The Long History of the Price Stability Objective

Introduction

Michael Bordo

It is a great pleasure to introduce François Velde. I have known François and his work over his whole career. François is a very interesting scholar. He is a financial historian and a Minnesota macroeconomist.

He works on extremely important and usually very old episodes. In fact, even ancient topics. His forte is getting deep into the weeds, exploring the micro details, and showing how they relate to the macro and the policy worlds. I have heard him give beautifully illustrated talks on the ancient origins of coins. He wrote a wonderful book years ago with Thomas Sargent, *The Big Problem of Small Change* (2003). Elsewhere, he wrote about how John Law, the infamous Scottish adventurer and political economist in the early eighteenth century, persuaded the French crown to take over the massive French public debt and turn it into shares in his Mississippi Company, which he founded to exploit the wealth of the swamps of Louisiana. In turn, the Mississippi Company was financed by his prototype central bank, the Banque Royale. The famous "bubble" eventually collapsed.

François showed how Law's scheme was actually quite rational, and it could even have succeeded. Once I heard him explain the details of the French ancien régime public debt, which deteriorated drastically in the years leading up to the French Revolution. He showed how it could have been saved. I can go on and on. But instead of doing that, I'm going to welcome François.

Reference

Sargent, Thomas J., and François R. Velde. 2003. *The Big Problem of Small Change*. Princeton University Press.

26

The Long History of the Price Stability Objective

François R. Velde

Money measures everything
—Aristotle, Nic. Ethics 1133b

Divers weights and divers measures,
both of them are alike abomination to the Lord
—Proverbs 20.10

This chapter is about the long history of the price stability objective, and I place it under the protection of two pieces of ancient wisdom in the epigraphs above.

Self-Justification

I begin by trying to justify myself for engaging in this bit of intellectual and policy history. What use does history have in making policy? After all, if policy is essentially an optimization problem, specify the problem, solve for the optimum, and go home. Who cares about the history of past optima?

One could be worried about mis-specification of one's problem, in which case looking at other solutions might be useful, like looking over the shoulder of the student seated next to us. Of course, our ancestors might have had a different objective function, faced different constraints, and had different beliefs; that will need to be sorted out for their solutions to be of interest to us. But if, for example, we find that the history of past optima displays a certain pattern or constancy, we may want to think twice about moving away radically.

So moved by humility, we turn to the past. Suppose that we observe a consistency in principles over long periods of time. Or suppose that, instead of proceeding from a *tabula rasa or blank slate*, we notice that our problem has been considered again and again, and until yesterday the answer was the same. Should we save ourselves the trouble of re-optimizing and copy and paste the time "*t-1*" solution? Sure, constraints may have changed a little, but let's invoke the envelope theorem (from optimization theory) like Edmund Burke (1729-97) implicitly did when advocating for conservatism. Or perhaps some innovation has arisen and the constraints have been loosened in some way, or the objective function has changed. The tension between conservatism and innovation has been with us for a long time.

I will be thinking here about monetary policy, more specifically about the price stability objective, which is one of the mandates of the Fed, *the* mandate of the European Central Bank (ECB), and a mandate or objective for many other central banks. As concerns the Fed, the legal mandate is so broadly stated or conceived that a "framework" (or statement of long-run objectives) has been deemed a useful elaboration since 2012, subject to periodic reviews such as the ongoing one.

I will go very far back in the past for comparable instances, as far back as the Middle Ages. To do so, I will have to explain what monetary policy and price stability meant in those days.

What I am doing involves economic history but also the history of economic thought, because it is not enough to describe what people did, but also why they did it; and for that, we have to get into their minds.

A Foundational Text

I will start with this text, which was written in the second century AD, by a jurist and a high official of the Roman Empire.

> The origin of all buying and selling is in exchange or barter. For in times past money was not as now, nor was one thing called "merchandise" and the other "price"; rather did every man barter what was useless to him for that which was useful, according to the exigencies of his current needs; for it often happens that what one man has in plenty another lacks. But since it did not always and easily happen that when you had something which I wanted, I, for my part, had something that you were willing to accept, a material was selected which, being given a public and stable value, avoided the problems of barter by providing a constancy of quantity. This material, struck with a public imprint, provides use and ownership less from its substance than from its quantity; nor are both things called merchandise, but one is the price. (Dig. 18.1.1pr.–1, Mommsen 1985, translations from this volume mine)

The jurist, Julius Paulus, who lived during the late second and early third centuries, is commenting on the asymmetry of the purchase and sale contract, in which there is a buyer and a seller, and they have different rights and obligations. That was not always the case, because there was not always money.

