most advocates of free markets realize. In the end, everyone is a net loser, even those who appear to "benefit" from the subsidy. This last point should be obvious if one asks: would you rather be a king in the 18th century or a laborer today? The laborer today has color TV, mobile phones, cars, airplanes, and medicine. The king in the 18th century sweated during the summer, was cold in the winter, and died from injuries and diseases that are not lethal today.

As we shall see below, perverse incentives and distortions in monetary matters are far more important and damaging than anywhere else in the economy.

4. Money

Money, i.e. gold, enables nothing less than the division of labor, civilization, and all progress from the muck of subsistence in a cave to the air-conditioned glass-walled office at the top of a skyscraper.

When a government attempts to give value to a fiat paper currency by enacting a law, this is an attempt at creating an intrinsic value. The government wishes for the paper currency to have value and for its value to remain immobile regardless of its quantity, backing, quality, arbitrages, reality, and reason. As discussed later, this is doomed to fail.

Money is not immune to moving as a consequence of arbitrage. Fortunately, money's high stocks to flows ratio and near-constant marginal utility make it analogous to the mass of Planet Earth. It resists gaining or losing value as its quantity rises or falls, and as it is used in arbitrage.

All other goods are analogous to people and cars and grains of sand. Earth does move in response to our motion on its surface. And the monetary commodities do move in response to the myriad of arbitrages that are based on it. But neither Earth, nor gold and silver move much.

No discussion of money would be complete without a discussion of value. Everyone knows that money has value, but defining the term is a challenge for philosophers.

A value is that which one acts to gain and/or keep (Rand, The Objectivist Ethics 1964).

Looking at people, we can see that men must eat. Food is a value. It is also an objective value.

An objective value is value that is determined by the nature of reality and the requirements of man's life, as discovered by reason (Rand, What Is Capitalism? 1966).

If a man does not eat, he dies. This fact, when discovered by his mind, makes food an objective value. Man is not able to disvalue food or to value rocks for eating, at least not for long.

There were two theories of value from ancient times until the 20th century when Ayn Rand's philosophy of Objectivism. One held that values are intrinsic (and the word "objective" was also used). The other held that values are subjective.

An intrinsic value is value that is held to be in, of, by, for, and to itself, without reason and without a relationship to man's life.

A subjective value is value that is arbitrarily, without reason and without a relationship to existence (Rand, What Is Capitalism? 1966).

This author believes that Carl Menger was debunking the intrinsic theory of value, but not promoting the subjective theory defined here. Others have also formed this conclusion.

"To extend his innovative methodological individualism, Menger abandoned the Classical economists' intrinsic view of value and instead focused on the valuing subject and the way in which he determines the worth of economic goods. Menger emphasized not the equilibrium state toward which market prices tend but rather the more realistic question of how market prices get there: "Menger stressed the role of subjective evaluation with respect to the principle of marginal utility. Whereas Jevons and Walras were concerned with equilibrium, Menger was interested in process" (Younkins 16). Menger derived the nature and origin of economic values through a methodological subjectivism—but not a metaphysical, moral, or psychological one. For Menger, economic values may be subjective, but they are not arbitrary: "Menger taught that there are objective laws of nature and that goods had objective properties that made them capable of fulfilling men's needs" (Younkins 3). For Menger, the fundamental root of value is the need to sustain and enhance the valuer's biological life. Menger realized that the material world must be employed in a specific way to sustain human life and that "the value of goods is… nothing arbitrary, but always the necessary consequence of human knowledge that the maintenance of life, of well-being, or of some ever so insignificant part of them, depends upon control of a good or quantity of goods" (Menger 120)." (Stolyarov II 2006)

It is obvious why men value food for eating, but not rock. Why men value money was described earlier in this paper. The next question is why do men value gold for money, and not wood?

In our distant past, men lived purely by subsistence. Whether he hunted and gathered, or whether he engaged in primitive agriculture, each man had to do everything for himself. By definition and by nature, subsistence means there is no specialization of labor. Each man must learn each necessarily skill, fashion each primitive tool, and engage in a variety of tasks never focusing on any one sufficiently to advance the state of the art.

At some point, they discovered that each could specialize in one area of production to which he was better suited. For example, if Argg was strong he could better plough a field than Orr who may have been more nimble and therefore be better able to fashion clothes and shoes. Both men are enriched by their trading, as their combined output is higher than the sum of what each would produce individually.

But they ran into a problem: the "coincidence of wants. (Menger and Foley 1892)" If Orr wants Argg's cabbages, he must wait until Argg needs clothing or shoes. Obviously, Orr needs to eat every day, but Argg needs new clothes perhaps only once or twice per year. Argg has no problem, but Orr can't eat. How can Orr solve the problem?

Orr discovers that many commodities are easier to trade for cabbage than clothing. Beer, salt, or wheat are more acceptable in trade than clothing. One of these is more acceptable than any of the others. When Orr and his fellow men begin to use this good as an intermediate step in trade—i.e. for indirect trade—then this good becomes even more marketable. The "winner take all" dynamic probably occurred very slowly in prehistoric times. Today we can see play out very quickly with computer chips (Intel), online retail (Amazon.com), etc.

The most marketable good has the least losses as one trades in and out of it. It has the smallest bid-ask spread. This is the monetary commodity.

Orr and his fellows discover that there are actually two different goods that are the most marketable in two different contexts. One, the most "hoardable", is the most marketable in the small. For small amounts of value, the spread is the smallest in this good. At one time, salt was the most hoardable good. Eventually the markets selected silver for this role. The other, the most saleable, is the most marketable in the large. Cattle have been the most saleable good, and were eventually replaced by gold.

Antal Fekete notes that there are several phenomena that lead this dual need for monetary commodities. One is that the wage earner has a need for a commodity that he can buy in small quantities every week, to save a portion of his wages. And analogously, merchants have a need for a commodity suitable for trading large quantities of goods. Another is that there are two axes or dimensions that man has a need to carry value through: time and space. To carry value through time, one needs a commodity that is non-perishable. To carry value across distances, one needs a commodity that is either mobile such as cattle, or which carries extremely large amounts of value in a compact and light package such as gold. (Fekete, The Janus-Face of Marketability n.d.)

Whatever their origin, the stocks (inventories) of the monetary commodities rise, whereas the stocks of all other commodities do not. There is no such thing as a glut of silver or gold, but a glut in any other commodity causes the price to crash. Today, we can observe that the stocks to flows ratio (inventory divided by annual production) of gold and silver can be measured in decades. For other commodities, it is measured in months.

Another way of looking at monetary commodities is that the marginal utility (i.e. the value one places on the next unit of the good compared to the previous) either does not decline, or declines so slowly as to be unimportant to the field of economics. For any other commodity, the marginal utility declines rapidly to zero or asymptotically towards zero. This principle will be important as we discuss the monetary system below.

These three properties are aspects or facets of the same underlying principle: (1) the monetary commodity has the smallest bid-ask spread, (2) the monetary commodity has the highest stocks to flows, and (3) the monetary commodity has constant or near-constant marginal utility.

As a consequence of these properties, the number and variety of arbitrages involving monetary commodities are limitless and myriad. Contrast this to the arbitrages involving wheat; there is no comparison. If there is one detail that was repeated innumerable times in the discussion of the ostrich egg business it is that the price of the ostrich egg in different markets and in different contexts was the key to every spread and therefore every straddle and every arbitrage by every actor in the markets. The price was specified in terms of silver in those examples.

A measure of the monetary commodity serves as the unit of account for trade. This is a big and critically important task. As noted in the earlier discussion of arbitrage, every straddle of every spread has the tendency to compress that spread. A straddle between two prices is like gravity between two massive objects; it pulls them towards one another. The monetary commodity is constantly being pulled this way and that by uncountable arbitrages. If money could not resist being pulled too far in any one direction, then markets would become hopelessly distorted.

Gold has an objective value, owing to two things. It has a number of physical properties including that it is expensive to extract, rare but not that rare, divisible, recombineable, and non-perishable. As the result of the decisions of countless people over several millennia, it has the highest stocks to flows. This is one of the facts of reality that everyone must discover and deal with. While this fact is man-made, it is nevertheless a fact. Gold is a socially objective value.

Even more important than money's near-constant value in daily commerce, is its value as a numeraire. Every business must keep its books in terms of a particular unit of account, or numeraire. The business must determine periodically if it is making or losing money, i.e. adding or subtracting value, i.e. creating or destroying wealth. Assuming he can trust his numeraire (and his accounting is in order), the entrepreneur can use a simple comparison of costs to revenues. But if the numeraire is untrustworthy, volatile, debased, or otherwise liable to change in value significantly, then the entrepreneur can be deceived into thinking a loss is a gain or vice versa. This would be a recipe for collapsing trade, the economy, and the very specialization of labor.

Fortunately, gold is the numeraire extraordinaire. It has the inertia to resist changes in value no matter how much arbitrage is based on it. It has the tight bid-ask spreads to allow innumerable arbitrages that allow the values of all other goods and services to be constantly adjusted relative to one another, without impacting the value of gold itself and with minimal friction. Over time, the price of goods and services tends to fall in gold terms due to ever-increasing efficiency in production. This occurs even as the stocks of gold are gradually increased, currently at a rate of just over 1% per year.

5. A Proper Monetary System

If there is one point which this author hopes is clear from the previous sections, it is that men have the moral right to trade freely in the markets and that this is the only practical way of coordinating the activities of production and trade. Any attempt to interfere with this by force (i.e. by the government) will cause distortion, waste, inefficiency, capital decumulation, and malinvestment. Men, capital, and resources in one part of the economy will be idle for lack of demand and men in another part of the economy will be forced to do without, for lack of supply. Therefore in this and the following sections, this point will not be reiterated.

As established above, gold and silver have emerged via thousands of years of market processes as the most marketable goods in the large, and the small, respectively. A proper monetary system will therefore be based on gold and silver. In the remainder of this section, we will explore what this means.

As described in previous sections, actors in the markets can exchange goods and services for gold and silver. In a proper monetary system, they have the right to enter into long-term contracts which provide for good and services to be delivered for months or years in the future and payment to be made at the time of delivery (or at any other mutually agreeable time). They can keep their books in units of gold or silver, which not only establishes whether the enterprise has made or lost money (i.e. created or destroyed value), but also allows its owner to establish the value of the enterprise.

This is of critical importance as production and the economy grows. Many activities are only viable at large scale. One cannot manufacture computer chips (or even window glass) in a family workshop. In order to build a large-scale business, it is necessary to raise capital from non-family members and from people who are not involved in operating the business. A reliable numeraire (among other things, such as the limitation of liability) are necessary before it is possible to attract capital from outside investors.

The remainder of this section is dedicated to discussing something that has been avoided thus far in this paper: credit. There are two types: the bond and the bill.

5.1 The Gold Bond

As described above, in the description of the good that is most marketable in the small, the wage earner must produce a surplus in excess of his present consumption to set aside for his senescence. For millennia, he would use a portion of his weekly wage to buy the most hoardable good, and he would store it. Decades later, in his retirement, he would sell small quantities of this good to buy the necessities of life. He would "dishoard" the silver.

Just as subsistence is inefficient compared to the division of labor, hoarding and dishoarding is an inefficient process. The hoard produces no return; it does not work for the wage earner. And later in life as a retiree, he does not know how long he will live and thus how much he can afford to spend every day. He must either live more frugally than he can likely afford, or else risk starvation if he exhausts his hoard.

At the same time, a young man full of energy, passion, and ideas about how to improve production must spend long years laboring in the employ of someone else. This is not necessarily because he has yet to learn how to produce, but to save enough in order to open his own shop.

"Lending makes possible the concept of saving, as distinct from hoarding. It is as significant a change as when people discovered money and solved the problem of "coincidence of wants". This is for the same reason: direct exchange is replaced by indirect exchange and thereby made much more efficient.

With this new innovation, one can lend one's silver hoard in old age and get an income from the interest payments. One can budget to live on the interest, with no risk of running out of money. That is, one can exchange one's wealth for income."11

This paper, "The Loan: An Exchange of Wealth for Income" is incorporated herein by this reference (see Appendix A).

The loan was born. More than any single other economic innovation, it enabled wage earners to live better lives while working and later when retired, and at the same time enabled young entrepreneurs to create wealth for themselves and for society and posterity by giving them access to capital on terms that were beneficial to both lender and borrower.

After this, there was a financial asset that was not, itself, money. The loan is a credit instrument that matures into money.

