

## Challenges for central banks

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Comments at the ECB Conference on Monetary Policy: bridging science and practice<sup>1</sup>

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Rather than give a specific paper, I'd like to offer a broader overview of the challenges central banks and the ECB in particular face. My comments summarize and extend many written pieces of academic research, and other essays, which I list in case some of this sparks your interest.<sup>2</sup>

Broadly, I will discuss central bank challenges in chronological order, and from small to large:

1. Interest rates and inflation, and the monetary policy framework.
2. Financial stability, in light of 2008 and Covid.
3. Preparing for future risks and climate change.

### Challenge 1: Interest rates and inflation.

The single most basic task of a central bank is to control inflation via its short run interest rate target. Behind this task are a few important facts, which I illustrate in the graphs. The first set of graphs shows CPI and interest rates, the second set shows the core CPI and interest rates.

First, the graphs show that the ECB has routinely failed to make its 2% inflation target. The US and Japan have similarly struggled, despite years of zero or negative rates, massive QE, and many inspiring speeches. Why is this?

Now, I do not regard this outcome as a big problem. I prefer zero percent inflation, indeed a price level target. As a child of the 1970s, if I were in charge of a central bank around the end of 2019, with 1% inflation, unemployment at half-century lows, especially among the disadvantaged, inequality rapidly diminishing, and insanely low interest rates, I would have rolled out a big "mission accomplished" banner and gone on a long cruise. It's a good thing I'm not a central banker. I salute the honesty of our central bankers for worrying that they did not attain their target, and what this means about their ability to control inflation or deflation.

Second, note in these graphs that over business cycles and the long run, interest rates and inflation are positively correlated. Moreover, note the US recently raised interest rates with rising inflation, while Europe did not raise rates and inflation declined.

Third in the core CPI — less food and energy — you see the remarkable fact: inflation is remarkably stable at the ELB, in fact it is more stable at the ELB than back when interest rates moved around to stabilize inflation!

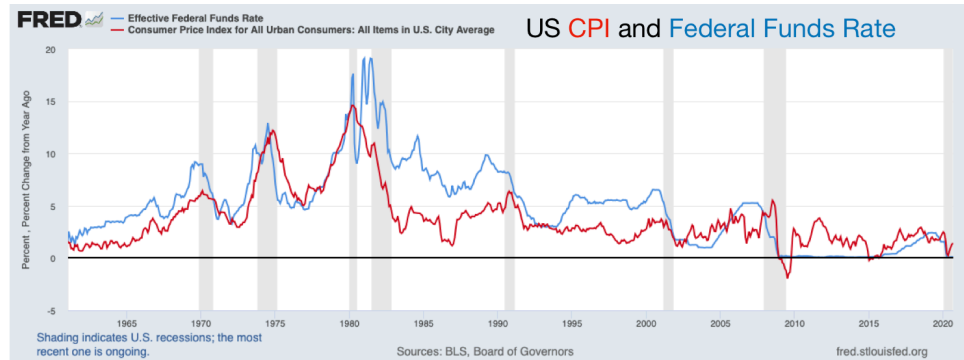
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<sup>1</sup> [https://www.ecb.europa.eu/pub/conferences/html/20201019\\_conferenceonmonetarypolicy.en.html](https://www.ecb.europa.eu/pub/conferences/html/20201019_conferenceonmonetarypolicy.en.html)