He begins by stating the lack of double coincidence of wants as the basis for a medium of exchange. This, by the way, is the oldest formulation of that problem. How to solve the problem? This is where it gets interesting. "A material was selected" (note the passive voice) "which, being given" (again, passive voice) "a public and stable value, avoided the problems of barter by providing a constancy of quantity. This material, struck with a public imprint, provides use and ownership less from its substance than from its quantity."

By quantity, one probably has to think of the number of coins that are given as the price in exchange for the merchandise. Why is this text interesting? It ended up being part of the legal tradition of Western Europe in the sixth century AD. The Byzantine Roman Emperor Justinian (482–565) compiled lots of legal texts, and this was one of the texts that was preserved (Mommsen 1985).

And as you saw very clearly and crisply presented, the passage highlights the dual nature of money. There is a "natural" problem for which there is a solution, but that solution is not natural, and it is difficult to say who or what exactly came up with it or makes it work. That observation is what the passive voice highlights. But the word "public" appears twice, making it clear that money is a social construct.

Money in the Middle Ages and Early Modern Period

Money is both natural (it is a material) and a social construct, and the way it operated in the early Middle Ages and early modern period continued to reflect this dual nature.

On the one hand, money consisted of coins, gold and silver, both material objects. The sovereign determined the size and the specifications of those objects, but no numbers were written on them. The value was in terms of some reference coin, but it was not inscribed on the coin. So that is the physical side. But the social construct appears in the fact that the accounts were kept in units and liabilities were denominated in these units of account.

So what was a unit of account? It was a reference to a specific coin, often one that was in circulation and served as numeraire (a benchmark or standard unit of value) for all others, or one that had ceased to be in circulation.

And what was monetary policy in such ancient times? One could change the contents of a coin, and that was called a debasement. One could also change the price that the mint paid for metal, which would change the seigniorage rate, that is, the monopoly tax that the government levied to make coins. Or one could modify the face value, the value assigned in reference to some coin. This was not about fine-tuning eight times a year, but decisions that needed to be made at various times to make up for depreciation of coinage, to prevent outflows, or sometimes to raise revenues, using (in effect) the inflation tax.

A Doctrine Elaborated

In the background, a doctrine was elaborated over time. The main contributors were civil lawyers focused on debt repayment, and their view was that one should not harm the creditors. As a result, they had a very "hard money" view. They looked through the unit of account, the social construct aspect, to the substance. And they said, if you lent X amount of gold, you should get back that same X amount of gold.

Catholic Church lawyers went even further, for somewhat accidental reasons. The accident was this. A king came to the throne and swore to uphold the currency. Later, he realized that the currency had been debased shortly before by his father. Finding himself in a bind, and in those days you wrote to the pope, he would write: Dear Pope, here's my predicament, can you get me out of it? And the pope would write back along the lines of: An oath is a serious matter, but since the coin was bad, you are allowed not to uphold it and go back to the original coinage.

This became part of the law of the Catholic Church, and it led the lawyers to wonder: What was so wrong about that coin that it justified breaking a solemn oath? Over the course of a few decades, very rapidly, they elaborated on the doctrine. They admitted that the right to make coins belonged to the sovereign, that it was a tradition inherited from Roman law, from the Roman Empire. But since money serves a common purpose, and the sovereign cannot just do anything he wants with it because, as Aristotle essentially said, it measures all things. And as Proverbs says, diverse weights, diverse measures are not a good idea. Money measures all and should not change without consent.

This consent requirement is an interesting aspect of Catholic Church law, which reused an element of Roman law to manage trusteeships or tutorships, a maxim: That which affects everyone requires the consent of everyone. But can consent always be obtained in time? May it not be presumed in some circumstances? Exceptions were allowed to accumulate over time. A moderate seigniorage was acceptable to cover the production costs of making the coins. Legitimate emergencies were acceptable. And in the fifteenth century, they added this interesting notion that, in an emergency, you can issue really bad coinage, but afterwards, you have to buy it back. You have to make whole the people to whom you gave the coins, or rather, the people who hold the coins at the time the emergency ends.

Three Thinkers

I want to give a few examples of thinkers along this path, each with a historical context.

The first is Nicole Oresme (1320–82), who lived in difficult times. France and England were at war for a hundred years (on and off), and the monetary policies were quite different. England debased its currency infrequently and by small amounts. France had episodes of extreme debasements, whose purpose was to raise seigniorage and finance the wars against the English.