The bond enables the young entrepreneur to hire a builder to construct his shop building, buy tools, and supplies. The producers of those goods may themselves save part of their incomes, and lend it out to yet another entrepreneur.

There is no particular limit to the size and structure of credit expansion that may occur.

A particularly astute entrepreneur eventually starts a bank.

"…the bank is the market maker. The market maker narrows the bid-ask spread, which benefits everyone. The bank does this by standardizing loans into bonds, and the bank stands ready to buy or sell such bonds. The bank also aggregates bonds across multiple lenders and across multiple borrowers. This solves the problem of excessive credit risk concentration, coincidence of wants (i.e. size matching), and saves both lenders and borrowers enormous amounts of time. And of course if either needs to get out of a deal when circumstances change, the bank makes a liquid market."11

Just as consumption is not possible without a good being produced first, borrowing is not possible without money being saved first. A loan is credit that arises from the propensity to save. And, in fact, the marginal saver sets the floor under the rate of interest. His reluctance to buy a bond at the uptick, and indeed his willingness to sell the bond and withdraw his gold coin from the banking system, curtails further expansion of credit and forces the rate of interest to go up.

This can be viewed as an arbitrage between the gold coin and the gold bond.

The marginal entrepreneur sets the ceiling on the rate of interest. As it is not possible to borrow money at a higher rate of interest than one's rate of profit, he will refuse to sell a bond if the price ticks down, and he may actually liquidate his capital, close his enterprise and buy the bonds of a more productive entrepreneur. In this case, he can clip coupons and earn a higher rate of return than working hard in his own business.

This can be viewed as an arbitrage between the enterprise and the gold bond.

These two arbitrages regulate the rate of interest and keep it bound within a small range.

5.2 The Real Bill

There is an additional kind of credit. It is not based on lending, it does not have a rate of interest, and it does not (directly) depend on saving. Commercial credit, also known as Real Bills of Exchange, arose in the markets spontaneously.

"…bills of exchange have circulated as a means of payment among spinners, weavers and other tradesmen dealing in cotton products in Lancashire before the Bank of England opened its branch in Manchester." (Fekete, You Have Never Ever Seen An Elephant Fly 2011)

The Real Bill is a bill payable by a retailer to his supplier, drawn on consumer goods in urgent demand. It is not a loan! The supplier provides the goods in exchange for payment, but is willing to accept payment in 90 days. This term is important because the retailer does not have the cash on hand to pay in full for his supplies.

Like most enterprises in a free market, the retailer operates on a thin margin. He does not have the capital to pay the gross price of the goods, when he earns a net margin of perhaps 5%. In the meantime, the supplier must pay wages to his employees. He must buy his inputs, etc.

The Real Bill market is a clearinghouse. It allows the market participants in a supply chain to organize themselves in a manner that allows them to "net out" their payments. This is important if there are a number of enterprises which each add incremental value to intermediate goods on their way to the consumer. It becomes more and more important as new enterprises enter the supply chain, as the process of production is refined. The gold is simply not there for each new participant to hold to pay cash for each delivery.

The Real Bill, unlike the bond, is self-liquidating. The bill drawn on flour delivered to the baker is paid when the consumer pays gold to buy the bread of the baker.

If the reader is wondering whether Real Bills cause inflation, the author defines this term as:

"Inflation is an expansion of counterfeit credit."12

A Real Bill expands credit, but it is not counterfeit. A paper describing inflation in more detail is incorporated herein by this reference (see Appendix B).

Both the bond and the bill depend on gold to perform a function that can only be performed by a tangible good, a commodity. Gold is the extinguisher of debt. Once the gold coin has been handed to the creditor, the debt is cleaned off the books of both parties.

6. Central Banks: Central Planning of Money, Credit, Interest, and Discount

As showed in an earlier section, central planning, even of something comparatively simple like the production and distribution of food, does not work. The result is always distortion where food-producing labor and land are idled, while men elsewhere starve to death.

"Inflation is only possible by the initiation of the use of physical force or fraud by the government, the central bank, and the privileged banks they enfranchise."12

By prohibiting the ownership of gold outright (as did the US government in 1933) or merely by the expedient of passing "legal tender" laws to force creditors to accept central bank paper as payment (plus laws to nullify gold clauses in long-term contracts such as leases) the central bank and its partners in the legislature seek to control the money supply. Not content with the myriad of arbitrages centered on gold, the central planners at the central bank think they can just dictate to the market the quantity of money in the money supply.

How do they know how much money there should be? Is this even something that can be reduced to a single scalar value? Is there any way that a central planner could know it, even so?

They have pseudo-scientific concepts that lead them to write pseudo-scientific equations that purport to give them precise answers.

Injecting money into the banking system is not equivalent to gold mining, and fixing the value of something is not equivalent to achieving a stable value arising from innumerable arbitrages in the markets.

The central bank also centrally plans credit. In its sole discretion, it decides whether it would like credit to expand or contract. Ignoring the distortions as it vacillates between

these two modes, it proceeds to issue its diktats and change the terms and rate of interest at will.

The central bank is supposed to provide stability by being a bond buyer of last resort. This is how they centrally plan the rate of interest. Buying bonds drives down the rate of interest. This is a subsidy to credit-intensive businesses, which soon become dependent on it just as with the example of subsidizing ostrich eggs.

There is no purpose to creating a lender of last resort, except to try to force credit to expand when the market wants to contract it.

In reviewing Real Bills, one fact stands out. The Real Bill is the highest quality earning asset (it earns at the discount rate), and the highest quality and most liquid asset other than gold itself. A Real Bill cannot mature into the paper scrip issued by a central bank. This would be a contradiction in terms. The very existence and modus operandi of the central bank snuffs out the lights of the market for Real Bills.

Instead, the central bank offers short-term loans to the banks at a rate they call the "discount rate" (no relation to the discount rate on Real Bills). It's just another rate of interest.

Just as central planning of food undermines the whole food production process, central planning of money undermines the whole economic process. Amazingly, Milton Friedman promoted a notion he called "economic freedom" and at the same advocated a regulation to control how the central bank regulated the money supply. Friedman thought he had calculated the magic number which is the intrinsically-correct amount to expand the money supply at all times: 3-5% per year. (Friedman, Capitalism and Freedom 1962)

There is surely a word to describe the hopelessly distorted economic system in which men are corralled, like beasts, into the monetary chutes controlled by the central bankers (whether or not they are controlled by Friedman). There is a word to describe the state of

affairs in which men are not allowed to lend or borrow gold, contract to pay over long periods in gold, save in terms of gold, arbitrage in terms of gold, and determine money, credit, interest, and discount. Whatever this word may be, "freedom" or "free market" is not it.

Economists and philosophers like Friedman do more harm than good with their theories. Whatever the merits of his many other arguments, the damage done by convincing an entire society that the disastrous and distorted outcome of our centrally banked era is "freedom" is incalculable. Entire generations now feel that the problem was deregulation, due in part to Friedman and President Reagan. They can't even conceive of a proper monetary system, nor can they imagine the honest and strict self-regulation of arbitrage.

Instead they look at the stupendous bubbles blown under Greenspan and Bernanke, and think, "how, and against whom, could the government have initiated the use of physical force to somehow prevent them?" This is begging the question, presuming what one should be asking, "can the initiation of the use of force accomplish anything?"

Beyond the bubbles, there is another even greater distortion. Most people today believe they are much wealthier than they really are. They think they hold large account balances full of money. In reality, they hold counterfeit claims to credit that will be defaulted and thus is worthless. In the meantime, feeling wealthy, they spend much more than they can afford, like revelers at a Dionysian orgy.

Can we really afford to send probes off to the moons of Jupiter? Can we really spare the money to research nano-machines? This author does not know, but is leery of the conclusion reached under the distorted view created by central planning of money, credit, interest, and discount.

A private Ponzi scheme (i.e. a scheme that relies on exponentially increasing new inflows in order to pay previous participants) could never grow to engulf the whole economy and everyone in it. A Ponzi scheme promoted by central planners can, and has.

It is worth looking at one other feature of the central banking era. Money managers are taught to think of the Treasury bond as equivalent to gold in all ways. They define it — define! — as the risk-free investment, the anchor to a portfolio. This author believes that the central bankers are at least vaguely aware of the need for something that has objective value. Of course, that is gold, and they do not allow gold in their central plan. So they offer up their bond, and by the manipulations they are empowered to do such as printing money to buy bonds, attempt to give the bond an intrinsic value. But just as chanting incantations over a marble statue will not bring it to life, declaring that a bond is the same as gold will not make it so, nor will their attempt to create intrinsic value by fiat produce the same result as the objective value of gold.

There are innumerable ways in which the government can interfere in the markets for money, credit, interest, and discount. There is no way to make an exhaustive list, but some notable cases are: (1) substituting credit for money, (2) expanding credit, (3) contracting credit, (4) raising the rate of interest, (5) lowering the rate of interest, (6) buying the bonds of an insolvent bank, and (7) replacing Real Bills with short-term debt paper.

6.1 Monetary Interference 1: Substituting Credit for Money

Earlier, we looked at the arbitrage between the gold coin and the gold bond. This arbitrage sets the floor under the rate of interest. What happens if the government forcibly removes gold and replaces it with credit?

The first consequence is that this arbitrage is no longer possible. Therefore the saver is disenfranchised. Whatever mechanism might be proposed to set the rate of interest, it will not be arbitrage between money and credit, i.e. between hoarding and saving conducted by those who have accumulated wealth.

To understand the second consequence, it is necessarily to look at the nature of credit. In a free market, credit arises in the banking system by a process that begins with a depositor who brings gold to the bank. Except in cases of a mere vaulting service, where the bank safeguards the money in exchange for a fee, the depositor lends the money to the bank. Now the bank has an asset—the gold. This asset is matched with a liability—the deposit balance. The bank, of course, needs to earn an income, so for demand deposits it uses some of the gold to buy Real Bills. Demand deposits are backed by gold and Real Bills. In the case of time deposits, the bank buys bonds. Time deposits are backed by bonds.

In all cases, the gold is redeemable, though in the case of the time deposit the depositor must wait until the time deposit matures (or else incur a loss to liquidate prematurely).

When the gold coin is paid by the bond issuer to the bank, that debt is extinguished. When the gold coin is paid by the bank to the depositor, that debt is extinguished. All debts can be—and are—regularly extinguished by payment in gold in a free market.

Today, under central banking, gold has no role in the monetary system. Credit is used as if it were money. The government borrows money into existence. This debt is monetized by the central bank. It is the central bank's debt paper that circulates.

There is no extinguisher of debt in the system. If Joe owes Mary money, he gives her this debt paper. Now he is out of debt. And now Mary is not owed to by John, but by the central bank. Mary deposits "the money" in a bank. Then, the bank owes her money and the central bank owes the bank. The bank buys a Treasury bond. Finally the Treasury owes the bank, and the bank owes Mary.

Under this system, debt only accumulates exponentially.

The third consequence of replacing gold with credit, is a change in how money comes into existence. Gold has many properties that make it ideal for use as money. Among them is the fact that it always has cost around one ounce to mine an ounce of gold. When the cost goes below one ounce, this is the signal to the kind of entrepreneur known as a miner to dig some more up. When the cost goes up to more than one ounce, the miners shut down. It is via this arbitrage that the market regulates the money supply.

In a paper standard under central banking, this mechanism is not allowed to regulate the money supply. Instead, money comes into existence through government borrowing and monetization of government borrowings by the central bank. A small group of men at the central bank are given the power to control so important a thing as the money supply!

Earlier, it was mentioned that the value of gold is objective. It has the mass and inertia to remain almost constant in a sea of arbitrages. But statists would like to replace it with something that they can give a rigidly fixed, static value—an intrinsic value—by legislative fiat backed by a gun.

The irony is that in so doing, they have created the opposite of what they wished for. They have created something of arbitrary and capricious value—a subjective value—that can move by the whim of a committee at the central bank. And its value moves by the emotions of the market participants as they reacting to the arbitrary whims of the central bank with fear and greed alternately.

A fourth consequence is that the enterprise is forced to use this subjective currency unit as his numeraire. An analogy can be made to an engineer who is building a bridge. He needs to cut a steel beam to 10 meters length. He takes out a rubber band that is marked in centimeters. How does he know how much it has stretched when he measures 10 meters? How does the businessman know that his profit of 10 dollars is real? Or could it be that the unit of measure—the dollar—has stretched, and he has actually destroyed wealth?