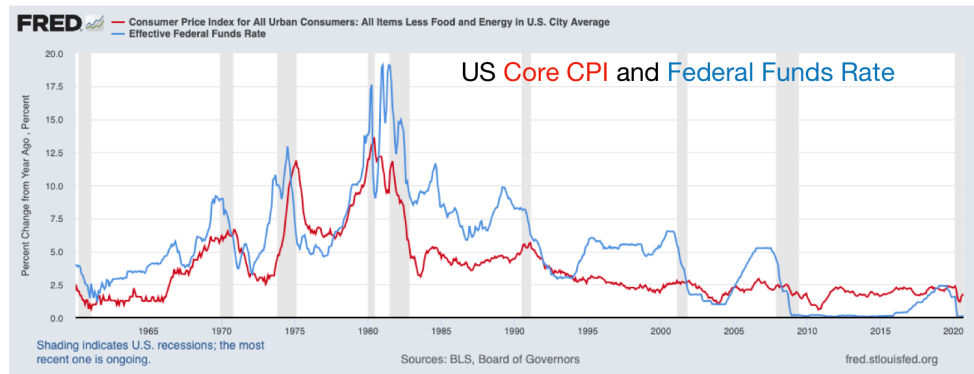
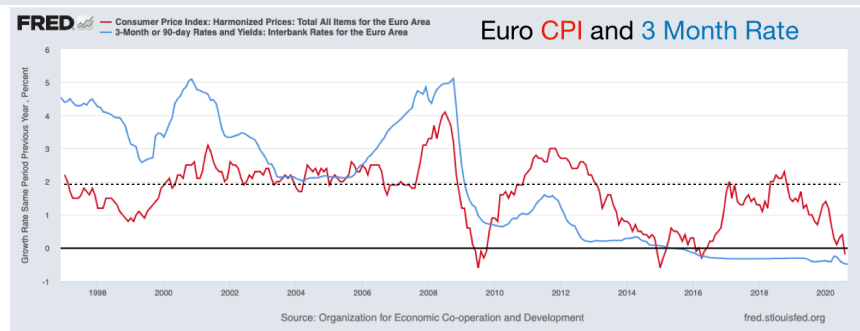
<sup>2</sup> In particular, I draw here from "The New Keynesian Liquidity Trap," "Michelson-Morley, Fisher, and Occam," "Stepping on a Rake: The Fiscal Theory of Monetary Policy," "Towards a Run-free Financial System," "A New Structure For U. S. Federal Debt" "Strategic Review and Beyond: Rethinking Monetary Policy and Independence " (especially), "The Fiscal Roots of Inflation," "A Fiscal Theory of Monetary Policy with Partially Repaid Long-Term Debt," all available on my website, [johnhcochrane.com](http://johnhcochrane.com), and many Grumpy Economist posts, [johnhcochrane.blogspot.com](http://johnhcochrane.blogspot.com)

## Challenge 1: Inflation and interest rates.

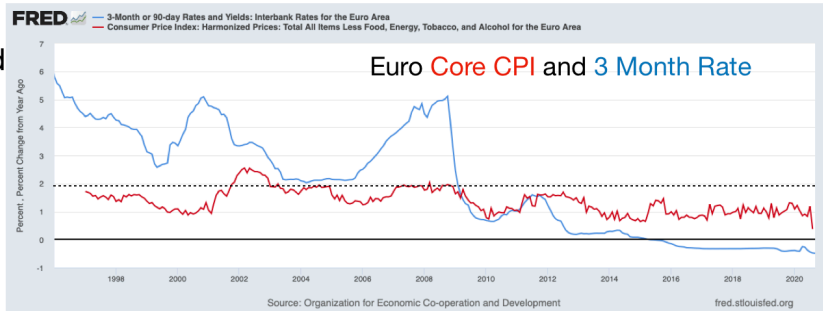
- The single most basic task and (hopefully) core competence of central banks.



- Failure to make target.
- (Really a problem?)
- Positive correlation.
- Recent history?



- Core inflation (Less Food and Energy)
- Inflation stuck at 1% (EU) - 2% (US)
- Despite ELB, massive QE and many speeches.

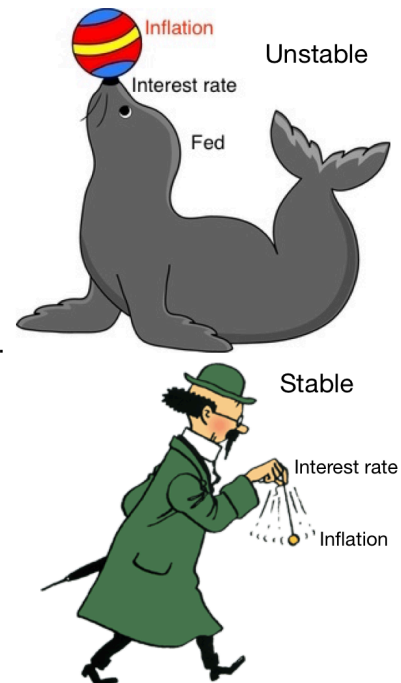


These facts raise the deep question: What is the mechanism by which interest rates raise/lower inflation?

There are three basic theories. Interest rate = real rate plus inflation rate is a steady state in all models. The question is, is this a stable or unstable, and determinate or indeterminate steady state?

How does it work anyway?

- Amazing stability of inflation at the ELB. A crucial experiment.
- $i = r + \pi$  is a steady state,  $i$  and  $\pi$  move together in the data.
- Is  $i = r + \pi$
- Unstable? (ISLM, adaptive expectations models. Predict a deflation spiral at ELB.)
- Stable/indeterminate? (New-Keynesian, rational expectations models. Predict a big deflation, then sunspot volatility at ELB)
- Stable/determinate? (New-Keynesian with active fiscal models. Predicts stable quiet inflation at ELB)
- $(MV=PY)$
- Implication of facts and theories:
- *A widely anticipated, steady, persistent rise in interest rates raises inflation. (Accompanied by stable fiscal policy)*
- Do we really know this is false? What Bayesian probability should a policy maker put on this possibility?
- Shouldn't a central bank be devoting immense research to this central question?
- Beyond the interest rate target? Index-non-indexed spread?



