Recent Arguments Against the Gold Standard

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The Republican presidential primary contests of 2011-2012 brought renewed attention to the idea of reinstituting a gold standard. At least four candidates spoke favorably about the gold standard. One suggested a "commission on gold to look at the whole concept of how do we get back to hard money." The 2012 Republican Party Platform, adopted in Tampa, called for just such a commission, explicitly viewing it as a sequel to the U.S. Gold Commission of 1981: "Now, three decades later, … we propose a similar commission to investigate possible ways to set a fixed value for the dollar."[2]

The favorable attention to the idea of reinstituting a gold standard has naturally attracted renewed criticism of the idea from a variety of sources. A writer for *The Atlantic*, Matthew O'Brien (2012), has expounded on "Why the Gold Standard Is the World's Worst Economic Idea." *Washington Post* writer Ezra Klein (2012) has declared that "The problems with the gold standard are legion." On the more scholarly side, Federal Reserve Chairman and former Princeton professor Ben Bernanke, guest-lecturing at George Washington University on the history of monetary policy in the United States, in the words of the *New York Times'* account, "framed much of this history as a critique of the gold standard, which was dropped in the early 1930s in a decision that mainstream economists regard as obviously correct, hugely beneficial and essentially irreversible." The well known UC-Berkeley economist Barry Eichengreen (2011) has offered "A Critique of Pure Gold."

In a "Briefing Paper" published by the Cato Institute (White 2008), I addressed a number of then-common theoretical and historical objections to a gold standard, sorting those that have some substance from those that merely betray a faulty grasp of the relevant theory or history. Here I update the effort by considering the arguments against the gold standard that have been made by economists and economic journalists since then. Some of the less substantial arguments that I criticized in 2008 reappear in the recent literature. Other recent arguments are novel to some extent, but not all add weight to the anti-gold-standard case. Several authors identify genuine historical problems that they blame on the gold standard when they should instead blame central banks for having contravened the gold standard.

"Unfortunately gold standards are far from perfect monetary systems," Bernanke told the students at George Washington University. We can all agree that gold standards, being real-world human institutions, are imperfect. There is no doubt that a well-trained academic economist can describe on the whiteboard an *ideal* monetary system that, through the flawlessly timed and flawlessly calibrated policy actions of a central bank, produces greater stability in the purchasing power of money than a gold standard does —or scores higher on whatever the economist takes to be the most decisive criterion— while sparing us a gold standard's resource costs by backing the money with something much easier to come by than gold, namely nothing.

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[2] Benko (2011), Isidore (2012), Republican Platform (2012, p. 4).

But different well-trained economists have proposed different criteria, and even a flawless central bank cannot pursue them all with one policy.

More importantly, fiat standards in practice have been far from perfect monetary systems. We need to examine historical evidence if we want to come to an informed judgment about whether *actual* gold-based systems or *actual* fiat-based systems display the smaller set of flaws. We need to recognize the variety of institutional arrangements that the world has seen under gold standards and likewise under fiat standards. In particular, we need to distinguish an "automatic" gold standard system – like the classical gold standard in countries without central banks – from the interwar gold-exchange system that was managed or mismanaged by the discretion of central bankers. I find that the most automatic and least managed kind of gold-based system – a gold standard with free banking – can be expected to outperform a gold standard with central banking, and to outperform the kind of fiat monetary systems that currently prevail.

What follows are critical analyses of the leading arguments against a gold standard. I spell out each argument as recent critics have made it, and evaluate its logical and historical merits. I begin with the least substantial arguments, and proceed to the weightier.

There isn't enough gold to operate a gold standard today.

Personal finance columnist John Waggoner (2012) recently claimed in *USA Today* that "there's not enough gold in the world to return to a gold standard." He explained:

> In the gold standard, the amount of currency issued is tied to the government's gold holdings. The price of gold would have to soar to accommodate U.S. trade in goods and services. … Total gold owned by the [United States] government — including the Federal Reserve and the U.S. Mint— is 248 million ounces. That's about $405 billion dollars at today's prices, hardly enough to support a $15 trillion economy.

> The government could use a kind of semi-gold standard, limiting the amount of money printed to a percentage of its gold reserves. For example, it could say that at least 40% of all currency outstanding be backed by gold. This would limit the money supply, but be vulnerable to government manipulation — revising the limit downward to 5%, for example.

Waggoner's figures of 248 million ounces and $405 billion are approximately correct, but his inference that the price of gold would have to soar to make that an adequate stock of gold reserves is not. The current *Status Report of U.S. Treasury-Owned Gold* (31 August 2012) puts the US government's total holdings at 261.5 million ounces. (The source of Waggoner's lower figure is unclear.) At a market price of $1,700 per fine Troy oz. (to choose a recently realized round number), those holdings are worth $444.6 billion. Current required bank reserves (August 2012) are less than one fourth as large, $104.4 billion. Looked at another way, $444.6 billion is 19 percent of current M1 ($23278 billion, the sum of currency in circulation and checking account balances), which is a more than healthy reserve ratio by historical standards.[3]

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[3] At $1600 per ounce, the ratio of government gold to current M1 is 18 percent. Numbers from Federal Reserve Economic Data, Federal Reserve Bank of St. Louis, data series Required Reserves, Not Adjusted for Changes in Reserve Requirements (REQRESNS), http://research.stlouisfed.org/fred2/series/REQRESNS?cid=123, and series

Waggoner labors under several misconceptions. First, fractional reserves are the usual case. So long as redeemability on demand is maintained de facto, they do not make a gold standard into a "kind of semi-gold standard." Second, it is not generally true that "the amount of currency issued is tied to the government's gold holdings." It is true only if the government monopolizes the issue of gold-redeemable currency and the holding of gold reserves, which was not the case in sixty-plus cases of competitive private note-issue under historical gold and silver standards (Schuler 1992). Third, the vulnerability of the average reserve ratio to government manipulation is not inevitable. It can readily be avoided by leaving commercial banks to determine their own reserve ratios, as in historical free banking systems.

The gold standard is an example of price-fixing by government.

Barry Eichengreen (2011) writes that countries using gold as money "fix its price in domestic-currency terms (in the U.S. case, in dollars)." He finds this perplexing:

> But the idea that government should legislate the price of a particular commodity, be it gold, milk or gasoline, sits uneasily with conservative Republicanism's commitment to letting market forces work, much less with Tea Party–esque libertarianism. Surely a believer in the free market would argue that if there is an increase in the demand for gold, whatever the reason, then the price should be allowed to rise, giving the gold-mining industry an incentive to produce more, eventually bringing that price back down. Thus, the notion that the U.S. government should peg the price, as in gold standards past, is curious at the least.