6.2 Monetary Interference 2: Expanding Credit

The central bank has almost perfect extra-market powers to expand credit. At least prior to the end game of their regime which we are experiencing today, if they decide to expand credit, then credit shall be expanded. What does this mean to those who work in the economy?

As discussed earlier, this power should be known by the correct name. It is the power to inflate. Credit that does not expand except by bureaucratic whim backed by a gun is not legitimate credit. It is credit that is extended either by someone who does not have savings to lend or who does not wish to extend it. Or it is credit that is extended to someone who does not have the means or the intent to ever repay it.12

As shown in my paper, "Inflation: An Expansion of Counterfeit Credit" (Appendix B), counterfeit credit is destined to inevitably default. When that happens, the creditor will take a loss. Recall that in a credit-based monetary system that this credit is "money". Money is wiped out by the default of counterfeit credit, causing deflation.

To understand the next consequence of credit expansion, let's look at arbitrage a little deeper. Earlier, we discussed how the arbitrageur lifts the offer when he buys something. This is "balanced", as it were, by his selling which presses the bid somewhere else. The net result of all arbitrage is to compress spreads. There is no upward bias on prices.

This holds true with expansion of legitimate credit. In legitimate credit, the saver willingly foregoes the use of his money. He gives it to someone else for a period of time during which he knows he does not have it. He gives it to someone who has the means and intent to repay it. This is typically an entrepreneur who uses it to expand production, which means more goods and services will be sold on the bid, thus pressing it down.

These characteristics are not present in inflation. In inflation, (credit) money that was created by an extra-market force—without any arbitrage—is now pouring into the

economy. Those who receive it bid up goods and services. But there is no corresponding pressing of the bid anywhere in the economy.

Another problem is that inflation harms those on a fixed income such as retirees collecting a fixed pension, and pension funds themselves.

6.3 Monetary Interference 3: Contracting Credit

Sometimes, the central bank declares that the economy is "overheating" and credit must be contracted. Like a man who is obese, most of the time he is bingeing, eating far too much and harming his health. Occasionally, he experiences pangs of guilt and purges for a while. So it is with central bankers and credit contraction.

It should be noted that contracting credit does not compensate for the prior expansion. This is one of the dominant themes of this thesis (as shall be further emphasized below under changes to the interest rate). Credit expansion causes its set of problems. Credit contraction causes a new set.

Let's suppose that, in the late stages of credit expansion, a business begins a long-term project to expand production. Unbeknownst to the entrepreneur, the central bank begins contracting credit shortly after he has incurred costs and risks for this project that will not yield profits for at least five years. With credit drying up, this business is unable to complete its project. It incurs a large loss or perhaps goes bankrupt.

The ever-shifting whims of the central bank committee are arbitrary and capricious. They are impossible to predict. This renders business planning impotent. Since it is not possible to run a large-scale enterprise by the seat of one's pants, by"Kremlin Watching", or by one wetted finger in the air, businesses suffer incalculable damage due to contracting credit.

Another consequence is that by definition and by nature, credit is money under this system. Contracting credit means that money goes out of existence. This will cause

defaults, which will cause more money to go out of existence, which will cause more defaults, and so on. Credit contraction, no matter the theory and no matter the stated intention of the central bankers, is necessarily shallow and short-lived.

Credit must continue to grow exponentially in the central banker's system.

6.4 Monetary Interference 4: Raising the Rate of Interest

Raising the rate of interest is closely related to contracting credit, and it is indeed one of the principal ways that the central bank contracts credit. Let's look a little more closely.

There is a fixed mathematical relationship between the market price of a bond and the rate of interest. They move inversely. If the rate of interest rises, then those who have bought bonds such as widows and orphans, pension funds, insurers, and investors, all have a capital loss. The bond may not default, but its future payments are worth less in the present. So rising rates are bad for savers and investors who have planned and committed their money for the long term.

Rising rates cause a different problem for enterprises. Every investment in expanding the business must be analyzed in terms of its costs and expected payout. This includes replacement of worn-out equipment. One of the costs is the cost of capital, i.e. the rate of interest. At each increment of higher interest rates, the marginal business project becomes sub-marginal. The equipment that was purchased years ago and operated profitably is now up for replacement. But at the new, higher interest rate replacing the equipment does not make sense.

Rising interest rates is a formula for gutting the industrial base and especially capital-intensive industries such as manufacturing.

Rising rates also impacts the prices of assets that are bought on credit, including not only business equipment and tools, but also real estate. Anyone who is suckered in to buying a house in a rising-rates environment will incur losses similar to those of the bondholder.

6.5 Monetary Interference 5: Lowering the Rate of Interest

Falling rates do not in any way compensate for, much less repair, the damage caused by rising rates. Interfering with the rate of interest is like swinging a wrecking ball. First it smashes buildings on the north side of the street. Then it swings to smash buildings on the south side. This is small consolation to the owners of the north-side buildings.

The bondholder, in the case of falling rates, has a "free" capital gain. Where does this "free" money come from? It comes from the balance sheet of the bond issuer. The bond is the liability of the bond issuer. As the price of the bond rises, so does this liability. This fact remains, whether the bond issuer understands the problem and whether he keeps his books properly, or not.

While bond speculators are being rewarded, what happens to everyone else? Each time an investment matures, people are faced with the prospect of lower returns. Many (e.g. pension funds) are built on an expectation of a particular rate of return. A falling interest rate forces investors to go farther out on the risk curve. If you don't like the yield on the 10-year Treasury bond, you can buy a 10-year subprime mortgage. The problem is that some investors must be conservative by mandate, fiduciary duty, or life circumstance.

Ultimately, when rates fall to a certain point, everyone is forced to become a speculator, or else face slow death by starvation. This is the root cause of asset bubbles. In an environment of falling rates, the asset is revalued at ever-higher levels (until the bubble pops, see rising rates and contracting credit, above). One has a choice of either investing to obtain a return that is lower than the rate at which the currency is losing value, or speculating in the latest bubble.

Investing in businesses for the purposes of profiting from improved production is relegated to a minor and shrinking role. But when investment is supplanted by speculation, and this occurs economy-wide, then, society is doomed.

There is a separate problem with investing to improve production in a falling-rate environment. Let's look at an example. Ostrich farmer Argg the 107th (descendant of the original Argg) borrows money at 6% to build a larger barn and other facilities for ostrich farming. He is making a profit, and all the while the central bank is forcing down the rate of interest. His competitor, Orr the 106th borrows money at 3% to build an even bigger ostrich ranch.

Orr can either buy more ostrich capacity than Argg for the same monthly payment, or else he can build the same capacity for a lower payment. Either way, he has a permanent structural advantage compared to Argg. First, industry was burned down by rising rates. Now industry is ploughed under by falling rates. That the fall in rates leaves in its wake newly created industry (with ever higher debt ratios) misses the point. These temporarily profitable new businesses, loaded up with debt, are not healthy in the same way that a credit-expansionary boom is not a healthy economy.

Another deleterious effect of falling interest rates is analogous to the example discussed earlier about the ostrich egg subsidy. The ostrich rancher becomes dependent on the subsidy and is threatened with bankruptcy when the subsidy is eventually withdrawn. The same thing occurs with falling interest rates.

Falling rates not only encourage more borrowing, but encourage and even demand that one repay the previous borrowing with new borrowing. This is called "rolling the loan." After some period of time of increasing and increasing one's borrowing, and never repaying anything, a business' balance sheet (or a bank's) becomes weaker and weaker and weaker.

There is another problem caused by falling rates.

"Corporate executives have a choice. The right thing to do is accurately assess the useful life of the tool, hotel, or whatever they are going to buy with the money. And sell a bond with the same duration. The bond is repaid with some of the revenues generated by the asset.

But this is suicide in a long-term structural falling interest rate environment, as I showed above.

Companies have another alternative. They can borrow short-term money and rely on the markets to be able to roll the debt each time it comes due. This avoids the problem of falling interest rates, because each time they roll the debt, they get the benefit of the new, lower interest rate (and the rate on short-term borrowing is ultra-low anyways).

But they create another problem for themselves. If, for whatever reason, the bid on short-term bonds falls, the company cannot roll its debt. And it then must face a crisis that can force it to seek creditor protection.

The falling interest rate structure creates a no-win choice between losing capital vs. duration mismatch and the certainty that sooner or later the company could be wiped out. Duration mismatch works no better for industrial companies than for financials." (Weiner, Falling Interest Rates and Duration Mismatch 2011)

6.6 Monetary Interference 6: Buying the Bonds of an Insolvent Bank

Sooner or later under the current system, banks get into trouble. They have mismatched the durations of their assets and their liabilities, in order to earn a little more margin. They have lent money to speculators in asset bubbles. They have used leverage. And they are addicted to bond rolling. When each bond is due, they just sell a new one to repay the old one plus interest plus raise incremental capital to repeat the model.

This sounds simple, but there is a problem. There is no guarantee that buyers will show up to the bank's bond auction. If the bank cannot sell new bonds, then it will be unable to pay the interest and principal on the old one that is maturing. Economists and financiers have two technical terms for this condition: "bankrupt" and "insolvent."

But central bankers use a different word: "illiquid." They assert that the bank is just in need of liquidity. Thanks to ever-changing accounting "guidelines", the banks appear to have assets that are worth more than their liabilities and their regulatory filings look very profitable. Never mind that the assets are held at values that occurred at the peak of a bubble, and the liabilities have remained constant or grown due to falling interest rates. Never mind that the "profits" are the result of accounting gimmicks.

The central bank "fixes" this mere "liquidity" problem by buying the bank's bonds. The obvious problem caused by this is that additional capital is being allocated to a firm that has proven that it destroys capital. The very purpose of the capital markets is subverted.

Next, this prevents a sale of the bank's assets. There are two net effects. First, these assets are locked up in a "zombie" bank, a corpse that cannot add any value or produce any wealth. Second, the mechanism of price discovery is subverted. Those assets, if they were sold, would come down in price. This would properly establish their worth relative to all other assets. And new buyers would be attracted, who want those assets at the right price. These points could be summarized, as with the bank itself: capital is misallocated.

Another problem is that the central bank does not have a storehouse of unencumbered gold. Its only means of obtaining money is via counterfeit credit expansion. The end result of buying bank bonds is to add to the debt of the government, and cause inflation by expanding counterfeit credit. It is not, as many commentators claim, moving the debt from the bank balance sheet to the government. It's worse than that. The bank still has its debt. Now the government has more debt than before.

This leads to two additional points. Nowadays, there is a popular term to describe when the government's policies encourage a corporation, especially a bank, to take undue risks or otherwise acts irrationally: "moral hazard". Bond buying by the central bank is a moral hazard. It at least encourages a bank to aggressively pursue ephemeral profits and risks, knowing that the central bank will be there to buy its bonds if it finds no bidder in the market. It's worse than that. The nature of competition guarantees that one bank will aggressively lend and otherwise risk its own solvency for the sake of bonuses for management, if not shareholders. If a bank has competitors who are engaged in this aggressive behavior then it has a choice. Either it can compete, or it can surrender.

Lending to unworthy borrowers is one such risk. A more complicated one is duration mismatch, otherwise known as "borrowing short to lend long." Banks can only make very small profits if they can only lend depositors' money for the same term as the

deposit. It is much easier to earn a fatter spread by borrowing from depositors on demand (with near-zero interest rates) and lending for 5 or 10 years, or equivalently buying a 5 or 10-year bond.

It is not the bank's business (literally and figuratively) to decide for how long a depositor wanted to leave the money on deposit. Lending demand deposits, or lending 3-month deposits for 12 months, is one kind of inflation (i.e. counterfeit credit). It is certain to end in ruin for the bank and possibly its depositors. This is because sooner or later people will demand their money. The longer this nefarious practice of duration mismatch continues, and the more counterfeit credit it issues, the stronger the pull of gravity on any Ponzi scheme. Whatever the trigger, depositors in aggregate will demand their money back from the banks. This is precisely when the bank needs to sell bonds (on the bid). But this is precisely when there may be a weak bid in the bond market, or no bid at all. The bid may withdraw because the market senses that there is a panic and does not know what to trust and knows only that counterfeit credit has long been issued which is now possibly defaulting. Or it may be that everyone who would normally be a bidder is in the same circumstances, as the demand for money does not increase only among those people who happen to bank at one particular bank. It occurs throughout the economy as the market realizes, too late, the nature and extent of the counterfeiting.

Banks believe they can get away with duration mismatch due to moral hazard.