In the classic adaptive expectations ISLM view, it is an unstable steady state, as illustrated by my seal. If you peg interest rates, inflation must spiral up or down, the ball falls off the seal's nose. If the central bank lowers interest rates, inflation rises, and then the central bank must quickly catch up. The seal stabilizes inflation by following a Taylor rule, moving its nose more than one for one with the ball.

In rational expectations new Keynesian models,  $i = r + \pi$  is a stable steady state, as illustrated by Professor Calculus (Tournesol, properly, but my talk is in English). Inflation will eventually settle down to an interest rate peg. If the central bank lowers interest rates, inflation may briefly rise, but then will follow interest rates downward.

In the classic new-Keynesian view, however, inflation suffers multiple equilibrium sunspot volatility at an interest rate peg. The new-Keynesian view with active fiscal policy predicts stability and determinacy. A sudden deflation would require governments to raise taxes in order to pay off bond holders. Governments don't do that, bond holders know it, and this mechanism stops deflation.

These three models are basically impossible to tell apart in normal times. Interest rates and inflation move closely together in all three. However we can run an experiment: Stop the seal's nose, stop Prof. Calculus' hand, and watch what happens.

We did that in 2008. Nothing happened. There was no deflation spiral. There was no multiple equilibrium volatility. There was also no *inflation*, despite 300% increase in reserves, dealing a fatal blow to monetarism.

Macroeconomics is seldom offered so clear an experiment, in which rival theories make unambiguous and robust predictions. The usual ISLM view, which largely describes central banker's worldview, clearly predicted a deflation spiral, which did not happen. It is wrong.

The evident fact of stability at a peg, and both new-Keynesian theories, lead to an uncomfortable but unavoidable prediction

*A widely anticipated, steady, persistent rise in interest rates **raises** inflation.  
(Accompanied by stable fiscal policy)*

If professor Calculus wants the ball to move to the right, he should slowly and steadily move his hand to the right.

I emphasize all the caveats. *Anticipated*. Unexpected moments can send inflation the opposite way. 1980 was clearly unexpected. Steady and persistent are likewise crucial to see this long-run stability on top of short-run dynamics. Stable fiscal policy is important — Lowering interest rates will not help Venezuela.

Do I know this is true? No. Theory and data scream it, but a half century of tradition says otherwise. The point today is to ask questions, not deliver answers. The ECB's core mission is to hit an inflation target, which it is not doing. Theory and fact seem to suggest the steering wheel is hooked up in the reverse of what everyone says it is. Shouldn't figuring this basic question out be the focus of an intense research program? And should not a policy maker, who must weight different theories in a somewhat Bayesian manner, put some weight on this possibility?

A final thought. Is a short-term interest rate even the right instrument? That's worth asking too. I have argued elsewhere for targeting the spread between indexed and non indexed debt, which ought to nail inflation. Many other proposals are out there.

More deeply, we pay lip service to the proposition that monetary and fiscal policies are intertwined, but this thinking does not go very deep. In a world with very large debts, post-covid, monetary and fiscal policies will be even more entwined. To mention the obvious, if central banks want to raise rates to fight inflation, they will face strong pressures from indebted governments not to raise those governments' interest costs, not to raise private borrowers' interest costs, and not to lower market prices of debts. This is one more reason for central banks to fight hard for long-term government and private financing, which I emphasize below for financial stability reasons. If governments need to fight deflation, unbacked fiscal expansion is a key tool, but somehow just a little unbacked fiscal expansion. That requires a delicate fiscal policy that proclaims some debt will be inflated away, but other debt will be repaid.