To describe a gold standard as "fixing" gold's "price" in terms of a distinct good, domestic currency, is to get off on the wrong foot. A gold standard means that a standard mass of gold (so many grams or ounces of pure or standard-alloy gold) *defines* the domestic currency unit. The currency unit ("dollar") is nothing other than a unit of gold, not a separate good with a potentially fluctuating market price against gold. That one dollar, defined as so many grams of gold, continues be worth the specified amount of gold—or in other words that one unit of gold continues to be worth one unit of gold—does not involve the pegging of any relative price. Domestic currency notes (and checking account balances) are *denominated* in and redeemable for gold, not *priced* in gold. They don't have a *price* in gold any more than checking account balances in our current system, denominated in fiat dollars, have a price in fiat dollars. Presumably Eichengreen does not find it curious or objectionable that his bank maintains a fixed dollar-for-dollar redemption rate, cash for checking balances, at his ATM.

As to what a believer in the free market would argue, surely Eichengreen understands that if there is an increase in the demand for gold under a gold standard, whatever the reason, then the *relative* price of gold (the purchasing power per unit of gold over other goods and

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M1 Money Stock (M1), http://research.stlouisfed.org/fred2/series/M1?cid=25. The ratios reported here update but are very close to those in White 2012a.

services) *will* in fact rise, that this rise will in fact give the gold-mining industry an incentive to produce more, and that the increase in gold output will in fact eventually bring the relative price back down.[4]

The volatility of the price of gold since 1971 shows that gold would be an unstable monetary standard.

Eichengreen (2012, p 128) writes of "gold's inherent price volatility" making it unsuitable to "provide a basis for international commercial and financial transactions on a twenty-first-century scale."

Ezra Klein (2012) declares that "The problems with the gold standard are legion, but the most obvious is that our currency fluctuates with the global price of gold as opposed to the needs of our economy." It is not entirely clear what "our currency fluctuates with the global price of gold" means in this declaration. If it means that for a country that is part of an international gold standard the purchasing power of domestic currency moves with the world purchasing power of gold, it is true, but if fails to identify a problem. The world purchasing power of gold was better-behaved under the classical international gold standard than the purchasing power of fiat money has been since 1971. If it means to invoke the volatility of the real or dollar price of gold since gold was fully demonetized in 1971, it identifies a problem, but it is a problem experienced under a fiat standard and *not* under a gold standard. Today demonetized gold varies rises and falls in price as savers and investors rush into and out of gold as a hedge against fiat money inflation.

The respected economist and blogger James D. Hamilton makes an argument that is less ambiguous, but puzzling nonetheless. Hamilton (2012) charts how much the average dollar wage would have varied if initially fixed in ounces of gold but paid in the dollar equivalent as the price of gold varied between January 2000 and July 2012. He observes that "if the real value of gold had changed as much as it has since then, the dollar wage that an average worker received would need to have fallen from $13.75/hour in 2000 to $3.45/hour in 2012." Of what possible significance is such a calculation? It is relevant only if the behavior of the real value (purchasing power) of gold is independent of the monetary regime. Such a calculation would therefore be relevant to a proposal that a small open economy (say The Bahamas) should by itself adopt the gold standard today. That would indeed be a bad idea.[5] That is why thoughtful advocates of the gold standard specify that it should again be an international standard. Hamilton's calculation is completely irrelevant to that case. A Lucas critique applies: observations drawn from a world of fiat regimes are not informative about the behavior of the purchasing power of money under an international gold standard.

Hamilton anticipates such an objection and has a reply ready: "To which the gold advocates respond with the claim that if the U.S. had been on a gold standard since 2000, then the huge change in the real value of gold that we observed over the last decade never would have happened in the first place. The first strange thing about this claim is its supposition that events and policies within the U.S. are the most important determinants of the real value of gold.

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[4] I make these and other arguments against Eichengreen in White (2012b)

[5] Because it has so much trade with the United States, I would recommend that the Bahamas adopt official dollarization (with private note issue) in place of its current exchange-rate peg to the dollar.

According to the World Gold Council, North America accounts for only 8% of global demand." Again, this is irrelevant to the evaluation of an international gold standard. By the way, Hamilton's 8% figure is North America's share of global *purchases* of new gold *jewelry*, a flow measure, rather than its share of the *stock* transactions demand to hold monetary gold, which under an international gold standard would presumably be closer to North America's 30% share of world output.

The purchasing power of money was clearly more stable under the classical international gold standard (1879-1914) than it has been under fiat money standards since 1971. In a blog entry a few days after the one just quoted, Hamilton recognizes this fact: "It is true that the biggest concern I have about going back on a gold standard today – that it would tie the monetary unit of account to an object whose real value can be quite volatile – was not the core problem associated with the system of the 19th century." He then continues: "But the fact that this wasn't the core problem with the gold standard in the nineteenth century does not mean that it wouldn't be a big problem if we tried to go back to the system in the twenty-first century."

Why think that instability of purchasing power might be a big problem in a present-day international gold standard? Hamilton attributes "recent movements in the real value of gold" to "the surge in income from the emerging economies rather than U.S. monetary policy," citing data showing global gold jewelry sales up strongly in 2010 over 2009, led by large increases in sales to India, Hong Kong, and mainland China. It is reasonable to suppose that demand for gold jewelry rises with income. But real income in India and China is rising fairly steadily. It makes little sense to attribute volatility in the real price of gold demand to steadily rising income

Hamilton's inference of a trend from two data points, however, is not a careful reading of the data source he cites. Even if we focus exclusively on 2010 over 2009, only a small fraction of the extraordinary increase of 69% in gold jewelry sales to India can possibly be attributed to India's real income growth, which was just 10% that year according to the IMF. The income-elasticity of demand for gold jewelry is not plausibly 6.9. The text of the article containing the data (Holmes 2011) provides a clue to the lion's share of that year's increase: "Historically savvy gold buyers, India's influx of buying implies an expectation that gold prices still have much higher to go. The WGC [World Gold Council] says that 'Indian consumers appeared almost universally to expect that the local gold price was likely to continue rising.'" That is, Indians did not buy so much gold jewelry in 2010 just for ornamentation but also as an investment or inflation hedge. Likewise, "many in China's middle class are looking to gold as a means for long-term savings and a possible hedge against inflation."

If we look at additional years of the data, we see that global gold jewelry sales in 2010 were *down* from the levels of 2007 or 2008, which is hardly consistent with the hypothesis that gold demand is rising mainly due to rising emerging-economy income. If we look at the entire 2004-2010 range of sales data for gold in *all* forms, we see as much or more volatility in "investment" sales of gold (bars, coins, medallions, exchange-traded funds) as in jewelry sales. Absent fiat inflation hedging, there is little cause for concern about the volatility of demand for gold or gold's real price.

The well respected economist and blogger Tyler Cowen (2011) also expresses concern about volatility in the real price of gold:

Why put your economy at the mercy of these essentially random forces? I believe the 19th century was a relatively good time to have had a gold standard, but the last twenty years, with their rising commodity prices, would have been an especially bad time. When it comes to the next twenty years, who knows?