6.7 Monetary Interference 7: Replacing Real Bills with Short-Term Debt Paper

Real Bills are like gold in that both have a number of interesting properties that are not understood or studied today. It is these properties that give them "moneyness".

Real Bills are the highest-quality earning asset and the highest-quality asset other than gold. This makes them suitable for backing bank demand deposits. The scope, breadth, depth, and sheer size of the bill market render it impossible for the bill market to ever go "no bid." Thus if a bank is faced with deposit redemptions, it can confidently go to the

bill market knowing that there are numerous other participants who need to buy bills (which are never more than 90 days from maturing and so often need to be replaced in a portfolio).

Government debt paper of whatever term does not have the properties of the Real Bill. It's just a bond. It does not mature into gold. Its demand depends on constant interventions by the government. And it can go "no bid". Today as of this writing, this process is beginning in earnest in the European periphery. It will eventually come to the core of the financial world, the US Treasury bond.

The bank that backs its demand deposits with government bonds, no matter the duration, is vulnerable to the ephemeral bid. It is also vulnerable to something else. The discount rate paid on Real Bills is a function of arbitrage in the markets. It cannot be changed on whim. The interest rate on the short-term government bond can be changed by decree of the central bank.

Of course, the big banks have private discussions with the central bank, so they are not surprised by such changes and have a chance to reposition their portfolio in advance. A discussion of the ramifications of such cronyism, to the extent it's not covered elsewhere in this paper, is outside the scope of this thesis.

There is an opportunity today for banks to borrow from the central bank at its "discount rate" (which has nothing to do with the discount rate of Real Bills) and other central bank "windows". They can then buy government bonds, and skim a small spread. Nowhere in a free market would one be able to buy and sell to the same counterparty and make a profit. It is a subsidy for banks, obfuscated in complex economics terminology that the layman does not comprehend.

Real Bills, like gold, are the center of a number of important arbitrages. For example there is the arbitrage of the retailer, between holding merchandise and holding Real Bills. The carry on merchandise must be greater than the discount rate, or else the retailer

should reallocate his capital to the bill market. This will tend to push the discount rate down. And it will normalize the carry across all categories of merchandise and the discount rate. With the central bank and its short-term bond, this mechanism breaks down.

Another problem caused by the replacement of Real Bills with short-term bonds is that it makes it much harder to finance consumer goods. Because the wholesaler knows that the Real Bill will be acceptable in trade with his vendors, he is willing to accept it when he delivers to the retailer. But without real bills—bonds are no substitute—either the retailer or the wholesaler is going to have to seek financing. This will be either by borrowing money conventionally, or by factoring their receivables. Needless to say, factoring is much more expensive than the discount rate, with a wider bid-ask spread.

7. Caution: Falling Currencies

A brief historical retrospective of the US monetary system is in order. In 1913, the US Congress authorized the creation of the Federal Reserve. Its mandate was limited but it grew over time to become the central planner of all things monetary. In 1933, President Roosevelt outlawed the ownership or use of gold. In 1944, the soon-to-be-victorious allied powers signed a treaty at Bretton Woods, agreeing to use the US dollar as if it were gold. Their central banks would hold dollars and borrow dollars, and pyramid credit in their own currencies on top of the dollar.

The US dollar was redeemable by foreign central banks, and so this was effectively a scheme for various currencies to have a fixed exchange rate between each other and to gold. It, at least, had the virtue of limiting credit expansion, as there was still this one tie to gold and hence to reality.

The problem with fixing the price of one thing relative to another is that whichever one is undervalued is hoarded and whichever is overvalued is dumped. The US government set the price of gold too low, and so foreign central banks were increasingly demanding delivery of gold.

President Nixon had to do something. In 1971, he defaulted on the gold obligations of the US government. This had the effect of severing gold from the monetary system, plunging us into the worldwide regime of irredeemable paper money. One consequence was that the exchange rates of the various paper currencies were allowed to "float" against one another.

"The argument for a flexible exchange rate is, strange to say, very nearly identical with the argument for daylight savings time. Isn't it absurd to change the clock in summer when exactly the same result could be achieved by having each individual change his habits? All that is required is that everyone decide to come to his office an hour earlier, have lunch an hour earlier, etc. But obviously it is much simpler to change the clock that guides all than to have each individual separately change his pattern of reaction to the clock, even though all want to do so. The situation is exactly the same in the exchange market. It is far simpler to allow one price to change, namely, the price of foreign exchange, than to rely upon changes in the

multitude of prices that together constitute the internal price structure." (Friedman, The Case for Flexible Exchange Rates (1953), 1970)

One can see here the blind faith in the dogma of central planning: "if people don't do what I think they ought to do, then it's much easier to just force them." It is almost as if they believe that the results of freedom and central planning are the same!

To Friedman, what is the Big Problem that, like daylight savings, cannot possible be achieved by arbitrage in the free markets? Here is a quote from Friedman, explaining:

"If internal prices were as flexible as exchange rates, it would make little economic difference whether adjustments were brought about by changes in exchange rates or equivalent changes in internal prices. But this condition is clearly not fulfilled. The exchange rate is potentially flexible in the absence of administrative action to freeze it. At least in the modern world, internal prices are highly inflexible." (Friedman, The Case for Flexible Exchange Rates (1953), 1970)

Friedman may be trying to compensate. I define compensation as:

Compensation is deliberately doing the wrong thing, allegedly to fix another error elsewhere in the system that one does not wish to, or cannot, fix.

"Well," Friedman may have said, "we can never roll back the laws that protect unions and innumerable other laws that set minimum prices. So we can compensate for this by allowing the exchange rate of the currencies of two countries slide in favor of one, and against the other."

Or perhaps he just thought he knew best how to centrally plan money, credit, interest, and discount. But either way, he proposed this fraudulent, unworkable, and dishonest scheme of floating exchange rates. While it certainly did not fix the problem of wage and other price inflexibility, it caused several other problems.

One side effect was to loot people's savings and thereby teach them not to save, because the word "floating" is disingenuous. The paper currencies all sink. There is no mechanism, nor desire on the part of government or the central bank, to increase the value of the currency.

The floating currency regime is a regime of sometimes-slower and sometimes-faster currency debasement. Each government engages in a race to zero. Sometimes one currency is sinking relative to the others, and sometimes others are sinking relative to it. This is enormously destructive as described below.

The US dollar is in a unique position. It is at the base of a pyramid, on top of which all other currencies are further pyramided. When one such currency moves down relative to another, it can be because the former is diluted by new currency issuance, or by the central bank accepting lower-quality assets as backing, or the inexorable march towards default (which will be dealt with in a later section of this paper).

The change in the value of one of these currencies relative to the dollar is different. The central banks of the world hold dollars as their asset and they borrow dollars. One consequence of this is that if the dollar declines relative to their own currency, they take a loss on their books, which are kept in terms of their own currency.

In times of credit expansion, the markets are moving out of base money and into every other kind of asset that can be bought with base money. This is why the current pattern occurs, whereby the European Central Bank (ECB) issues more euros in exchange for the bonds of failed states like Greece and this causes the euro to rise. It is not a phenomenon of money supply and dilution. It is credit expansion (i.e. inflation) and the result is that the market temporarily values less-liquid assets more highly than it values more-liquid dollars.

Then, of course, the ECB temporarily stops. Credit begins to contract (i.e. deflation). The US dollar becomes more sought in the markets and the other currencies decline

relative to the dollar. Watching this must baffle fans of the linear quantity theory of money. Perhaps Friedman, if he were alive today, would promote a new theory.

The never-ending process of currency devaluation has a follow-on effect: reduced investment. This of course reduces growth. This premise must be taken to its logical conclusion.

Savings, as such, is not possible using irredeemable paper.

When saving, the wage earner sets aside a portion of his wage; he consumes less than he produces. His basic intent is to hoard this value until he retires and needs to exchange it for food and other goods when he can no longer work. It is advantageous to lend to a productive enterprise to increase his quantity of money, but this is not essential to the concept. The key is that he can carry value over time. Gold and silver do this, but as described above paper does not.

Fundamentally, paper currency is a loan to the government. Unlike a productive enterprise, government is not borrowing to increase production. Government does not produce anything; it consumes. Government is borrowing to consume with neither the intent nor the means to ever repay what it borrows.

Gold and silver are positive values. One can hoard them as one can hoard any tangible commodity. Paper currency is a negative value. It is a (counterfeit) debt. Attempting to save in terms of a negative is like trying to drive a car without fuel off a cliff. At first, one seems to be moving towards one's goal. Then comes a big crash.

The government's paper scrip loses value gradually, and then suddenly.

Savings, under irredeemable paper is perverted into speculation. People are forced to crowd into one asset bubble after another. Those who blindly follow always end up transferring wealth to those who lead. People who bought houses between 2004 and

2008 in the USA still have not recovered. At least those who deposited dollars into a bank account have not lost as much, yet. When the markets finally become aware that the banking deposits are backed by mortgages on homes which are worth 25% to 50% less than their mortgage values, bank depositors will lose more.

Eventually, people will discover that they cannot save in terms of dollars (those who don't figure it out are rendered economically irrelevant as their wealth is removed from their hands). Savings is a necessary prerequisite for investment. Investment is necessary for companies to grow, to develop new technologies, products, and markets. Growth is necessary to hire new workers.

As existing companies achieve higher productivity of labor, and do not need as many workers to perform the same work, they lay off unneeded people. In a free market, the unemployed would quickly be hired by growing companies that expand and develop new businesses. But today's structurally high unemployment can be traced back to Friedman's quack prescription (among other government interference).

So too can we trace the pervasive faith today in the idea that if a country has high unemployment, it can just debase its currency. This prescription is often offered for Greece today. Let's look a little closer. Why in the world should debasement create jobs?

All else being equal, if wages are cheaper in Greece than in Italy, then companies will arbitrage the difference by firing in Italy and hiring in Greece and/or consumers worldwide will choose the cheaper goods made by cheaper labor. The point is that all else is not equal, starting with the consequences of currency debasement itself.

It should be self-evident that if a currency loses value, then all who hold it incur a loss. Equally self-evident is that it is not possible to employ workers and otherwise run a business in a country without holding significant amounts of its currency. Currency debasement therefore imposes constant losses on entrepreneurs who try to operate in such an environment.

Combine this with the fact that imported supplies, ingredients, parts, software, and other inputs are constantly rising in cost in terms of the falling currency, and one can see another reason why Friedman's assertion is false.

8. Our Modern Monetary Malady

Distortion in other areas of the economy is damaging enough, but distortion in the monetary system is much worse because the monetary system affects all economic activity. One would have to subsist in the wilderness to avoid money (and if the monetary system was so distorted as to make it seem attractive to live as a hermit, then no stronger condemnation could be pronounced).

In previous sections, we have discussed the problems of constant currency debasement, inflation (i.e. counterfeit credit expansion), deflation (i.e. forcible default of counterfeit credit), rising interest rates, falling interest rates, exponentially ratcheting debt with no extinguisher, the banishment of gold to be replaced by credit, the collapse of Real Bills to be replaced by government bonds, falling interest rates, everyone's money is someone else's liability, capital destruction and malinvestment, the attempt to create an intrinsic value government bond to replace gold which is an objective value, the establishment of numerous currencies which all sink asynchronously to each other (but somewhat synchronously with the dollar, whose derivatives they all are), and other distortions such as the substitution of speculation for saving.

These distortions cannot be contemplated in isolation. In aggregate, they create and drive a dynamic which necessarily ends in the destruction of the monetary system, including the banks, pensions, insurers, financial assets, savings of the people, and possibly the government and Western civilization. This author does not believe that the magnitude of the coming collapse can be overstated.

In 2008, total collapse could have occurred. It was averted by the worldwide coordination of many unprecedented actions by every government at every level. Nothing was sacred, not even the rule of law. By dint of expanding their balance sheets several times over in a torrent of liquidity that has not stopped—and cannot be stopped lest the collapse resume—they deferred the crisis. Of course, when it comes, the crisis will be worse than it would have been in 2008, which was worse than the crisis that would have come in 2001, which was worse than the previous episode.

The financial system is lurching towards catastrophe, and it is not under the control of the central planners or anyone else. One proof of this is the rate of interest, which continues to stubbornly fall. The ten-year US Treasury bond yields 1.9% as of this writing, and the Japanese Government Bond. Yields significantly less.

There are signs that the central planners realize, if vaguely, that falling rates are becoming a real problem. Even if they merely pay lip service to the "problem of the zero bound", they show some recognition of the problem. They certainly don't know what will happen if the yield on the long end of the bond curve reaches zero. This author believes that they at least realize that the falling interest rate structure, which has continued for 30 years, is not sustainable. They know something bad will happen, if not what.