## **Challenge 2: Strategic reviews**

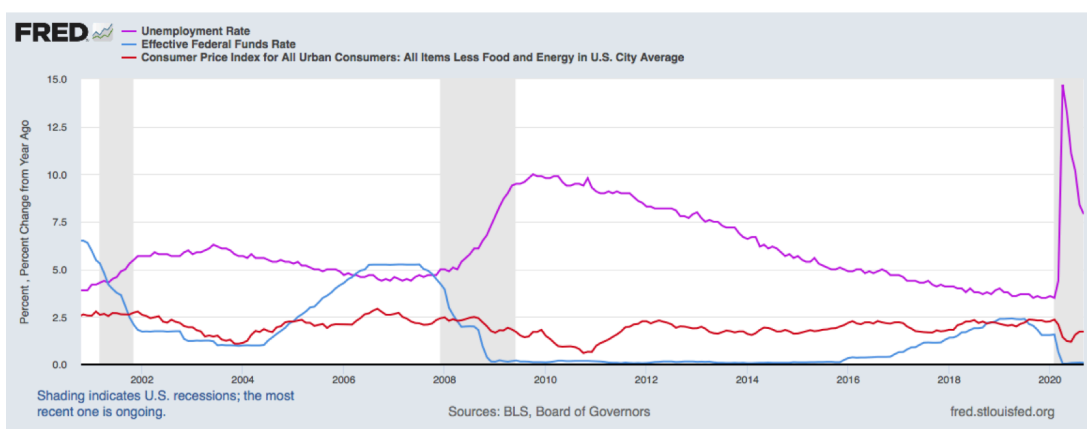
Just how should the ECB set interest rates and other monetary policy tools? The Fed is just emerging from its strategic review, and I gather the ECB is completing its. Bravo to both institutions. Rethinking basics is healthy.

Here is my reading of the US review.

## Challenge 2: Strategic reviews.

US strategic review. Policy bottom line:

- Regret over raising rate when unemployment declined. (?)
- A pure inflation target, but “flexible” not a rule. Allow some inflation before moving (1970s?).
- Allow more inflation for “inclusive” employment. 1963 era static Phillips curve?
- No doubt over ISLM + verbal expectations framework — sign of the effect!



In the language of policy makers, I detect regret over raising the interest rate when unemployment declined, on worries of future inflation, because inflation did not rise.

This is an unusual conclusion. Any other institution that said “inflation is coming unless we do something,” does something, and inflation does not come, would say “see, because of our wise action, inflation did not break out. Unemployment is at historic lows. Soft landing. Mission accomplished.”

The main message is that the Fed is going to follow more of a pure inflation target, waiting to see inflation before raising rates. It will even allow inflation somewhat over target — some Fed people have mentioned 2.5% — before acting. That policy is a bit reminiscent of the 1970s, which did not turn out so well. But perhaps there are other reasons.

The second message is that the Fed is going to put weight on “inclusive” employment, allowing more inflation to push unemployment down among low income and minority groups. While the goal is praiseworthy, the method is curious. The static Phillips curve (we trade a bit more inflation for less unemployment) was last seen in the 1960s. That didn’t turn out so well either. In my view, inclusive employment is an important and overlooked province of microeconomic and labor market policy. A big lesson later today: Central banks can’t fix everything and shouldn’t try.

The Fed basically announces interest rates will be zero for a long time. The weight on my proposition that one can raise inflation by slowly and predictably raising interest rates remains zero.

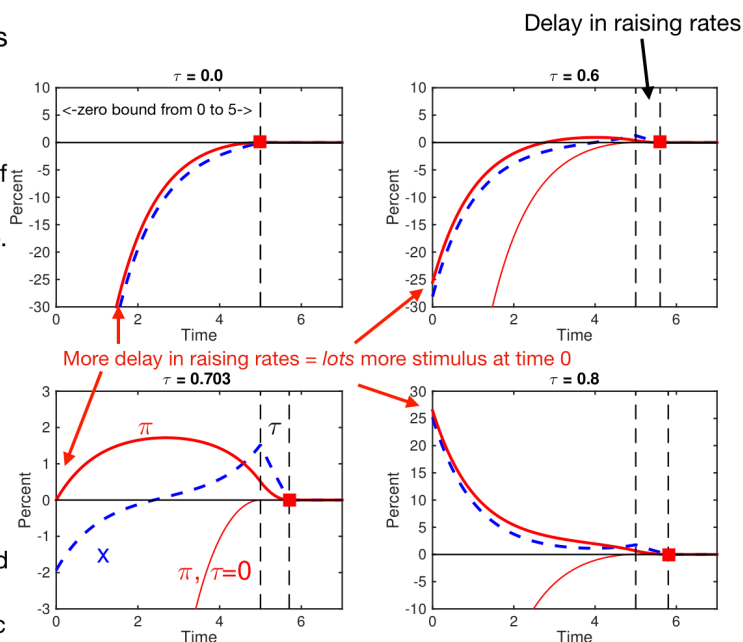
The policy review also has interesting *academic* lessons. It represents a victory of forward guidance (promises to keep rates low for a long time in order to stimulate today) over QE or negative interest rates. The ECB’s evaluation of the latter will be very interesting. The Fed is

vague about just how much inflation it will tolerate, how much it will let past shortfalls guide present excesses, and so forth, so it represents one more victory of discretion over rules.