In a later blog entry, Cowen (2012) adds, "I think a gold standard today would be much worse than the 19th century gold standard, in part because commodity prices are currently more volatile and may be for some time."

Cowen does not consider that the current volatility of several commodity price series, most importantly that of gold, is endogenous to our fiat money standard. Inflation-hedging demand is volatile because in the world's current unanchored fiat monetary systems inflation expectations are volatile. Inflation-hedging involves other commodities in addition to gold and silver.

The answer to Cowen's first question – why put your economy at the mercy of "essentially random" supply and demand shocks for gold? – is that, to judge by the historical evidence, it creates less volatility than the alternative of putting your economy at the mercy of a central bank's monetary policy committee. Monetary supply and demand shocks under fiat money systems have been worse. Under the classical gold standard changes in the growth rate of the base money stock were relatively small (Rockoff 1982), perhaps surprisingly small to those who haven't looked at the numbers. The *largest* supply shock, the California gold rush, caused a cumulative world price level rise of 26 percent (as measured by the UK RPI) stretched over eighteen years (1849 - 1867), which works out to an inflation rate of only 1.3 percent per annum. As Cowen recognizes, gold discoveries the size of California's are hardly likely today.

Barry Eichengreen (2011) also worries that volatility in the demand for gold would persist even in an international gold standard:

There could be violent fluctuations in the price of gold were it to again become the principal means of payment and store of value, since the demand for it might change dramatically, whether owing to shifts in the state of confidence or general economic conditions. Alternatively, if the price of gold were fixed by law, as under gold standards past, its purchasing power (that is, the general price level) would fluctuate violently.

We can ignore the odd suggestion in Eichengreen's first sentence that we can imagine a separation of monetary functions such that gold serves as the commonly accepted medium of exchange but a unit of something else (what?) serves as the unit of account, giving one ounce of monetary gold a fluctuating price. In every historically known system where gold or gold-redeemable claims were the principal means of payment, a specified amount of gold also defined the pricing unit. Let us focus on the claim that under a gold standard, due to dramatic shifts in the demand for gold, "its purchasing power (that is the general price level) would fluctuate violently." Surely Eichengreen knows the historical evidence on whether violent fluctuations in the purchasing power of gold – meaning, more violent than those in the purchasing power of fiat money since 1971 – characterized the classical gold standard. They did not.

There is a good reason why the demand for monetary gold did *not* change dramatically under the classical gold standard. As Robert Barro (1982, p. 105) noted thirty years ago, the classical gold standard better constrained inflation, thereby better pinned down inflationary expectations, and thereby better stabilized the demand to hold money relative to income (or stated inversely, it better stabilized velocity), than the fiat money system that followed it. He explained:

> Since the move in 1971 toward flexible exchange rates and the complete divorce of United States monetary management from the objective of a pegged gold price, it is clear that the nominal anchor for the monetary system—weak as it was earlier [under Bretton Woods]—is now entirely absent. Future monetary growth and long-run inflation appear now to depend entirely on the year-to-year "discretion" of the monetary authority, that is, the Federal Reserve. Not surprisingly, inflationary expectations and their reflection in nominal interest rates and hence in short-run inflation rates have all become more volatile.

Volatility of inflation and volatility of inflation expectations did diminish during the "Great Moderation" after the 1980s, but since 2006 they have returned. In the 14 years between August 1991 and August 2005 the annual US CPI inflation rate (year-over-year, observed monthly) stayed between 1 percent and 4 percent, a band of just three percentage points. Between July 2008 to July 2009 the year-over-year inflation rate went from a high of 5.5 percent to a low of *minus* 2.0 percent, a swing of 7.5 percentage points in a single year. It has since risen as high as 3.9 percent.

A gold standard would be a source of harmful secular deflation.
"The most fundamental argument against a gold standard," writes Tyler Cowen (2011)

"is that when the relative price of gold is go[ing] up, that creates deflationary pressures on the general price level, thereby harming output and employment." Barry Eichengreen (2011) offers a similar criticism:

> As the economy grows, the price level will have to fall. The same amount of gold-backed currency has to support a growing volume of transactions, something it can do only if the prices are lower, unless the supply of new gold by the mining industry magically rises at the same rate as the output of other goods and services. If not, prices go down, and real interest rates become higher. Investment becomes more expensive, rendering job creation more difficult all over again.

Eichengreen concludes: "The robust investment and job creation prized by the gold standard's champions and the deflation they foresee are not easily reconciled, in other words." In a nutshell, vigorous economic growth is supposed to be at war with itself under a gold standard because the money stock won't grow fast enough to keep up.

Eichengreen's argument here is a theoretically incorrect and – surprisingly from a leading economic historian – inconsistent with the historical record of the gold standard.

First, as Eichengreen surely understands, the condition for the price level not falling isn't an unlikely or "magical" exact equality (=) between the rate of growth in the stock of monetary gold and the rate of growth in the transactions demand to hold monetary gold (proxied by growth

in the output of other goods and services), but rather that the rate of growth in the stock of monetary gold is *as at least as great* (≥) as that of the rate of growth of output. How rare was that? Not very. During the period of the classical gold standard, given that the long-run average inflation rate was close to zero, this condition was met about half of the time. The numbers in O'Donoghue, Goulding, and Allen (2004), show just a few *more* years of a rising than of a falling price index during the 93 years from the UK's resumption of the gold standard in 1821 to its departure in 1914. Over the period as a whole, the compound inflation rate was +0.1% (one-tenth of one percent) per annum.

It is true that if the output of goods and services grows too fast for the stock of monetary gold to keep up, the price level falls. In such an environment, when productivity growth allows particular goods to be produced at lower cost, those goods become cheaper both in real and in nominal terms (see Selgin 1997). But deflation that results from *rapid growth in real output* can hardly be a cause for regret.

Eichengreen's case for fearing deflation under a gold standard overlooks the important historical finding of Atkeson and Kehoe (2004, p. 100). Examining inflation rates and real output growth rates for 17 countries over more than 100 years, they found that there is no link between deflation (falling prices) and depression (falling real output) outside of one extraordinary episode, the Great Depression period of 1929-34. Their evidence suggests to them that the Great Depression should be considered "a special experience with little to offer policymakers considering a deflationary policy today." Outside of the Great Depression, in their data base "65 of 73 deflation episodes had no depression" (most of these deflations without depression "occurred under a gold standard"), while 21 of 29 depressions occurred without deflation. We consider the Great Depression in more detail below, but the Atkeson-Kehoe evidence makes it clear that the combination of rapid deflation and rapid output shrinkage of 1929-34, which occurred under the interwar system managed or mismanaged by central banks, was unlike experience under the much milder deflations of the classical gold standard.