Oresme was a cleric, trained in church law. He was steeped in these ideas I just described. But he was also an advisor to Charles V, king of France, who reigned right after one of those episodes of extreme debasement.

Oresme talked, in very subtle ways, about essentially the effect of inflation on nominal contracts, and why it was bad. He explained that the prince's gain was the community's loss, but it was grounded in the notion that money is a tool that belongs to everyone, and you cannot manipulate it, even when you are being invaded by the English.

Another fellow in that tradition is a Spaniard and a Jesuit, Juan de Mariana (1536–1624). His context is a little different. The Spaniards had just discovered fiat money printed on copper instead of paper, but it is basically fiat money, and they started printing a lot of it in the first two decades of the seventeenth century. Mariana wrote in 1609, before any serious depreciation of that copper currency, but he had harsh words for it. He saw it as an illegal tax, taking away the properties of the king's subjects, without their consent. He did see the benefits of having this kind of inflation, including a very interesting analysis of foreign trade. But on balance, the costs outweighed the benefits. And he also noted very pointedly, when bad things happen, people in power get blamed. This was meant for the King of Spain, but Mariana had his own trouble, specifically with the Spanish Inquisition.

Before I get to the third character, I have to explain his context. It has to do with recoinages. One problem with physical coins of gold and silver is that they depreciate over time due to wear. Year by year, it is not a large amount, but over decades or centuries, it can accumulate to significant amounts. As a result, the money supply consists of a mixed population of coins, some of which are new, some old, some worn, some not. And this means that you do not have a single clean standard anymore.

If there is a trade deficit, it must be settled by shipping out metal, and of course, the heavy coins go out first. The average weight of coins in circulation decreases over time, the exchange rate depreciates, and at some point, authorities have to react. A natural solution is to debase, so that the new coins added to the stock are of the average weight of the ones in circulation.

Another solution is to recall all the coins and make them new again. But then the question arises: based on what standard? If the old standard is used, a problem arises since the coins are worn and the missing metal has to be provided for. Otherwise, one lets bygones be bygones, and the depreciated coins are the new standard.

This comes down to a question of who bears the costs. In one case, the cost is on the bondholders (holders of nominal assets). In the other case, it is either on the money holders who will have to come up with the difference, or else the government comes up with the difference, which means the taxpayers.

These conflicts between bondholders and taxpayers are a very old story. In fact, in 1622, Naples (then under direct Spanish control) found itself in one of those situations, and the local government decided to debase. The king of Spain (ruler of the Kingdom of Naples) heard about it and basically said that it was out of the question, I am a hard money guy (paradoxically, at the same time as he was pushing his copper coins back home), and he imposed a recoinage at the old standard. Initially, the cost was going to be borne by the money holders, but that did not work out, especially because some of the money holders were banks, and they would have gone bankrupt and created a systemic crisis. They ended up with a complicated formula, which bailed out depositors, increased local taxes, but also taxed foreigners' remittances, because after all, their debt had been revalued, so it was only fair that they should contribute to the cost.

A similar situation showed up seventy years later in England. In the 1690s, coins were clipped or worn, and a recoinage was needed. By then, a new technology was available, so that the new coins would be more resistant to clipping.

John Locke (1632–1704), the third figure, was advising Parliament, where many were saying: Let bygones be bygones, let us devalue by 20% so the cost will not be borne by anyone, well, except the bondholders. Locke was resolutely opposed. In his view, contracts are sacred. They just had a Glorious Revolution, and he felt now was not the time to mess with property rights! I am putting words in his mouth, but these words are from him:

> Men in their bargains contract not for denominations or sounds, but for the intrinsick value; which is the quantity of Silver by publick Authority warranted to be in pieces of such denominations. (Locke 1695)

Recall Paulus and his invocation of the public authority. Locke argued that in the name of the social contract, we cannot modify money, that as a social construct, to do so would violate contracts.

Ultimately, the 1695 recoinage was done at government expense, that is, at the taxpayers' expense, which ended up being 65% of annual revenues in the year 1695, in the middle of a European war. It was extremely costly.

Innovations

As we leave the Middle Ages, some innovations change the meaning of price stability. Jurists discovered that making money out of intrinsically worthless material, like paper, is fine. Partly, because they went back to that text of Paulus and paid a lot more attention to the work that "public imprint" does in giving money value. Also, in part because Marco Polo (1254–1324), the Venetian merchant and explorer, told us that societies on the other side of the world did it. And by the end of the sixteenth century, jurists did not have to go that far to see paper money at work. In Naples, private banks circulated pieces of paper long before the London goldsmiths. Doctrine changed abruptly, under the influence of a French jurist, Charles Dumoulin (1500–66), who said that the sovereign could set the value of money at will. Case law followed suit in England, with the "mixed monies case" of 1604. In Amsterdam, the Wisselbank started as a ledger-money public bank, but by the 1680s, it had invented inconvertible money and open-market operations.