This thesis was written to tell them what will happen!

When the interest rate on the 10-year bond reaches zero, if not long before, gold will withdraw its bid on the dollar and this will lead to the total wipeout of the dollar (which people will call "hyperinflation", though this author does not prefer that term because the phenomenon has nothing to do with the quantity of money, which he expects to be collapsing in an unstoppable cascading series of defaults – a better term would be from Mises "Crack Up Boom").

When the average duration of Treasury bonds outstanding hits zero, if not long before, gold will withdraw its bid on the dollar. This is because a 10-year bond is not like cash, but a 1-day bond is effectively cash.

When all of the capital that can be destroyed is destroyed, if not long before, gold will withdraw its bid on the dollar.

When the price of gold begins rising faster than a certain rate, US-based investors (and in certain other countries too) will be strongly encouraged not to sell any gold, i.e. bid on the dollar. This is because there is a tax on "capital gains", which in the case of gold, is just a tax on dollar debasement. If the gold price increases tenfold, and one sells gold, fully 90% of the sale price is considered a "gain" and the tax collector will take 35% of it. This amounts to a proposition: "you can keep your gold, but if you sell we will take 35% of the proceeds." When the gold price begins rising at a certain rate that virtually all gold owners have bought at a vastly lower price, the tax law alone—not to mention the terror of seeing the gold price triple in a day or a week!—will ensure that gold does not come to market.

Every aspect of the regime of irredeemable paper is designed to move forward towards the moment of Armageddon. One of the reasons why the rate of interest continues to fall is that the dollar system is a closed system. All dollars eventually go to the bond market. One can buy gold (or real estate or stock or antique cars) but the seller of the gold then has the dollars. He deposits them in a bank. The bank may buy an asset, but the seller of the asset has dollars. Eventually those dollars are recycled into the Treasury bond.

The Treasury is constantly "borrowing" money without the means or intent to ever repay it, for the purpose of funding consumption. Think about this.

All money goes to the government where it is consumed, destroyed.

The system holds together well because smart people are working hard to create more capital. But it's an unfair race. Capital creation is accelerating, as each new technology improves not only the rate of productivity but the rate of discovery of new technologies and new improvements of productivity. However, capital destruction is also accelerating exponentially.

It is easier to burn down a building than to envision, design, architect, engineer, finance, and construct a building. It is the same with capital.

As capital is destroyed, the unemployment rate rises. Every person added to the rolls of the dole adds to the burden that must be supported by an ever-decreasing number of productive people. And, as described earlier, the very act of taxing the productive people causes distortions, capital misallocations, and reduces economic coordination, which reduces productivity.

When the employment rate reaches zero, if not long before, then gold will withdraw its bid on the dollar.

In order to prop up banks in the vain hope that they will lend a little more to enterprises that need to borrow to continue operations, the central bank is now buying bonds from private issuers, from mortgages on devalued homes, and other "toxic assets".

When the central bank's balance sheet is dominated by illiquid and unsalable assets held on the books at far above their real value (if there is any) then gold will withdraw its bid on the dollar. If not long before then.

These trends are some of the drivers (there are probably others) that necessarily lead to financial implosion: (1) interest rates on the long bond falling towards zero, (2) the average duration of outstanding Treasury bonds falling towards zero, (3) the exponentially falling price of the dollar in terms of gold including rising volatility in the price, (4) accumulated capital falling towards zero, (5) employment falling towards zero, (6) the market value divided by the book value of assets on the central bank's balance sheet falling towards zero, and (7) the average amount of new Treasury bond issuance minus new central bank Treasury bonds falling towards zero (i.e. the central bank is buying a greater and greater proportion of Treasury bonds issued).

This author proposes that these trends should be monitored, and plans to organize a project to do so and publish its method and findings periodically, if not continuously on the web.

9. Gold Backwardation

There is a way to measure the withdrawal of the gold bid.

9.1 Defining Backwardation

Most traders define "backwardation" for a commodity as when the price of a futures contract is lower than the price of the same good in the spot market.

But in every market, as described earlier, there are always two prices for a good: the bid and the offer. To sell a good, one must take the bid. And likewise, to buy the good one must pay the offer. In backwardation, one can sell a physical good for cash and simultaneously buy a futures contract, and make a profit on the arbitrage. Note that in doing this trade, one's position does not change in the end. One begins with a certain amount of the good and ends (upon maturity of the contract) with that same amount of the good.

Backwardation is when the bid in the spot market is greater than the offer in the futures market.

Many commodities, like wheat, are produced seasonally. Consumption is much more evenly spread around the year. Immediately prior to the harvest, the spot price of wheat is normally at its highest in relation to wheat futures. This is because wheat inventories in the warehouses are very low. People will have to pay a higher price for immediate delivery. At the same time, everyone in the market knows that the harvest is coming in one month. So the price, if a buyer can wait one month for delivery, is lower. This is a case of backwardation.

Backwardation is typically a signal of a shortage in a commodity. Anyone holding the commodity could make a risk-free profit by delivering it and getting it back later. If others put on this trade, and others, and so on, this would push down the bid in the spot market, and lift up the offer in the futures market until the backwardation disappeared.

As discussed earlier, this process of profiting from arbitrage compresses the spread one is arbitraging.

Actionable backwardations typically do not last long enough for the small trader to even see on the screen, much less trade. This is another way of saying that markets do not normally offer risk-free profits. In the case of wheat backwardation, for example, the backwardation may persist for weeks or longer. But there is no opportunity to profit for anyone, because no one has any wheat to spare. There is a genuine shortage of wheat before the harvest.

9.2 Why Gold Backwardation is Important

Could backwardation happen with gold? Gold is not in a shortage. One just has to measure abundance using the right metric (stocks to flows). The World Gold Council estimates this number to be around 80 years. In all other commodities (except silver), inventories represent a few months of production. Other commodities can even have "gluts", which usually lead to a price collapse.

So, what would a lower price on gold for future delivery mean compared to a higher price of gold in the spot market? By definition, it means that gold delivered to the market is in short supply.

The meaning of gold backwardation is that trust in future delivery is scarce.

In an ordinary commodity, scarcity of the physical good available for delivery today is resolved by higher prices. At a high enough price, demand for wheat falls until existing stocks are sufficient to meet the reduced demand.

But how is scarcity of trust resolved?

Thus far, the answer has been via higher prices. Higher prices do coax some gold out of various hoards, for example, jewelry. Gold went into backwardation for the first time in

December 2008. One could have earned a 2.5% (annualized) profit by selling physical gold and simultaneously buying a February 2009 future. Gold was $750 on Dec 5 but it rocketed to $920—a gain of 23%--by the end of January.

But when backwardation becomes permanent, then trust in the gold futures market will have collapsed. Unlike with wheat, millions of people and many institutions have plenty of gold they can sell in the physical market and buy back via futures contracts. When they choose not to, that is the beginning of the end of the current financial system. Why?

Think about the similarities between the following three statements:

- "My paper gold future contract will be honored by delivery of gold."
- "If I trade my gold for paper now, I will be able to get gold back in the future."
- "I will be able to exchange paper money for gold in the future."

The reason why there was a significant backwardation (smaller backwardations have occurred intermittently since then) is that people did not believe the first statement. They did not trust that the gold future would be honored in gold.
And if they don't believe that paper futures will be honored in gold, then they have no reason to believe that they can get gold in the future at all.

If some gold owners still trust the system at that point, then they can sell their gold (at much higher prices, probably). But sooner or later, there will not be any sellers of gold in the physical market.

9.3 Higher Prices Can't Cure Permanent Gold Backwardation

With an ordinary commodity, there is a limit to what buyers are willing to pay based on the need satisfied by that commodity, the availability of substitutes, and the buyers' other needs that also must be satisfied within the same budget. The higher the price, the more that holders and producers are motivated to sell, and the less consumers are motivated (or able) to buy. The cure for high prices is high prices.

But gold is different. Unlike wheat, gold is not bought for consumption. While some people hold it to speculate on increases in its paper price, these speculators will be replaced by others who hold it because it is money.

Gold does not have a "high enough" price that will discourage buying or encourage selling. No amount of price change will bring back trust in paper currencies once the gold owners have lost confidence. Thus gold backwardation will not only recur, but at some point, it will not leave its backwardated state.

In looking at the bid and ask, one other observation is germane to this discussion. In times of crisis, it is always the bid that is withdrawn—there is never a lack of offers. Permanent gold backwardation can be seen as the withdrawal of bids denominated in gold for irredeemable government debt paper (e.g. dollar bills).

Backwardation should not be able to happen at all as gold is so abundant. The fact that it has happened and keeps happening means that it is inevitable that, at some point, backwardation will become permanent. The erosion of faith in paper money is a one-way process (with some zigs and zags). Eventually, backwardation will become deeper and deeper (while the dollar price of gold is rising, probably exponentially).

How can one tell if a gold backwardation episode is likely to be cured or if it will become permanent?

The obvious answer is that if one observes that backwardation is deepening as the price of gold is rising rapidly, that means the backwardation is very serious. In the past, backwardations have been "cured" by rising prices.

By the point of permanent backwardation, there will be signs everywhere of collapse: debt defaults, bankruptcies, failed bond auctions, and rising volatility in everything

including especially gold. Let's drill into rising volatility to see if there is something else we can glean.

Volatility can be a sign of widening spreads, or conversely, widening spreads can lead to increasing volatility. This is because the difference between a seller taking the bid and a buyer taking the offer is greater. And behind the best bid or best offer, the next best is farther away too, and of smaller size. Any buying or selling in quantity can "punch through" a stack of thinner bids or offers that are farther apart. In milliseconds, the price could move 10%.

Two recent stories underscore this point. MF Global, a large commodities broker, declared bankruptcy and took a lot of client money with it (many of whom have not returned to the markets). Credit Agricole has closed its commodities trading business and has curtailed its lending activities to the commodities market. Both of these events have the net effect of reducing liquidity, widening bid-ask spreads.

It bears repeating that the backdrop to gold backwardation is stark terror in the markets. People will react swiftly to every risk, both real and imagined. It won't take much to make them lift their offer or pull their bid. In times of crisis, it is the bid that is withdrawn (thus the emphasis the withdrawal of the gold bid on the dollar).

We come to the idea of widening spreads. How would we expect the spreads to widen in gold as it withdraws its bid on the dollar? In the spot market, this will look like the offer to sell gold is rising relentlessly. The bid, of course, will chase after it but the pressure is on the offer. By this point, the market makers will probably withdraw from the market one by one as they either decide to keep their gold inventory, or just pause during a period of what they assume is temporary volatility. With the market makers gone, the spreads must widen considerably. With the pressure focused on the offer, it will be the offer rising more aggressively than the bid.

In the futures markets, the picture is quite different. The bid will be withdrawing, as dollar holders who want gold increasingly focus on the physical market where they can get their gold immediately. The offer, on the other hand, is made by people who must assume that they will have to honor their contracts. They will not be eager to chase the bid down. The downward pressure is focused on the bid and the offer may not decline much at all.

This may turn out to be the early warning sign before even one notices backwardation (i.e. when Spot(bid) – Future(offer) > 0). One may see widening of both bid-ask spreads, in opposite directions. However, if the offer on the future is not falling then, initially, there may not be backwardation.

The final step is when gold completely withdraws its bid on paper. Paper's bid on gold, however, is unlimited, and this is why paper will inevitably collapse without gold, as we shall discuss below.

9.4 The Crack Up Boom

Throughout this thesis paper, "gold" has been used equivalently with "money." This is because throughout history, up until gold withdraws its bid on the dollar, gold has always played an important role, even if it was not accepted as currency. When gold withdraws its bid entirely, this role will go unfilled. The world will discover that it is impossible to sustain a contradiction in reality for long. A monetary system without money is just such a contradiction.

In a process that this author expects to complete in a few weeks to a few months, the paper currencies will lose all value. This section describes that process. Let's start by looking at what will happen to non-monetary commodities when gold goes into permanent backwardation.

People who hold paper but who desire to own gold will discover gold-commodity arbitrage. They can buy crude or wheat or copper for paper, and then sell the commodity

for gold. This will drive up the price of crude in terms of paper, and drive down the price of crude in terms of gold. The crude price in dollars will rise exponentially and its price in gold will fall exponentially.