We need to recognize the basic distinction – which applies under any monetary standard – between a *good* deflation and a *bad* deflation. Selgin (1997), Atkeson and Kehoe (2004), and Bordo, Landon-Lane, and Redish (2009) have made this distinction conspicuously clear, but Eichengreen here neglects it (as does Ben Bernanke routinely). In brief, a *good* deflation is a situation where the price level falls because output grows more rapidly than the money stock. It is a situation of ongoing approximate monetary equilibrium, involving no significant excess demand for money, therefore no significant excess supply of goods, at any date's price level. Prices fall one by one as the selling prices of particular goods follow their costs of production downward. Real living standards rise as goods become cheaper. A deflation driven by real growth does not make real growth more difficult to sustain.

A *bad* deflation, in a world with some degree of downward price and wage stickiness, is a situation where prices fall as a lagged response to an unexpected shrinkage in the money stock or a spike in money demand. (The degree of price and wage stickiness is less when the expected inflation rate is lower, but stickiness was not zero even under the classical gold standard when the long-run expected inflation rate was near zero.) Such shocks create a monetary disequilibrium, an unsatisfied demand to hold money at the existing price level. Consumers and businesses cut their spending for the sake of adding to money balances, creating unsold

inventories of goods, leading to recessionary cutbacks in production and employment until prices and wages decline sufficiently to clear the markets for goods, labor, and money balances.

A good deflation involves no such unplanned inventory accumulation, so it does not depress output. In terms of the equation of exchange, MV=Py, a good deflation has P falling contemporaneously with y rising. A bad deflation has P falling with a lag (and y falling in the interim) behind a shrinking M or rising V. Bad deflation was a major problem in the early 1930s, as a series of banking panics led to the hoarding of currency by the public and the stockpiling of reserves by banks (events that can be described either as a fall in the velocity of base money or a fall in the quantity of broader money). It was briefly a problem during the pre-Fed banking panics in the United States. But banking panics are not caused by being a gold standard, as I discuss below (Q #6).

The non-conflict between deflation and robust growth is evident during most extended deflationary period under the classical gold standard in the United States, the 15 years from 1882 to 1897. The GDP deflator (as constructed by Romer 1989) fell to 6.383 from 8.267, a compound inflation rate of approximately -1.7% per annum. Over the same period real GDP grew at the healthy rate of just above 3.0% per annum. Robust investment and real income growth were easily reconciled with deflation. The similar experience in Britain during this period has sometimes been called a "great depression," but use of that label confuses deflation, which did happen, with falling output, which did not (Saul 1985). The same confusion is evident when political commentator Bruce Bartlett (2012) writes that "while a gold standard provided stable purchasing power over long periods of time, that was only because inflations were subsequently offset with debilitating deflations." If fact, as the 1882-97 period shows, and as Atkeson and Kehoe show more generally, deflations under the classical gold standard were *not* debilitating. That is, they were not normally accompanied by falling output. Bartlett is mistaken in thinking that "[a]s a consequence [of deflation], there were greater economic instabilities, higher unemployment and longer recessions during the gold-standard era." Despite a weak banking system, the record of the gold-standard era before 1914 in the United States does not in fact show greater economic instabilities or longer recessions than the post-WWII era (Selgin, Lastrapes, and White 2012).

Atkeson and Kehoe (p. 102) also address specifically the case of slow-growing Japan in recent decades, which has often been cited as evidence of the depressing effect of falling or negative inflation. They show that Japan's growth rate has been falling since 1960, while its inflation rate has been falling since 1970, suggesting that the former is a secular trend independent of the latter. They comment (p. 99): "Attributing this 40-year slowdown to monetary forces is a stretch."

Returning to the quotation from Eichengreen, consider his claim that when prices go down "real interest rates become higher" such that "[i]nvestment becomes more expensive, rendering job creation more difficult." The statement because it fails to keep straight the distinction two kinds of real interest rates: ex ante (anticipated) and ex post (retrospective). The identity that defines a real interest rate is: real interest rate = nominal interest rate minus inflation rate. The inflation rate in question either can be anticipated or measure retrospectively, and correspondingly the associated real interest rate derived by subtraction can either be anticipated or retrospective. The standard theory of the Fisher Effect tells us that when a shift to -1% from 0% annual inflation (say) is *anticipated*, the nominal interest rate falls by approximately 1% to

keep the anticipated real interest rate constant. Therefore *an anticipated deflation has no effect on the cost of investment*. A decline in the price level *greater than anticipated* over the period of a loan does raise the *ex post* real interest rate paid on the loan. But such an unanticipated decline, occurring *after* an investment loan was taken out, does not raise the interest rate at the time of the loan contract, and thus cannot make investment more expensive.

To be fair, Eichengreen may have had in mind (and simply neglected to specify) the one atypical set of conditions where his argument would apply: if the nominal interest rate is already near or at the *zero lower bound*, then the nominal rate cannot fall enough in response to a large downward shift in the anticipated inflation rate to keep the ex ante real interest constant. The ex ante real interest rate then does rise. This was a problem during the extreme deflation of 1930-32 under the Federal Reserve's watch. Three-month Treasury rates fell close to zero at the end of 1932. Below I argue that this deflation was not due to the gold standard, but due to its contravention. The zero low bound may be a problem today, under the Federal Reserve's deliberate policy of ultralow short-term interest rates. But during the period of the classical gold standard there were no cases of an anticipated deflation so great as to bring the nominal interest rate close to zero or create a lower-bound problem.

A gold standard too rigidly ties the government's hands.
One of the slides for Ben Bernanke's (2012) lecture at GWU reads as follows:

The strength of a gold standard is its greatest weakness too: Because the money supply is determined by the supply of gold, it cannot be adjusted in response to changing economic conditions.

Note the passive wording: cannot *be adjusted*. Adjusted by whom or by what? On a previous slide Bernanke indicated that he was assuming an automatic gold standard, without a central bank able to do any significant adjusting of the money supply. But under a gold standard a change in the money supply can also be brought about by market forces. Under a gold standard, market forces in gold mining, minting, and banking *do* adjust the money supply in response to changing economic conditions, that is, in response to changes in the demand to hold monetary gold or to hold bank-issued money. The supply of bank-issued money is not determined by the supply of gold alone. If such a market-driven change counts as the supply "being adjusted" – and why shouldn't it? – then Bernanke's statement is simply false. The money supply does adjust in response to changing economic conditions.[6]

But perhaps the Bernanke slide's phrase "cannot be adjusted" only intends to say that under a fully decentralized and automatic gold standard there is no central monetary policy committee or other small group of people who can *deliberately* adjust the aggregate money supply. Under that reading the statement is true. But then the statement does not deny that market forces will adjust the money supply appropriately.