The basic point is that it was now possible to disconnect the substance and the unit of account by suspending convertibility. Did that change the prescriptions? Not very much. That princes can do what they want doesn't mean that they should. John Locke's sound money views remained influential well into the nineteenth century.

No doubt that was because of the examples of disconnections gone bad. The Scotsman and economist John Law (1671–1729) had argued that this new invention, paper money, could be better than silver-based money, but his implementation turned disastrous in 1720.

In the eighteenth and nineteenth centuries, all countries were somewhere on a spectrum between hard money and soft money, although none, even the gold standard of gold standards (Britain), avoided periods of inconvertibility and price instability during the Napoleonic wars (1803–15). The US experience began inauspiciously with the Continental Congress (1774–81) but did better with the greenbacks during the country's Civil War (1861–65). France also had a bad experience in the 1790s, but in the nineteenth century, it resembled Britain and the United States with a stable standard punctuated by suspensions but reverting to the original parity. Bordo and Kydland's "state-contingent gold standard" (1995) is but an implementation of the canonists' medieval doctrine.

The so-called "periphery" is different in outcomes if not in aspirations. Austria and Russia experimented with printed banknotes very early on, from the mid-eighteenth century, but it took both governments a century and a half to return to convertibility. Italy (after unification), Spain, and Portugal all have extended episodes of inconvertibility, although price instability is better contained in these cases.

Big Shocks

World War I turned out, ex post, to be a big deal. Ex ante, it probably seemed to everyone like another instance of temporary suspension, but very few countries were able to make up and get back to the earlier standard, although Great Britain famously did in the 1920s. The diversity of experiences after World War I among countries is staggering, from the United Kingdom's stern adherence to convertibility at the prewar standard to the famous hyperinflations of Central and Eastern Europe.

As I reach the limits of my expertise, I will hasten toward my final words. We just went through a fairly large shock, not World War I–sized, but fiscally substantial. After the quiescence of inflation at the end of the twentieth century (the much-regretted "Great

Moderation"), the change in price level since December 2019 across advanced economies has been strikingly similar (with the odd exception of Japan), with an increase between 15% and 25%. A regression of that outcome on standard indicators by central banks will not yield anything significant, but Barro and Bianchi's correlation with fiscal expansions is quite striking (2025).

Conclusion

The price stability objective has a very long history, going back hundreds of years. In practice, it meant monetary dominance, but not absolutely strict adherence at all times. And of course, as John Cochrane reminded us yet again, monetary dominance has very strong fiscal underpinnings.

However, it usually included escape clauses, the state-contingent gold standard. But the key question is: even if one is allowed to deviate, must one return to the original standard, or to stability, but not necessarily make up for lost value? When the deviations are huge, like Germany's were during the hyperinflation of 1920–23, there is no point in a makeup strategy, but large deviations have serious distributional consequences.

From that perspective, the shock of the recent COVID-19 pandemic is large by Great Moderation standards. But by the standards of history, it's not really that large, and certainly within the realm where a makeup strategy is feasible. What is the right choice?

Thank you very much.

References

Barro, Robert J., and Francesco Bianchi. 2023. "Fiscal Influences on Inflation in OECD Countries, 2020–2023." NBER Working Paper No. 31838. National Bureau of Economic Research. Revised July 2025.

Bordo. Michael D., and Finn E. Kydland. 1995. "The Gold Standard as a Rule: An Essay in Exploration." *Explorations in Economic History* 32 (4): 423–64.

Locke, John. 1695. *Further Considerations Concerning Raising the Value of Money*. Printed for A. and J. Churchill.

Mommsen, Theodor, trans. 1985. *The Digest of Justinian*. 4 vols. University of Pennsylvania Press.

The Holy Bible. King James Version. Oxford: Oxford University Press, n.d.

General Discussion

Michael D. Bordo: We can take one or two questions.

James B. Bullard: As I understood, the pope played a key role in this. Would it have mattered if the pope were American, do you think?

François R. Velde: If he had been a Cubs fan, it probably would have been much better.