For example, today the price of a barrel of crude in terms of paper is around $100 and an ounce of gold priced in crude is 17 barrels. It is possible to trade $1700 for one ounce of gold this way. Right now, there is no gain to this trade. Anyone buy an ounce of gold directly for $1700.

But when gold is no longer offered for dollars, this indirect way will be the only way to buy gold. The more this trade is used, the more that both the dollar and gold prices of a commodity will be moved, up and down respectively. Let's look at an example. If the price of crude in paper rises to $2000 and the price of gold in crude rises to 150 barrels, then one would need $300,000 to trade for one ounce of gold this way. There will always be a gold bid on crude, but it doesn't have to be high.

It is important to emphasize that the rising prices of commodities (and hence consumer goods) will not be driven by a rising money supply. Consumers will not be bidding up the price of gasoline to $10,000 a gallon or whatever it may become. Prices will be driven by arbitrage. The consumer will not participate until the very end. When they realize that the paper dollar will soon be worthless, they will rush to the stores to denude the shelves even of stuff they don't need. At least 50 pairs of ladies size 5 shoes will have some value after the dollar collapses.

Let's drill down a little deeper. The gold-commodity arbitrage will bid up commodities only in the spot market. It will not be possible to arrange all legs of this arbitrage to occur simultaneously. In this environment of collapsing trust, only when one has the crude or other commodity will the gold bidder be willing to make a deal. While this author believes it is safe to predict that there will always be a gold bid on oil and food, it will be a weak bid. This is because demand for everything will be collapsing by this point. With this gold-commodity arbitrage trade occurring, there will be vast amounts of

commodities dumped on the gold bid. The seller will have to meet the terms of the gold bidder, and the least of which will likely be "cash and carry only."

The price of commodities in the spot market will be bid up to unimaginable levels, but the commodities futures will not. Gold backwardation will drive backwardation of every liquid commodity wherein there is a gold bid. When gold backwardation is 10%, then crude will be in a 10% backwardation. When gold goes to 20%, so goes crude, and so on.

It is worth noting the connection between gold backwardation and the exponential accumulation of debt. The government bond and all other debts will ultimately be defaulted. This part is obvious to many commentators and market analysts. What is not obvious, though it is self-evident, is that when the debt that backs the currency defaults, then the currency is worthless. Those who sell the bond in exchange for paper dollars have not escaped to safety. Only gold will be safe.

There is one final comment to make on the default of the bond. Given that governments never pay the interest or the principle, they just sell new bonds to refinance and cover new spending, it likely that there will never be a technical default on the US Treasury bond. The end will come when no bidders show up to buy the bond. This is why fatal trend #7 was that the Fed is buying more and more Treasury bonds. The Fed, of course, creates new dollars ex nihilo with which to buy the bonds.

Given the emphasis on the theme of collapsing trust in this section, we can add one more item to our list from earlier: (8) the willingness of people to trust one another falls to zero.

10. A Proper Gold Standard

As should be evident by this point, proper social system for man is a full, unregulated, laissez-faire capitalism. This is the context into which a proper, unadulterated gold standard fits. The elements of such a gold standard arise from arbitrages in the markets, and include Real Bills, gold bonds, and freely circulating gold and silver coins (which values relative to one another are not fixed by fiat!)

"…if we are to have a dynamic economy with production, trade, invention, innovation, global markets, and growing efficiency then there must be a financial system in which gold **flows"** [emphasis in original] (Weiner, Stocks vs. Flows 2012)

Today, of course, gold and silver coins do not flow. There are no Real Bills (which could not exist without the circulation of gold or silver coins). There are not even gold bonds, which may be feasible today for certain issuers under the right circumstances.

This author wrote a paper entitled "Gold Bonds: Averting Financial Armageddon" which lays out his proposal for how to avoid the collapse outlined above, and how to begin moving from where we are today, to a gold standard. That paper is incorporated herein by this reference (see Appendix C).

11. Appendix A
The Loan: An Exchange of Wealth for Income

As the title of this essay suggests, a loan is an exchange of wealth for income. Like everything else in a free market (imagine happier days of yore), it is a voluntary trade. Contrary to the endemic language of victimization, both parties regard themselves as gaining thereby, or else they would not enter into the transaction.

In a loan, one party is the borrower and the other is the lender. Mechanically, it is very simple. The lender gives the borrower money and the borrower agrees to pay interest on the outstanding balance and to repay the principle.

As with many principles in economics, one can shed light on a trade by looking back in history to a time before the trade existed and considering how the trade developed.

It is part of the nature of being a human that one is born unable to work, living on the surplus produced by one's parents. One grows up and then one can work for a time. And then one becomes old and infirm, living but not able to work. If one wishes not to starve to death in old age, one can have lots of children and hope that they will care for their parents in their old age. Or, one can produce more than one consumes and hoard the difference.

One discovers that certain goods are better for hoarding than others. Beyond a little food for the next winter season, one cannot hoard very much. One of the uses of the monetary commodity is to carry value over time. So one uses a part of one's weekly income to buy, for example, silver. And over the years, one accumulates a pile of silver. Then, when one is no longer able to work, one can sell the silver a little at a time to buy food, clothing, fuel, etc.

Like direct barter trade, this is inefficient. And there is the risk of outliving one's hoard. So at some point, a long time ago, they discovered lending. Lending makes possible the concept of saving, as distinct from hoarding. It is as significant a change as when people discovered money and solved the problem of "coincidence of wants". This is for the same reason: direct exchange is replaced by indirect exchange and thereby made much more efficient.

With this new innovation, one can lend one's silver hoard in old age and get an income from the interest payments. One can budget to live on the interest, with no risk of running out of money. That is, one can exchange one's wealth for income.

If there is a lender, there must also be a borrower or there is no trade. Who is the borrower? He is typically someone young, who has an income and an opportunity to grow his income. But the opportunity—for example, to build his own shop—requires capital that he does not have and does not want to spend half his working years accumulating. The trade is therefore mutually beneficial. Neither is "exploiting" the other, and neither is a victim. Both gain from the deal, or else they would not agree to it. The lender needs the income and the borrower needs the wealth. They agree on an interest rate, a term, and an amortization schedule and the deal is consummated.

I want to emphasize that we are still contemplating the world long before the advent of the bank. There is still the problem of "coincidence of wants" with regard to lending; the old man with the hoard must somehow come across the young man with the income and the opportunity. The young man must have a need for an amount equal to what the old man wants to lend (or an amount much smaller so that the old man can lend the remainder to another young man). The old man cannot diversify easily, and therefore his credit risk is unduly concentrated in the one young man's business. And bid-ask spreads on interest rates are very wide, and thus whichever party needs the other more urgently (typically the borrower) is at a large disadvantage.

Of course the very next innovation that they discovered is that one need not hoard silver one's whole career and offer to lend it only when one retires. One can lend even while one is working to earn interest and let it compound. This innovation lead to the creation of banks.

But before we get to the bank, I want to drill a little more deeply into the structure of money and credit that develops.

Before the loan, we had only money (i.e. specie). After the loan, we have a more complex structure. The lender has a paper asset; he is the creditor of the young man and his business who must pay him specie in the future. But the lender does not have the money any more. The borrower has the money, but only temporarily. He will typically spend the money. In our example, he will hire the various laborers to clear a plot of land, build a building and he will buy tools and inventory.

What will those laborers and vendors do with the money? Likely they will keep some of it, spend some of it… and lend some of it. That's right. The proceeds that come from what began as a loan from someone's hoard have been disbursed into the economy and eventually land in the hands of someone who lends them again! The "same" money is being lent again!

And what will the next borrower do with it? Spend it. And what will those who earn it do? Spend some, keep some, and lend some. Again.

There is an expansion of credit! There is no particular limit to how far it can expand. In fact, it will develop iteratively into the same topology (mathematical structure) as one observes with fractional reserve banking under a proper, unadulterated gold standard!

Without banks, there are two concepts that are not applicable yet. First is "reserve ratio". Each person is free to lend up to 100% of his money if he wishes, though most people would not do that in most circumstances.

And second is duration mismatch. Since each lender is lending his own money, by definition and by nature he is lending it for precisely as long as he means to. And if he makes a mistake, only he will bear the consequences. If one lends for 10 years duration, and a year later one realizes that one needs the money, one must go to the market to try to find someone who will buy the loan. And then discover the other side of that large bid-ask spread, as one may take a loss doing this.

Now, let's fast forward to the advent of the investment bank. Like everyone else in the free market, the bank must do something to add value or else it will not find willing trading partners. What does the bank do?

As I hinted above, the bank is the market maker. The market maker narrows the bid-ask spread, which benefits everyone. The bank does this by standardizing loans into bonds, and the bank stands ready to buy or sell such bonds. The bank also aggregates bonds across multiple lenders and across multiple borrowers. This solves the problem of excessive credit risk concentration, coincidence of wants (i.e. size matching), and saves both lenders and borrowers enormous amounts of time. And of course if either needs to get out of a deal when circumstances change, the bank makes a liquid market.

The bank must be careful to protect its own solvency in case of credit risk greater than it assumed. This is the reason for keeping some of its capital in reserve! If the bank lent 100% of its funds, then it would be bankrupt if any loan ever defaulted.

What the bank **must not** do, what it has **no right** to do, is lend its depositors' funds for longer than they expressly intended. If a depositor wants to lend for 5 years, it is not the right of the bank to lend that depositor's money for 10! The bank has no right to declare, "well, we have a reserve ratio greater than our estimated credit risk and therefore we are safe to borrow short from our depositors to lend long"

Not only has the bank no way to know what reserve ratio will be proof against a run on the bank, but it is inevitable that a run will occur. This is because the depositors think they will be getting their money back, but the bank is concealing the fact that they won't behind an opaque balance sheet and a large operation. So, sooner or later, depositors need their money for something and the bank cannot honor its obligations. So the bank must sell bonds in quantity. If other banks are in the same situation, the bond market suddenly goes "no bid".

The bank has no legal right and no moral right to lend a demand deposit or to lend a time deposit for one day longer than its duration. And even then, the bank has no mathematical expectation that it can get away with it forever.

Like every other actor in the market (and more broadly, in civilization) the bank adds enormous value to everyone it transacts with, provided it acts honestly. If a bank chooses to act dishonestly (or there is a central bank that centrally plans money, credit, interest, and discount and forces all banks to play dirty) then it can destroy value rather than creating it.

Unfortunately, in 2012 the world is in this sorry state. It is not the nature of banks or banking per se, it is not the nature of borrowing and lending per se, it is not the nature of fractional reserves per se. It is duration mismatch, central planning, counterfeit credit, buyers of last/only resort, falling interest rates, and a lack of any extinguisher of debt that are the causes of our monetary ills.

12. Appendix B
Inflation: An Expansion of Counterfeit Credit

The Keynesians and Monetarists have fooled people with a clever sleight of hand. They have convinced people to look at prices (especially consumer prices) to understand what's happening in the monetary system.

Anyone who has ever been at a magic act performance is familiar with how sleight of hand often works. With a huge flourish of the cape, often accompanied by a loud sound, the right hand attracts all eyes in the audience. The left hand of the illusionist then quickly and subtly takes a rabbit out of a hat, or a dove out of someone's pocket.

Watching a performer is just harmless entertainment, and everyone knows that it's just a series of clever tricks. In contrast, the monetary illusions created by central banks, and the evil acts they conceal, can cause serious pain and suffering. This is a topic that needs more exposure.

The commonly accepted definition of inflation is "an increase in consumer prices", and deflation is "a decrease in consumer prices." A corollary is a myth that stubbornly persists: "today, a fine suit costs the same in gold terms as it did in 1911, about one ounce." Why should that be? Surely it takes less land today to raise enough sheep to produce the wool for a suit, due to improvements in agricultural efficiency. I assume that sheep farmers have been breeding sheep to maximize wool production too. And doesn't it take less labor to shear a sheep, not to mention card the wool, clean it, bleach it, spin it into yarn, weave the yarn into fabric, and cut and stitch the fabric into a suit?

Consumer prices are affected by a myriad of factors. Increasing efficiency in production is a force for lower prices. Changing consumer demand is another force. In 1911, any man who had any money wore a suit. Today, fewer and fewer professions require one to

be dressed in a suit, and so the suit has transitioned from being a mainstream product to more of a specialty market. This would tend to be a force for higher prices.

I don't know if a decent suit cost $20 (i.e. one ounce of gold) in 1911. Today, one can certainly get a decent suit for far less than $1600 (i.e. one ounce), and one could pay 3 or 4 ounces too for a high-end suit.