Bernanke neglects to provide a comparative analysis here. One might with equal or greater justice invert his statement and say: "The strength of a fiat standard is its greatest weakness too: Because the money supply is not automatically determined by market forces but

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[6] On the interaction of gold supply and demand under a gold standard see White (1999, ch. 2). On the interaction of supply and demand for bank-issued money see Selgin (1988) and White, (1999, ch. 3).

by the discretion of a committee, it can change in ways that are inappropriate to changing economic conditions." Then the comparative question becomes: Under which system – automatic adjustment by market forces under a gold standard or deliberate adjustment by central bankers on a fiat standard – is the money supply better adjusted to economic conditions? Those who understand why central economic planning generally fails should presume that market guidance works better, absent a persuasive rebuttal showing that money is an exception. The historical record (Selgin, Lastrapes, and White 2012) does not show the Federal Reserve successfully adjusting the money supply to conditions. The Fed has not reduced cyclical volatility in the economy.

From other evidence, Bernanke apparently thinks that market determination of the money supply is a weakness because it eliminates the option to use monetary policy to reduce the unemployment rate (or in economists' jargon, rules out exploiting the short-run Phillips Curve). According to the *New York Times* account of his GWU lecture, Bernanke told the class that being on the gold standard "means swearing that no matter how bad unemployment gets you are not going to do anything about it." True, an automatic gold standard does eliminate the option to respond to the unemployment rate. But that is a feature, not a bug. Any economist who takes to heart the case that Kydland and Prescott (1977) make for the benefit of rules over discretion in monetary policy will recognize that such a restraint is a strength rather than a weakness.

When job-seekers recognize the central bank's intention to use monetary expansion to reduce unemployment, they will raise their inflation-rate expectations and thus their reservation wage demands. Monetary expansion will then only ratify their expectations, not surprise them, and thereby will achieve only higher inflation and no reduction in the unemployment rate. Just as Ulysses strengthens his ability to sail home, past the island of the Sirens, by tying himself to the mast and plugging his helmsman's ears with wax, so too a monetary system strengthens its ability to achieve the good outcome it can achieve by foreswearing other goals. Kydland and Prescott identify the goal as low inflation; I would say the goal is to facilitate trade – including intertemporal trade – most efficiently.

A gold standard amplifies business cycles (or fails to dampen them as a well-managed fiat money system does).
In response to my 2008 piece the economist Tyler Cowen (2008), on his well-known blog *Marginal Revolution*, wrote:

> My main worry with the gold standard is simply the pro-cyclicality of the money supply … . For instance would you really want a contracting money supply in today's environment? And yes credit crunches of this kind happen in market settings too so you can't blame it all on Alan Greenspan."[7]

Cowen's worry here does not appear to be about the pro-cyclicality of the *gold* supply. Gold mining is actually counter-cyclical with respect to the price level: a falling price level denominated in gold units raises the purchasing power of gold and so increases global mining output. For any single region, the price-specie-flow mechanism is likewise counter-cyclical with

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[7] Tyler Cowen,"Should we consider a gold standard?," *Marginal Revolution* blog, 9 Feb 2008, http://marginalrevolution.com/marginalrevolution/2008/02/should-we-consi.html. Disclosure: In 2009 I became Cowen's colleague at George Mason University.

respect to the price level: a falling local price level attracts gold from the rest of the world. He instead appears to worry about the supposed pro-cyclicality of bank-issued money (deposits and banknotes) due to bank runs and credit crunches. He worries that the banking system is prone to contract its liabilities in a downturn, and thereby to amplify the economy's contraction.

The inside money supply does fall in a banking panic if there are runs for base money (whether that base money is metallic or fiat). But it is not true that a gold standard or free banking makes the banking system prone to bank runs and credit crunches.

The US banking panics, both under the pre-Fed system and in the 1930s, came from legal restrictions that weakened the banking system, not from the US being on the gold standard. Comparing and contrasting the US to Canada illustrates this strikingly. Canada was equally on the gold standard, and had a similar agricultural economy, but experienced no panics. Its banking system was far less restricted and far stronger. The most important legal restrictions on US banks were the prohibition of interstate branching, which would have allowed better diversification of assets and liabilities (Canada allowed nationwide branching) and the rules requiring note-issuing banks to hold federal bonds as collateral, which prevented banks from issuing more notes during seasons of peak currency demand, which in turn led to reserve drains every autumn (no such rules operated in Canada). Because panics are not inherent to a gold standard, but rather to a banking system weakened by legal restrictions, the pre-1933 panics do not indict the gold standard, but legal restrictions that weaken banks. While Bernanke was correct to say that in his lecture that "The gold standard did not prevent frequent financial panics," neither did it cause them.[8]

Martin Wolf (2010) expresses a worry similar to Cowen's that a gold standard with fractional-reserve banking is inherently pro-cyclical: "In good times, credit, deposit money and the ratio of deposit money to the monetary base expands. In bad times, this pyramid collapses. The result is financial crises, as happened repeatedly in the 19th century." In fact free banks did not exhibit exuberant swings in their reserve ratios (Selgin 1992). Less-regulated banking systems were more robust than Wolf suspects, as seen not only in Canada but also in Scotland, Sweden, Switzerland, and other systems without central banks under the gold standard. Repeated financial crises were a feature of the 19th century banking systems in the United States and England, weakened as they were by legal restrictions, but not of the less restricted systems elsewhere.[9]

The gold standard was responsible for the deflation that ushered in the Great Depression in the United States.
The most prominent set of criticisms of the gold standard among academic economists in recent years blame the gold standard for the creating the Great Depression in the United States and for then spreading it internationally. Douglas Irwin (2011, p. 1) summarizes the case and identifies its most cited source:

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[8] For informative accounts of the US banking panics see Noyes (1910), Smith (1936), Calomiris and Gorton (1991), and de Boyer des Roches and Betancourt (2010).

[9] For free banking case studies see Dowd (1992).

Modern scholarship regards the Depression as an international phenomenon, rather than as something that affected different countries in isolation. The thread that bound countries together in the economic collapse was the gold standard. Barry Eichengreen's 1992 book *Golden Fetters* is most commonly associated with the view that the gold standard was the key factor in the origins and transmission of the Great Depression around the world.[10]

The most often cited piece of evidence cited for this view (p 3) is "[t]he fact that countries not on the gold standard managed to avoid the Great Depression, while countries on the gold standard did not begin to recover until they left it."

In this section I address the "factor in the origins" charge. Below I address "transmission" charge.

James D. Hamilton (2012) argues that "between 1929 and 1933, the U.S. and much of the rest of the world *were* on a gold standard. That did not prevent (indeed, I have argued it was an important cause of) a big increase in the real value of gold over that period. Because the price of gold was fixed at a dollar price of $20/ounce, the increase in the real value of gold required a huge drop in U.S. nominal wages over those years." Because wages were sticky downward, the requirement for a huge drop in nominal wages created massive disemployment.

To set the stage for the deflation of 1930-32, we need to review the deflation of the interwar period as a whole. And to understand the interwar deflation as a whole, we need to review the monetary events of the First World War. During the war the major combatant nations went off of the gold standard in order to print money for war finance. At war's end they were left with price levels in local currency much higher than before, and much higher than postwar price levels measured in gold units. As Robert Mundell (1999) noted in his Nobel lecture, large volumes of European gold flowed to the United States, which alone continuously remained on gold (though the federal government embargoed gold exports in 1917-19). The gold inflow substantially raised the dollar price level during the war. Despite a major correction in 1920-21, "the dollar (and gold) price level" remained 40 percent above "the prewar equilibrium, a level at which the Federal Reserve kept it until 1929." For the US, this meant that the price level would eventually have to fall.