Andrew T. Levin: I had the honor of writing a paper with Michael Bordo about ten years ago, and our paper also started with the same quote from Julius Paulus. So it's worth noting that Julius Paulus was given the honorific "prudentissimus" by the Roman emperor. That honorific can be translated as "most prudent," "wisest," or "most sage." And it was given to Julius Paulus in recognition of the immense wisdom that he provided to the Roman Empire at that time. Perhaps the pope, in his role as bishop of Rome, could now give that same honorific to John Taylor?

Sebastián Edwards: That was fascinating. Could you say something about the assignats? You have the diagram there on the French Revolution. What I find very interesting is that, if I understand correctly, [Maximilien] Robespierre ended up being kaput because of the combination of hyperinflation and price controls.

Velde: No, he died before the hyperinflation.

Edwards: Could you tell us a little bit about the assignats?

Velde: So the very short story is three periods: Scene one: This paper money is launched, backed by land instead of being backed by gold, but it's backed, works nicely, doesn't depreciate.

Scene two: France stupidly goes to war with the rest of Europe, and tax revenues collapse. The only resource they have is printing money, but it soon depreciates. It's what Tom [Thomas Sargent] and I call the guillotine-backed regime, because you have to accept that piece of paper or else.

That's under Robespierre. That works for a while, but Robespierre is overthrown for a host of reasons, not so much the monetary aspect, I think. Then the day after he dies, there's a police report saying two things are happening: the currency is starting to depreciate, and prostitutes have come back on the streets. [France] gets the hyperinflation after that, but it's afterwards, once the restrictions are removed and the threat of legal action was removed, because he [Robespierre] was a very stern man.

Jon Hartley: "Thank you. I think a "Chronicles of a Deflation Unforetold" published in the *Journal of Political Economy* in 2009 is probably one of my favorite papers of all time. It's a paper by François. The paper is largely about monetary non-neutrality in the 1720s, in France. I'm curious, sort of in this whole span of history that you cover here in this wide-ranging talk across history, what do you think or what have you learned about monetary non-neutrality in these instances?

Here, your talk is mostly about inflation. And at what point does monetary policy take on, I guess, a more benevolent nature about spurring economic activity, where [there] is some sort of a perceived, maybe dual mandate or another triage going on? I'm curious where that fits in.

Velde: So the episode in question relied on the fact that in France, you didn't have denominations written on the coins. It fits in this story because there had been deviations from price stability in the previous years, and [under] John Law, in particular. After that, the government felt a need to return to the earlier price level in line with this tradition that you have to make up for things. They explicitly named the fact that the bondholders had seen their debt devalued, and they wanted to make it up to them.

So they wanted to change the price level. They thought that this was going to be a piece of cake. The coins that were worth six Livres, we just announced that now they're worth three Livres, and we're done. They thought, yeah, it might take a week, two weeks maybe at most for prices to adjust. They discovered monetary non-neutrality.

[David] Hume read about this story and talked about it. I don't see it feeding back to discussions of what's the right standard. After the suspension of convertibility by the Bank of England in the 1810s, there were debates about whether to make up or not. Do we have to return to the old standard? Here were some cranks who said, no, no, you shouldn't; it's going to be deflationary. They weren't taken seriously. There was also debate after the Civil War over the terms of the resumption, whether the United States should go back completely or not.

You see questions of the effects of the redistributional effects starting to play into the political debate.

In terms of when do people start thinking in terms of a dual mandate, I'd say that's more of a twentieth-century thing. Now, why that changed, that's a political economy story.

Hoyt Bleakley: Thanks. Your presentation brings to mind the phrase "the coin of the realm." This often involves the state being aggressive to ensure that there is indeed a coin of the realm. But how often was there tolerance of other monetary instruments, maybe even an endorsement of competition amongst different monetary regimes?

Velde: Yeah, that varies a lot; it depends on how big you are.

If you're a small, little city-state, it's hard to keep the foreign coins outside. Very roughly, the medieval period tends to be fairly tolerant. And then about the sixteenth, seventeenth, and eighteenth centuries is when you see countries starting to prohibit foreign coins. Before then, in the fifteenth and sixteenth centuries, sometimes you actually have official values for the foreign coins.

You had long lists of foreign coins and what they're to be taken at. But it's a nation-state kind of thing, I would say.

Robert J. Barro: So after the Napoleonic wars, there was the question about going back on the gold standard in the United Kingdom.

And David Ricardo took the lead in parliament, particularly arguing to go back and to go back at the previous parity. But was that the first example of the return to parity question?

Velde: There were other examples. This wasn't the first time, by a long shot. In the Neapolitan example, in 1622, there were public debates about returning to the old standard or not, and the cost involved, and things like that.

Bordo: I think we should thank François.