My point is that consumer prices are a red herring. Increased production efficiency tends to push prices down, and monetary debasement tends to push prices up. If those forces balance in any given year, the monetary authorities claim that there is no inflation.

This is a lie.

Inflation is not rising consumer prices. One can't understand much about the monetary system from inside this box. I offer a different definition.

Inflation is an expansion of counterfeit credit.

Most Austrian School economists realize that inflation is a monetary phenomenon. But simply plotting the money supply is not sufficient. In a gold standard, does gold mining create inflation? How about private lending? Bank lending? What about Real Bills of Exchange?

As I will show, these processes do not create inflation under a gold standard. Thus I contend the focus should be on counterfeit credit. By definition and by nature, gold production is never counterfeit. Gold is gold, it is divisible and every piece is equivalent to any other piece of the same weight.

Gold mining is arbitrage: when the cost of mining an ounce of gold is less than one ounce of gold, miners will act to profit from this opportunity. This is how the market signals that it needs more money. Gold, of course, has non-declining marginal utility, which is

what makes it money in the first place, so incremental changes in its supply cause no harm to anyone.

Similarly, if Joe works hard, saves his money, and gives a loan of 100 ounces to John, this is an expansion of credit. But it is not counterfeit or illegitimate or inflation by any useable definition of the term.

By extension, it does not matter whether there are market makers or other intermediaries in between the saver and the borrower. This is because such middlemen have no power to expand credit beyond what the source—the saver—willingly provides. And thus bank lending is not inflation.

Below, I will discuss various kinds of credit in light of my definition of inflation.

In all legitimate credit, at least two factors distinguish it from counterfeit credit. First, someone has produced more than he has consumed. Second, this producer knowingly and willingly extends credit. He understands exactly when, and on what terms, with what risks he will be paid in full. He realizes that in the meantime he does not have the use of his money.

Let's look at the case of fractional reserve banking. I have written on this topic before (http://dailycapitalist.com/2011/03/22/fractional-reserve-banking-the-real-story/). To summarize: if a bank takes in a deposit and lends for a longer duration than the deposit, that is duration mismatch. This is fraud and the source of banking system instability and crashes. If a bank lends deposits only for the same or shorter duration, then the bank is perfectly stable and perfectly honest with its depositors. Such banks can expand credit by lending, (though they cannot expand money, i.e. gold), but it is real credit. It is not counterfeit.

Legitimate lending begins with someone who has worked to save money. That person goes to a bank, and based on the bank's offer of different interest rates for different

durations, chooses how long he is willing to lock up his money. He lends to the bank under a contract of that duration. The bank then lends it out for that same duration (or less).

The saver knows he must do without his money for the duration. And the borrower has the use of the money. The borrower typically spends it on a capital purchase of some sort. The seller of that good receives the money free and clear. The seller is not aware of, nor concerned with, the duration of the original saver's deposit. He may deposit the money on demand, or on a time deposit of whatever duration.

There is no counterfeiting here; this process is perfectly honest and fair to all parties. This is not inflation!

Now let's look at Real Bills of Exchange, a controversial topic among members of the Austrian School. In brief, here is how Real Bills worked under the gold standard of the 19th century. A business buys merchandise from its supplier and agrees to pay on Net 90 terms. If this merchandise is in urgent consumer demand, then the signed invoice, or Bill of Exchange, can circulate as a kind of money. It is accepted by most people, at a discount from the face value based on the time to maturity and the prevailing discount rate.

This is a kind of credit that is not debt. The Real Bill and its market act as a clearing mechanism. The end consumer will buy the final goods with his gold coin. In the meantime, every business in the entire supply chain does not necessarily have the cash gold to pay at time of delivery.

This problem of having gold to pay at time of delivery would become worse as business and technology improved to allow additional specialization and thus extend the supply chain with additional value-added businesses. And it would become worse as certain goods went into high demand seasonally (e.g. at Christmas).

The Real Bill does not come about via saving and lending. It is commercial credit that is extended based on expectations of the consumer's purchases. It is credit that arises from consumption, and it is self-liquidating. It is another kind of legitimate credit.

For more discussion of Real Bills, see the series of pieces by Professor Antal Fekete (see http://www.silverbearcafe.com/private/fekete.html, starting with Lecture 4).

Now let's look at counterfeit credit. By the criteria I offered above, it is counterfeit because there is no one who has produced more than he has consumed, or he does not knowingly or willing forego the use of his savings to extend credit.

First, is the example where no one has produced a surplus. A good example of this is when the Federal Reserve creates currency to buy a Treasury bond. On their books, they create a liability for the currency issued and an asset for the corresponding bond purchase. Fed monetization of bonds is counterfeit credit, by its very nature. Every time the Fed expands its balance sheet, it is inflation.

It is no exaggeration to say that the very purpose of the Fed is to create inflation. When real capital becomes more scarce, and thus its owners become more reluctant to lend it (especially at low interest rates), the Fed's official role is to be the "lender of last resort". Their goal is to continue to expand credit against the ever-increasing market forces that demand credit contraction.

And of course, all counterfeit credit would go to default, unless the creditor has strong collateral or another lever to force the debtor to repay. Thus the Fed must act to continue to extend and pretend. Counterfeit credit must never end up where it's "pay or else". It must be "rolled". Debtors must be able to borrow anew to repay the old debts—forever. The job of the Fed is to make this possible (for as long as possible).

Next, let's look at duration mismatch in the financial system. It begins in the same way as the previous example of non-counterfeit credit—with a saver who has produced more

than he has consumed. So far, so good. He deposits money in a bank, and this is where the counterfeiting occurs. Perhaps he deposits money on demand and the bank lends it out. Or perhaps he deposits money in a 1-year time account and the bank lends it for 5 years. Both cases are the same. The saver is not knowingly foregoing the use of his money, nor lending it out on such terms and length.

This, in a nutshell, is the common complaint that is erroneously levied against all fractionally reserved banks. The saver thinks he has his money, but yet there is another party who actually has it. The saver holds a paper credit instrument, which is redeemable on demand. The bank relies on the fact that on most days, they will not face too many withdrawal demands. However, it is a mathematical certainty that eventually the bank will default in the face a large crowd all trying to withdraw their money at once. And other banks will be in a similar position. And the collapsing banking system causes a plunge into a depression.

There are also instances where the saver is not willingly extending credit. The worker who foregoes 16% of his wage to Social Security definitely knows that he is not getting the use of his money. He is extending credit, by force—i.e. unwillingly. The government promises him that in exchange, they will pay him a monthly stipend after he reaches the age of retirement, plus most of his medical expenses. Anyone who does the math will see that this is a bad deal. The amount the government promises to pay is less than one would expect for lending money for so long, especially considering that the money is forfeit when you die.

But it's worse than it first seems, because the amount of the monthly stipend, the age of retirement, and the amount they pay towards medical expenses are unknown and unknowable in advance, when the person is working. They are subject to a political process. Politics can shift suddenly with each new election.

Social Security is counterfeit credit.

With legitimate credit, there is a risk of not being repaid. However, one has a rational expectation of being repaid, and typically one is repaid. On the contrary, counterfeit credit is mathematically certain not to be repaid in the ordinary course. This is because the borrower is without the intent or means of ever repaying the loan. Then it is a matter of time before it defaults, or in some circumstances forces the borrower to repay under duress.

Above, I offered two factors distinguishing legitimate credit:

1. The creditor has produced more than he has consumed
2. He knowingly and willingly extends credit

Now, let's complete this definition with the third factor:

3. The borrower has the means and the intent to repay

Every instance of counterfeit credit also fails on the third factor. If the borrower had both the means and the intent to repay, he could obtain legitimate credit in the market.

A corollary to this is that the dealers in counterfeit credit, by nature and design, must work constantly to extend it, postpone it, "roll" it, and generally maintain the confidence game. Counterfeit credit cannot be liquidated the way legitimate credit can be: by paying it back normally. Sooner, or later, it inevitably becomes a crisis that either hurts the creditor by default or the debtor by threatening or seizing his collateral.

I repeat my definition of inflation and add my definition of deflation:

> *Inflation is an expansion of counterfeit credit.*
> *Deflation is a forcible contraction of counterfeit credit.*

Inflation is only possible by the initiation of the use of physical force or fraud by the government, the central bank, and the privileged banks they enfranchise. Deflation is only possible from, and is indeed the inevitable outcome of, inflation. Whenever credit is

extended with no means or ability to repay, that credit is certain to eventually become a crisis that threatens to harm the creditor. That the creditor may have collateral or other means to force the debtor to take the pain and hold the creditor harmless does not change the nature of deflation.

Here's to hoping that in 2012, the discussion of a more sound monetary and banking system begins in earnest.

13. Appendix C
Gold Bonds: Averting Financial Armageddon

After the near-collapse of the financial system in 2008, a growing number of people have come to realize that our monetary disease is terminal. It is that group to whom I address this paper. I sincerely hope that this group includes leaders in business, finance, and government.

I do not believe that my proposal herein is necessarily "realistic" (i.e. pragmatic). There are many interest groups that may oppose it for various reasons, based on their short-sighted desire to try to continue the status quo yet a while longer. Nevertheless, I feel that I must write and publish this paper. To say nothing in the face of the greatest financial calamity would go against everything I believe.

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It seems self-evident. The government can debase the currency and thereby be able to pay off its astronomical debt in cheaper dollars. But as I will explain below, things don't work that way. In order to use the debasement of paper currencies to repay the debt more easily, governments will need to issue and use the gold bond[1].

I give credit for the basic idea of using gold bonds to solve the debt problem to Professor Antal Fekete, as proposed in his paper: "Cut the Gordian Knot: Resurrect the Latin Monetary Union" (http://www.professorfekete.com/articles/AEFCutTheGordianKnot.pdf). My paper covers different ground than Fekete's, and my proposal is different as well. I encourage readers to read both papers.

[1] Wherever I refer to gold, I also mean silver. For the sake of brevity and readability I will only say gold in most cases.

The paper currencies will not survive too much longer. Most governments now owe as much or more than the annual GDPs of their nations (typically far more, under GAAP accounting). But the total liabilities in the system are much larger.

Even worse, in the formal and shadow banking system, derivative exposure is estimated to be more than 700 trillion dollars. Many are quick to insist that this is the "gross" exposure, and the "net" is much smaller as these positions are typically hedged. But the real exposure is close to the "gross" exposure in a crisis. While each party may be "hedged" by having a long leg and a balancing short leg, these will not "net out". This is because in times of stress the bid (but not the offer) is withdrawn. To close the long leg of an arbitrage, one must sell on the bid (which could be zero). To close the short leg, one must buy at the offer (which will still be high). When the bid-ask spread widens that way, it will be for good reason and it does not do to be an armchair philosopher and argue that it "should not" occur. Lots of things will occur that should not occur.

For example, gold should not go into backwardation. This is another big (if not widely appreciated) piece of evidence that confidence in the ability of debtors to pay is waning. Gold and silver went into backwardation in 2008 and have been flitting in and out of backwardation since then. Backwardation develops when traders refuse to take a "risk free" profit. That is, the trade is free from all risks except the risk of default and losing one's metal in exchange for a defaulted futures contract. See my paper (http://keithweiner.posterous.com/61392399) for a full treatment of this topic.

The root cause of our monetary disease has its origins in the creation of the Fed and other central banks prior to World War I, and in the insane treaty signed in 1944 at Bretton Woods in which many nations agreed for their central banks to use the US dollar as if it were gold, and this paved the way for President Nixon to pound in the final nail in the coffin. He repudiated the gold obligations of the US government in 1971, thereby plunging the whole world into the regime of irredeemable paper.

The US dollar game is a check-kiting scheme. The Fed issues the dollar, which is its liability. The Fed buys the US Treasury bond, which is the asset to balance the liability. The only problem is that the bonds are payable only in the central bank's paper scrip! Meanwhile, per Bretton Woods, the rest of the world's central banks use the dollar as if it were gold. It is their reserve asset, and they pyramid credit in their local currencies on top of it.

It is not a bug, but a feature, that debt in this system must grow exponentially. There is no ultimate extinguisher of debt. In my paper on Inflation (http://keithweiner.posterous.com/inflation-an-expansion-of-counterfeit-credit), I define inflation as an expansion of counterfeit credit. I define deflation as a forcible contraction of counterfeit credit, and the inevitable consequence of inflation. Well, we have had many decades of rampant expansion of counterfeit credit. Now we will have deflation, and the harder the central banks try to fight it by forcing yet more expansion of counterfeit credit, the worse the problem becomes. With leverage everywhere in the system, it would not take many defaults to wipe out every financial institution. And there will be many defaults. One default will beget another and once it really begins in earnest there will be no stopping the cascade.