Meanwhile in Europe, wartime money-printing had pushed the price levels in the United Kingdom, France, and other countries much more than 40 percent above their prewar levels. For the UK and France, to return to the gold standard (reinstitute convertibility at a defined parity between the domestic monetary unit and gold), even without further US deflation, would require some combination of devaluation and deflation. Mundell points out that some notable and staunch defenders of the gold standard, like Charles Rist and Ludwig von Mises, saw devaluation as the more prudent option than a painfully large deflation. Mises is reported to have criticized the recommendation that a deflation should be undertaken to reverse the effects of a wartime inflation by remarking that once you have run a man over with a truck, it is no favor to him to put the truck in reverse and drive back over him going the other way.

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[10] Important earlier contributions to this view: Hamilton 1987, Temin 1989, Bernanke and James 1991.

France chose to adjust the franc's gold content downward (to devalue) fully in proportion to its lost purchasing power, which enabled them to keep the postwar franc price level. The UK and most other countries chose to restore the prewar gold content to the monetary unit, which forced a major downward adjustment in the price level to reverse most of the wartime inflation. As Mundell (1999, p. 229 put it, "The deflation of the 1930s was the mirror image of the wartime rise in the price level that had not been reversed in the 1920-21 recession." Mazumder and Wood (2012) have detailed the economic logic of this reversal in an important recent paper, and shown how the rise and fall of prices parallels the pattern seen in resumptions of the gold standard at the old parity following previous wartime inflations.

The global deflation of the interwar period, in other words, was not due to the world's *being on* the gold standard. It was due to many countries *leaving* the gold standard, inflating massively while *off* the gold standard, and then resuming the gold standard *at the old parity* (not devaluing to accommodate a higher price level).

Attempts by reduce the demand for monetary gold through international coordination among central banks came to naught. The Federal Reserve System and especially the Bank of France (Irwin 2012) absorbed large amounts of gold by sterilizing inflows to block the rise in prices that otherwise makes an inflow self-limiting. They were not acting in accordance with the gold standard but rather, as Ben Bernanke (2010, p. 15) puts it, "in defiance of the so-called rules of the game of the international gold standard, neither country allowed the higher gold reserves to feed through to their domestic money supplies and price levels."

The US recession that became the Great Depression, according to the NBER business cycle chronology, began after the previous business expansion ended in August 1929. Prices began to fall only a few months later. Monthly data show the CPI rising up to November 1929, with December the first month of decline. The arrival of deflation cannot then have been the *initiating* cause for the expansion turning into recession. Better explanations for the boom not continuing are beyond our subject matter here, but some contemporary observers like F. A. Hayek (1932) argued that the Fed had fostered an unsustainable boom (and price level path) by deliberately expanding credit to keep wholesale prices from falling. In Hayek's view a milder downturn would have occurred sooner had the Fed not increased its expansionary efforts from June 1927 to December 1928. The Fed finally tightened credit in early 1929 to moderate the stock market boom.

In the view famously spelled out by Milton Friedman and Anna J. Schwartz in their *A Monetary History of the United States* (1963), what "might have been a garden-variety recession, though perhaps a fairly severe one," (Friedman and Friedman 1998, p. 233) became the Great Depression when bank runs were allowed to shrink the broader money supply dramatically. The Fed stood idly by, not doing what it might have done to counter the trend, while "the stock of money fell by over a third" between August 1929 and March 1933 (Friedman and Schwartz 1963, p. 299). The resulting inflation rates in 1930, 1931, and 1932 were deeply negative: -6.4%, -9.3%, and -10.3% respectively.

In *Golden Fetters*, Eichengreen (1992, p. 393) charges that "the gold standard was responsible for the failure of monetary and fiscal authorities to take offsetting action once the Depression was underway." More specifically, he claims (p. xi) that the gold standard "was the binding constraint preventing policymakers from averting the failures of banks and containing

the spread of financial panic." Friedman and Schwartz, however, had already provided some evidence to the contrary. They showed (pp. 360-61) that the Fed during this period was not obeying the dictates of the gold standard, but was in fact violating them by sterilizing gold inflows. The US gold stock rose in 1931 and again in 1932, but the Fed prevented bank reserves and the money supply and from expanding, and thereby prevented a moderation of the downward pressure on prices and output. If not the gold standard, what stopped the Fed? Most plausibly, to judge by the Fed's own pronouncements at the time, its adherence to a credit policy doctrine known as the Real Bills Doctrine (Timberlake 2005).

Eichengreen (p. 393) acknowledges that the Fed had "extensive gold reserves," but nonetheless maintains that it "had very limited room to maneuver." A more recent study co-authored by Anna J. Schwartz, along with Michael D. Bordo and Ehsan U. Choudhri (2002), provides additional evidence that in fact the Fed had more than enough spare gold reserves (in excess of its legally mandated gold cover requirements) to offset the contraction of the broad money supply and thereby offset the downward pressure on real output. They summarize their findings as follows (p. 1):

> [T]he United States, … holding massive gold reserves … was not constrained from using expansionary policy to offset banking panics, deflation, and declining economic activity. Simulations, based on a model of a large open economy, indicate that expansionary open market operations by the Federal Reserve at two critical junctures (October 1930 to February 1931; September 1931 through January 1932) would have been successful in averting the banking panics that occurred, without endangering convertibility [through losses of gold reserves]. Indeed had expansionary open market purchases been conducted in 1930, the contraction would not have led to the international crises that followed.

Specifically, they find that under a simulated program of large open-market purchases to ooffset the contraction of the broader money supply "U.S. gold reserves would have declined significantly but not sufficiently to reduce the gold ratio below the statutory minimum requirement."

The gold standard was responsible for spreading the Great Depression from the United States to the rest of the world.
The second part of the "Golden Fetters" indictment, to quote a recent statement of it (Bordo 2010, p. 40), is that "The Great Depression spread across the world via the fixed exchange rate gold standard." In Eichengreen's (1992, p. xi) earlier words, the international gold standard "transmitted the destabilizing impulse from the United States to the rest of the world." This description of events has some truth to it – but is misleadingly incomplete. The destabilizing impulse, as emphasized in the previous section, came from the Federal Reserve and Bank of France sterilizing gold inflows and thereby absorbing ever-greater amounts of gold. "These policies," as Ben Bernanke (2010, p. 15) has noted, and not the gold standard as such, "created deflationary pressures in deficit countries that were losing gold." More importantly, as discussed above, counties like the United Kingdom were already headed for deflation once they decided to return to the gold standard at their prewar parities while their price levels were well above their prewar (and equilibrium) levels.

The interwar period shows us a case where central banks – not the gold standard – ran the show. To put it mildly, they failed to run it as well as the classical gold standard. As Richard H. Timberlake (2005) has emphasized, it is illogical to blame "the international gold standard" for the interwar disaster. The international gold standard worked well in the pre-War period when central banks were *less* active in trying to manage gold flows (and in many countries, like the United States and Canada, did not yet exist). Blame for the unfortunate results of the interwar system falls instead on decisions to resume at the old parity and on the discretionary policies of central bankers. The illogic is compounded when the failure of the interwar system is taken to provide evidence in support of an argument for giving central banks more discretion than they have under an automatic international gold standard.

The interwar experience does carry a lesson for advocates of reinstating an international gold standard. It indicates that the international gold standard works best when it works most automatically. A valid point is therefore made by Ben Bernanke's lecture slide that reads, "the effects of bad policies in one country can be transmitted to other countries if both are on the gold standard." Bad monetary policies can come from discretionary central banks in other countries. It would therefore be better for all participating countries if a treaty reinstating an international gold standard could also institute enforceable constraints against central banks disturbing the peace. The most thorough constraint is to eliminate central banking in favor of free banking. Among other things, free banking would decentralize currency issue and gold reserve holding, subjecting it to competitive interbank clearing discipline, and thereby all but eliminate the risk of large or persistent money-supply errors.

A gold standard, like any fixed exchange-rate system, is vulnerable to speculative attacks.
My frequent co-author George Selgin (2012) finds it "more doubtful [today] than ever before that any government-sponsored and administered gold standard will be sufficiently credible to either be spared from or to withstand redemption runs." He quotes James D. Hamilton (2005) to similar effect: given that central banks the Treasuries on the gold standard can and often have left it, and given "that speculators know this," it follows "that any currency adhering to a gold standard will…be subject to a speculative attack." Selgin adds: "The breakdown in the credibility of central bank exchange rate commitments since World War I cannot be easily repaired, if it can be repaired at all."

I pretty much agree with this (Hamilton's "*any* currency" is too sweeping), and I agree with the lesson Selgin draws. Namely, that the non-credibility of a government central bank's promises to stay on the gold standard is not a case against the gold standard but a case against combining the gold standard with central banking. Because a typical central bank has a legal monopoly of currency notes denominated in the local monetary unit, it has the power to devalue or to take the economy entirely off the gold standard by ending gold redemption of its liabilities. The devaluation or departure from gold can be coordinated with the Treasury, which has a legal monopoly on coins.

A more durable and credible approach to sustaining the gold standard is to let the private sector competitively issue currency. Private firms in a competitive market are more strongly committed to gold redemption for two reasons: they can be legally held to their promises (unlike central banks, which enjoy sovereign immunity from lawsuits over devaluation or non-redemption), and they need to compete for customers who can go elsewhere by avoiding practices that raise their risk of not being able to redeem. If any single bank among dozens fails

or suspends payment, the gold standard survives. Free banking thus delivers a more robust and sustainable gold standard (Selgin and White 2005).

In an attack on a fixed exchange rate, say on the Pound Sterling when it was pegged to the Deutsche Mark, speculators borrow in pounds, redeem them for marks, and hold marks until the Bank of England runs out of marks and must devalue the pound. They make a profit if and when devaluation comes because they now get more pounds for each mark they hold, and can repay their pound-denominated loans with plenty of marks left over. A similar path to profit exists under a gold dollar standard in which the Federal Reserve is empowered to devalue the dollar against gold. There was in fact a run on the dollar in anticipation of FDR's devaluation in 1933. But no such path is available with decentralized private issue of gold-redeemable currency entirely by commercial banks, because no commercial bank can devalue or redefine the dollar. If a commercial bank fails, whether because of a run or otherwise, those it has lent to must still pay back their loans in undiminished dollars. Hence there is no profit in borrowing, running for reserve money, and repaying later, even if the run succeeds in bringing down the bank.

Fiat money is necessary to have a lender of last resort able to meet the liquidity needs of the banking system.

Barry Eichengreen (2011) writes:

Under a true gold standard, moreover, the Fed would have little ability to act as a lender of last resort to the banking and financial system. The kind of liquidity injections it made to prevent the financial system from collapsing in the autumn of 2008 would become impossible because it could provide additional credit only if it somehow came into possession of additional gold. Given the fragility of banks and financial markets, this would seem a recipe for disaster. Its proponents paint the gold standard as a guarantee of financial stability; in practice, it would be precisely the opposite.

Briefly, the classical conception of the "lender of last resort," spelled out by the English journalist and banking historian Walter Bagehot (1871) during the classical international gold standard era, is an institution that lends reserves to illiquid (but solvent) commercial banks in a period of peak demand for currency or bank reserves, in the extreme during a period of bank runs. Its aims are to prevent regrettable bank insolvencies due to hasty asset liquidations, and to satisfy the public's demand for currency or reserve money so that the runs cease and the market calms. This seems to be the notion that Eichengreen has in mind.

Assuming that the Federal Reserve exists and is the agency to which the role is assigned, Professor Eichengreen takes a true gold standard to imply that "it could provide additional credit only if it somehow came into possession of additional gold." That is, the gold standard is not "true" unless it imposes a 100 percent gold marginal reserve requirement on central bank liabilities. This is a highly idiosyncratic understanding of a true gold standard. Peel's Act of 1844 did impose a 100 percent marginal gold reserve requirement on expansion on the Bank of England's *note-issues*, but the Bank could still provide additional credit by expanding its deposit liabilities. Indeed the Bank is generally understood to have acted as a lender of last resort during the Baring Crisis in 1890, while Peel's Act was still in place.

A 100 percent gold marginal reserve requirement on all central bank liabilities would constrain last-resort lending. But imposing such a rule on the central bank is not required to have a true gold standard, and indeed having a central bank is not even required. A gold standard, again, is generically defined by gold serving as the medium of redemption and medium of account, not by any reserve requirement imposed on a central bank. The United States was on the classical gold standard without a central bank from 1879 to 1914. During that period, private clearinghouse associations acted as lenders of last resort to their member banks (Timberlake 1984). So a central bank is not even necessary to have a lender of last resort.

Eichengreen (2011) argues that "confidence problems are intrinsic to fractional-reserve banking and why an economy with a modern banking system needs a lender of last resort." But as noted in Section 6 above, confidence problems are minimal if no legal restrictions prevent banks from adequately capitalizing and diversifying themselves.

Setting the new gold parity is too hard.
The danger of setting the new gold parity too low (too few dollars per ounce of gold) is exemplified, as Selgin (2012) notes, by Great Britain's choice in 1925 to restore the old parity. At discussed above, because the price level had risen sharply, a return to the old parity required a sharp deflation to return to the old price level. The danger of setting the parity too high is, conversely, a transition inflation to reach the new equilibrium price level. Eichengreen (2011) summarizes the problem this way:

> Envisioning a statute requiring the Federal Reserve to redeem its notes for fixed amounts of specie is easy, but deciding what that fixed amount should be is hard. Set the price too high and there will be large amounts of gold-backed currency chasing limited supplies of goods and services. The new gold standard will then become an engine of precisely the inflation that its proponents abhor. But set the price too low, and the result will be deflation, which is not exactly a healthy state for an economy.