Another key problem is duration mismatch. Today, every bank and financial institution borrows short to lend long, many corporations borrow short to finance long-term projects, and every government is borrowing short to fund perpetual debts. Duration mismatch can cause runs on the banks and market crashes, because when depositors demand their money, banks must desperately sell any asset they can into a market that is suddenly "no bid". In two papers (http://keithweiner.posterous.com/fractional-reserve-is-not-the-problem and http://keithweiner.posterous.com/falling-interest-rates-and-duration-mismatch), I cover duration mismatch in banks and corporations in more depth.

Most banks and economists have supported a policy of falling interest rates since they began to fall in 1981. But falling interest rates destroy capital, as I explain in that last

paper, linked above. As the rate of interest falls, the real burden of the debt, incurred at higher rates, increases.

Related to this phenomenon is the fact that the average duration of bonds at every level has been falling for a long time (US Treasury duration began increasing post 2008, but I think this is an artifact of the Fed's purchases in their so-called "Quantitative Easing"). Declining duration is an inevitable consequence of the need to constantly "roll" debts. Debts are never repaid, the debtor merely pays the interest and rolls the principal when due. As the duration gets shorter and shorter, the noose gets tighter and tighter. If there is to be a real payback of debt, even in nominal terms, we need to buy more time. At the US Treasury level, average duration is about 5 years. I doubt that's long enough.

And of course the motivation for building this broken system in the first place is the desire by nearly everyone to have a welfare state, without the corresponding crippling taxation. It has been long believed by most people a central bank is just the right kind of magic to let one have this cake and eat it too, without consequences. Well, the consequences are now becoming visible. See my papers (http://keithweiner.posterous.com/the-laffer-curve-and-austrian-economics and http://keithweiner.posterous.com/a-politically-incorrect-look-at-marginal-tax) discussing what raising taxes will do, especially in the bust phase like we have now.

In reality, stripped of the fancy nomenclature and the abstraction of a monetary system, the picture is as simple as it is bleak. Normally, people produce more than they consume. They save. A frontier farmer in the 19th century, for example, would dedicate some work to clearing a new field, or building a smokehouse, or putting a wall around a pasture so he could add to his herd. But for the past several decades, people have been tricked by distorted price signals (including bond prices, i.e. interest rates) into consuming more than they produce.

In any case, it is not possible to save in an irredeemable paper currency. Depositing money in a bank will just result in more buying of government bonds. Capital accumulation has long since turned to capital decumulation.

This would be bad enough, as capital is the leverage on human effort that allows us to have the present standard of living. We don't work any harder than early people did 10,000 years ago, and yet we are vastly more productive due to our accumulated capital.

Now much of the capital is gone, and it cannot be brought back. It will soon be impossible to continue to paper over the losses. The purpose of this piece is not to propose how to save the dollar or the other paper currencies. They are past the point where saving them is possible. This paper is directed to avoiding the collapse of our civilization.

If we stay on the present course, I think the outcome will look more like 472 AD than 1929. We must solve three problems to avoid that kind of collapse:

1. Repayment of all debts in nominal terms
2. Keep bank accounts, pensions, annuities, corporate payrolls, annuities, etc. solvent, in nominal terms
3. Begin circulation of a proper currency before the collapse of the paper currencies, so that people have something they can use when paper no longer works

I propose a few simple steps first, and then a simple solution. All of this is designed to get gold to circulate once again as money. Today, we have gold "souvenir coins". They are readily available, and have been for many years, but they do not circulate.

A gold standard is like a living organism. While having the right elements present and arranged in the right way is necessary, it is not sufficient. It must also be in constant motion. Gold, under the gold standard, was always flowing. Once the motion is stopped, restarting it is not easy. This applies to a corpse of a man as well as of a gold standard.

The first steps are:

1. Eliminate all capital "gains" taxes on gold and silver
2. Repeal all legal tender laws that force creditors to accept paper
3. Also repeal laws that nullify gold clauses in contracts
4. Open the mint to the (seigniorage) free coinage of gold and silver; let people bring in their metal and receive back an equal amount in coin form. These coins should not be denominated in paper currency units, but merely ounces or grams

Each of these items removes one obstacle for gold to circulate as money, along side the paper currencies. The capital "gains" tax will do its worst damage precisely when people need gold the most. At that point, the nominal price of gold in the paper currencies will be rising very rapidly. Any sale of bullion will result in a tax of virtually the entire amount, as the cost basis from even a few weeks prior will be much lower than the current price. This amounts, in the US, to a 28% confiscation of gold. This tax will force people to keep gold underground and not bring it to market. It will contribute to the acceleration of permanent backwardation.

It is important to realize that gold is not "going up". Paper is going down. There is no gain for the holder of gold; he has simply not lost wealth due to the debasement of paper.

Current law forces creditors to accept paper as payment in full for all debts, and there are also laws that nullify gold clauses in contracts. Repeal them, and let creditors and borrowers negotiate something mutually agreeable.

Finally, the bid-ask spread on gold bullion coins such as the US gold eagle or the South African krugerrand is too wide. If the mint provided seigniorage-free coinage service, then people would bring in gold bars and other forms of bullion until the bid-ask spread narrowed appropriately. One of the attributes that gives gold its "moneyness" is its tight spread (even today, it is 10 to 30 cents per $1600 ounce!) But currently, this tight spread only applies to large bullion bars traded by the bullion banks and other sophisticated traders. This spread must be available to the average person.

As I said earlier, these steps are necessary. Gold certainly will not circulate under the current leftover regime from Roosevelt and Nixon. But it is not sufficient to address the debt problem.

Accordingly, I propose a simple additional step. The government should sell gold bonds. By this, I do not mean gold "backed" paper bonds. I mean bonds denominated in ounces of gold, which pay their coupon in ounces of gold and pay the principal amount in ounces of gold. Below, I explain how this will solve the three problems I described above.

Mechanically, it is straightforward. The government should set a rule that, to buy a gold bond, one does not bid dollars. One bids paper bonds! So to buy a 100-ounce gold bond, then one could bid for example $160,000 worth of paper bonds (assuming the price of gold is $1600 per ounce). The government retires the paper bond and in exchange replaces it with a newly-issued gold bond.

The government should start with a small tender, to ensure a high bid to cover ratio. And a series of small auctions will give the market time to accept the idea. It will also allow the development of gold bond market makers.

With gold bonds, it would be possible to sell long durations. With paper, there is no good reason to buy a 30-year bond (except to speculate on the next move by the central bank). The dollar is expected to fall considerably over a 30-year period. But with gold, there is no such debasement. The government could therefore exchange short-duration debt for long-duration debt.

At first, the price of the gold bonds would likely be set as a straight conversion of the gold price, perhaps adjusted for differing durations. For example, a 100 ounce gold bond of 30 years duration might be bid at $160,000 worth of 30-year paper bond.

But I think that the bid on gold bonds will rise far above "par", for several reasons I will discuss below.

The nature of the dynamic will become clear to more and more people in due course. In the present regime, there is a common misconception that the yield on a bond is set by the market's expectation of how much consumer prices will rise (the crude proxy for the loss of value for the dollar). But this is not true. Unlike in a gold standard, in an irredeemable paper standard, people are disenfranchised. They have no say over the rate of interest. The dollar system is a closed loop, and if you sell a bond then you either hold cash in a bank, which means the bank will buy a bond. Or you buy another asset. In which case the seller of that asset holds cash in a bank or buys a bond. This is one of the reasons why the rate of interest has been falling for 30 years despite huge debasement. All dollars eventually go into the Treasury bond.

The price of the paper bond today is set by a combination of central bank buying, and structural distortions in the system. But it is a self-referential price, in a game between the Treasury and the Fed. The price of the bond does not really come from the market. And this impacts every other bond in the universe, which all trade at varying spreads to the Treasury.

An alternative to paper bonds would be very attractive to those who want to save and earn income for the long term, pension funds, annuities, etc. Not only will the price of gold continue to rise (i.e. the value of the paper currency will continue to fall towards zero), but also a premium for gold bonds would develop and grow. The quality asset will be recognized to be worth more, and at the least people would price in whatever rate of the price of gold they expect to occur over the duration of the bond.

This dynamic—a rising price of gold, and a rising exchange value of gold bonds for paper bonds—will allow **governments and other debtors** to **use the devaluation** of paper as a **means to repay their debts** in nominal terms, but affordably in real terms.

This is impossible under paper bonds! This is because the process of debasement is a process of the Treasury borrowing more money. Debt goes up to debase the dollar. This path leads not to repayment of the debt cheaply, but to exponentially growing debt until a total default.

So we have solved problem number one. With a rising gold price, and a rising exchange rate of gold bonds for paper bonds, we have set up a dynamic whereby every paper obligation can be met in nominal terms. Of course, the value of that paper will be vastly lower than it is today. This is the only way that the immense amounts of debt outstanding can possibly be honored.

This also solves problem number two. If every financial institution is repaid every nominal dollar it is owed, then they will remain solvent. To be sure, pension payments, bank accounts, corporate payroll, and annuities etc. will be of much lower real value. But there is a critical difference between smoothly losing value vs. abruptly losing everything, along with catastrophic failure of the financial system.

I want to address what could be a misconception at this point. Does this work only for governments that have gold reserves in the vaults? No, this is not about gold reserves. While that may help accelerate a gold bond program, the essential is not gold stocks but gold flows. The government issuer of gold bonds must have a gold income (or a credible plan to develop one quickly).

And this leads to problem number three. Gold does not circulate today. Who has a gold income? That is where we must look to begin the loop. There is one kind of participant today who has a gold income: the gold miner. Beset by environmentalist lawsuits, regulations, permits, impact studies, fees, labor law, confiscatory taxes, and other obstacles created by government, these companies still manage to extract gold out of the ground.

The gold miners are the group to which we must turn to help solve the catch-22 of getting gold to circulate from the current state where it does not. I think there is a simple win-win proposition to offer them. In exchange for exemptions from the various taxes, regulations, environmentalism, etc. they have a choice to pay a tax in gold bullion.

There are other kinds of entities to consider taxing, but the problem is that they all would need to buy gold in the open market in order to pay the tax. As the price begins to rise exponentially, this will be certain bankruptcy for anyone but a gold miner.

And now, look at the progress we've made on the problem of getting gold to circulate. We have gold miners paying tax in gold to governments who are making bond coupon payments in gold to investors who now have a gold income. We can see how gold bond market makers will enter the scene, and earn a gold income to provide liquidity for bonds that are not "on the run". These bond market makers could pay a tax in gold also.

And we have released other creditors from any restriction in lending and demanding repayment in gold. And anyone else in a position to sign a long-term agreement involving a stream of payments over a long period of time, such as landlords, can incorporate gold clauses in their contracts. And if the tenant has a gold income, perhaps from owning a gold bond, he can manage his cash flows and confidently sign such a lease.

Note that the lender, unlike the employee, the restaurant, or most other economic actors, is in a position to demand gold. While everyone else would like to be paid in gold, they haven't got the pricing power to demand it. The lender can say: "if you want my capital, you must repay it in gold!"

If enough gold bonds are issued soon enough, we may reverse the one-way flow of gold from the markets into private hiding, that is inexorably leading to inevitable permanent backwardation and the withdrawal of all gold from the system.

One of the key points in my backwardation paper is that the value of the dollar collapses to zero **not** as a consequence of the **quantity** of dollars rising to infinity, but because of the desire of some dollar holders to get gold. If they cannot trade paper for gold, then they will trade paper for commodities **without regard to price** and trade those commodities for gold. This will cause the price of the commodities in dollar terms to rise to levels that make the dollar useless in trade (and collapse the price of commodities in gold terms).

If we reverse the flow of gold out of the markets, we may be able to prevent this disaster from occurring. The dollar will then continue to lose value in a continuous (if accelerating) manner, as people migrate to gold.

This is the best outcome that could possibly be hoped for. If it occurs along with a reduction in spending so that spending does not exceed (tax) revenues, we will avert Armageddon and be on the path to a proper and real recovery. To be clear, times will be hard and the average standard of living will decline precipitously.

But this is infinitely preferable to total collapse.

It is now up to farsighted leaders, especially in government, to take the first concrete steps towards saving Western Civilization.

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