To avoid transitional inflation or deflation, the new parity must be the one at which monetary gold supply and demand are equated at the *current* price level. If we could assume that the supply and demand for monetary gold were unaffected by the reinstatement of the gold standard, the solution would be easy: choose the current price of gold. But that is unlikely be exactly true. As I earlier argued, the demand for gold bullion and coins today is an inflation-hedging demand that would be absent under a gold standard. On the other hand, because a gold standard lowers the mean and medium-term variance of the inflation rate, the demand to hold currency and demand deposits for transaction purposes, against which banks would hold gold reserves, would rise. As Selgin (2012) notes:

> The problem here is, not that there is no new gold parity such as would allow for a smooth transition, but that the correct parity cannot be determined with any precision, but must instead be discovered by trial and error. Consequently the transition could involve either costly inflation or its opposite … .

Tyler Cowen (2008) cites the same problem: "One five or ten percent deflation is enough to crush the economy and indeed the whole gold standard idea. Given the socialist calculation debate, can we really know the right transition price?"

Choosing a new parity is indeed a problem. There are two approaches to estimating the new parity that would avoid transitional inflation or deflation. Note that new parities need to be chosen simultaneously by all participating currency areas in order to agree to return to the gold standard simultaneously so as to create the broadest possible international gold standard. The first, more conventional approach is to use econometric studies of recent inflation-hedging demand for gold, and of transactions demand for zero-yielding bank reserves at gold-standard-type expected inflation rates. The second approach, which calls for further study, is to derive guidance from market signals, in particular from the gold futures market or some new kinds of prediction market, in which market players put money on their own estimates of what the real purchasing power of gold will be following a return to the international gold standard.

In a world where prices and wages exhibit greater downward that upward stickiness, playing it safe in the choice of a new parity means erring on the side of a small transitional inflation rather than a deflation.

So as not to overstate the relative size of the problem, however, we should note that the same problem attends any significant change in the inflation path, or significant change in other policy (such as the rate of interest on reserves) under a fiat standard. The switch to a lower inflation rate target, for example, will cause the path of transactions demand to hold money relative to the volume of spending to jump upward (will shift the velocity of money downward). Underestimating the increased demand, and failing to offset it with a one-time increase in the stock of money, will cause the policy to create an excess demand for money and will thus create a recession with unsold inventories of goods and unemployed labor services. The Bernanke Fed's switch from zero to positive interest on bank reserves in October 2008 sharply increased the banking system's demand to hold reserves, swamping the money-supply-expanding effect of the accompanying "Quantitative Easing 1" expansion of reserves. The result was seven months in 2009 (March through September) in which the year-over-year inflation rate was negative. The downturn in real output already underway was amplified. Curiously this "bad" deflation – and the first deflation of either kind in more than five decades – occurred on the watch of an expressly deflation-averse Fed chairman.

Inflation is so low today that we don't need a gold standard.
Ezra Klein (2012) comments:

In 1981, the country really was facing an inflation problem. It made sense that people would be looking for radical alternatives that would help control inflation. Today, inflation is about as low as it's ever been, and if you look at market expectations — you do believe in the market, don't you? — it's expected to stay low.

It is of course true that the urgency of adopting a gold standard to fight inflation is lower when the inflation rate is lower. If inflation were our exclusive concern, and we could trust the central bank to keep inflation as low under a fiat standard as it was under the classical gold standard, then it would be foolish to bear any cost to reinstitute a gold standard. Inflation today is certainly lower than it was in the 1970s and 1980s, but it is not true that inflation is as low today as it was under the classical gold standard. As noted above, the inflation rate was only 0.1 percent over Britain's 93 years on the classical gold standard. Over the most recent ten years (August 2002 to August 2012) in the United States, the CPI-U price index rose 27.5 percent, for

an annualized inflation rate of 2.5 percent. Over the last forty years (since August 1972, shortly after President Nixon closed the gold window), the rise has been 449.2 percent, and the annualized rate 4.4 percent. There remains a case for the gold standard based on inflation alone.

How low are market expectations of the inflation rate to come? According to the *Financial Times* (17 September 2012), the announcement of the Fed's QE3 program pushed the market's expectation of the US inflation rate over the next 10 years (derived from prices on the inflation-indexed bond market) to 2.73 percent per annum. Inflation expectations are not as low today as they were under the classical gold standard, and they are more volatile. There is no tangible institutional assurance that the US inflation rate will not return north of 4 percent or even 10 percent.

Of course, consumer price inflation is not our exclusive concern. The past decade has reminded us that, even with consumer inflation rates around 2.5 percent or lower, asset price bubbles and unsustainable credit booms are a serious danger under a central bank policy of artificially low interest rates. The ultralow Fed Funds rate policy of 1.25 percent or less from November 2002 through June 2004 helped fuel the housing bubble (White 2012b). Today's rate policy has been holding the Fed Funds rate at 0.25 percent or less for more than 3.8 years (since December 2008), with the announced prospect of another three years of ultralow rates. Time will tell where a new bubble is now forming. More generally, the Fed's track record for real economic stability under fiat money does not weigh in favor of fiat money (Selgin, Lastrapes, and White 2012).

A gold standard needs to be international, and the rest of the world won't come along.
Selgin (2012) makes an important point when he notes that

> the historical gold standard that … performed so well was an *international* gold standard, and [its] advantages .. were to a large extent advantages due to belonging to a very large monetary network. Consequently, a gold standard that is limited to a single country, and even to a very large country, cannot be expected to offer the same advantages as a multi-country gold standard or set of gold standards.

I have already argued above that the strongest case for reinstating the gold standard is for an international gold standard. Getting other nations to join in the reinstatement is therefore a genuine problem (see also White 2008). But this is not a reason for rejecting the case for an international gold standard. It is rather a reason for taking the argument to other countries while developing it at home. China and much of Latin America already link to or shadow the US dollar. So the most important places to take the argument are the Eurozone, Japan, and Great Britain.

The leading nations did have come together to reconstruct the international monetary system in 1944, at the conference in Bretton Woods, New Hampshire. Such a gathering can happen again once dissatisfaction with the post-Bretton Woods system of completely unanchored currencies becomes deep and widespread enough. The influential leader of the UK delegation at Bretton Woods was John Maynard Keynes, who famously considered the gold standard "a barbarous relic" and was determined to minimize its role to widen the scope for discretionary central bank policy-making (see White 2012c, ch. 11). The challenge for those who favor

restoration of an international gold standard will be to insure that the delegates to the new conference have a better understanding.

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