The victory of forward guidance is a puzzle, as it is a strange prediction of new-Keynesian Models. My graph illustrates forward guidance in such a model. The economy is at the zero bound for 5 years. Then as we move across the graphs, the central bank delays liftoff for progressively longer periods. Looking at the intersection of the red inflation and blue output lines with the left axis, you see that small delays in liftoff have strong stimulative powers today.

### US strategic review-Academic lessons

- Victory of forward guidance over QE, negative rates for “stimulus.”
- Victory of discretion over rules.
- Forward guidance is a strange prediction of standard NK model:
  1. Stronger for promises further in the future.
  2. Stronger for more flexible prices, with infinite limit, zero limit point.
  3. Regarded as a puzzle to be fixed.
  4. Time consistency. Does anyone believe a central banker will do ex post what does not look best at that time, to fulfill forward guidance promises made years ago?
- FG not powerful in standard ISLM
- Is the best source of stimulus really more speeches by central bankers, accompanied by no action?
- Academia vs. policy disconnect in strategic review



Source: “The New Keynesian Liquidity Trap”

But this is *too* strong. Promises further in the future have stronger effects today. I asked my wife if I promised to cook dinner in 5 years would she clean up for a week. It didn’t work. These effects get stronger as prices get **less** sticky, without limit, until you get to the frictionless limit point where the effect vanishes. Weird.

Time consistency: Does anyone believe that a central banker will take an action in the future that he or she believes not the best at that time, merely to fulfill a forward guidance promise made years ago?

For these reasons and more, powerful forward guidance is regarded as a bug, a puzzle to be fixed in new-Keynesian models. Mike Woodford and Xavier Gabaix have long papers that modify expectations. I have a short paper that fixes it with active fiscal policy. But it is strange that a prediction most regarded as a puzzle to be fixed emerged victorious.

What to make of this? Perhaps central bankers like to think everyone listens to their speeches, so they like the idea that speeches are a powerful policy tool. But really, I think this story captures a deep disconnect between academic modelers and the policy makers’ largely unreconstructed ISLM world view. That is a deep and troubling lesson for the ECB to consider in its policy review.

### **Challenge 3: Financial regulation in the wake of the crisis.**

Moving on in the list of central bank responsibilities, where are we in financial regulation? After the 2008 crisis it was obvious regulation needed some reform.

There was a clear choice.

On the one hand, we could have absorbed Doug Diamond's famous dictum: "Financial crises are everywhere and always caused by problems related to short term debt." That insight suggests the Admati and Hellwig approach: Purge the system of run-prone short-term financing, create a resilient financial system in which people can lose money without bringing down the system.

Our central banks and legislators chose a different path: Double down on regulating asset risk taking. When a crisis comes, prop up asset prices so that indebted institutions don't lose money, and bail out creditors. This project aspired to but never quite implemented the lofty "macroprudential" goal to direct the quantity of credit, diagnose and softly deflate "bubbles" before they grew. And somehow keep in check the rampant moral hazard.

The Euro area faced the second question of sovereign default. Can sovereigns default? If not who pays, and how do you stop the attendant temptation to borrow too much? The ECB bought sovereign bonds to "do what it takes" and buy breathing room for structural reform. Italy, channeling St. Augustine's hope for chastity, says eternally, "Lord give me structural reform, but not quite yet." These questions are still hanging.

All of this stopped moving about 4 or 5 years ago. When a crisis is 5 years in the rear view mirror, energy to finish reform flags. That's another important lesson. The praiseworthy monetary policy review should energize financial reform, which it has not done at the US Fed.

### **Challenge 4: Regulation post-covid.**

Here I offer comments mostly based on the US scene.

In the covid crisis, our Federal Reserve intervened quickly and massively in Treasury markets. Once again, a hedge fund had over leveraged an "arbitrage" strategy, and there was a lot of sales from foreign holders. Big banks, hobbled by liquidity rules whose defects had been known for years, ran out of market-making ability. The Fed, unwilling to let prices drop, bought massively. To this day Fed officials are not sure the Treasury market can stand on its own. The Fed went on to save money market funds, and prop up the prices of corporate and state and local bonds, and then doled out billions of dollars in direct loans. Our government then bailed out the *airlines*. When did airlines become systemically important? We are on the edge of bailing out state and local governments and student loans.

It's a hard truth that preventing bankruptcy means bailing out existing bondholders. Debt overhangs us all.

In short, everything promised would never happen again, happened again, save bailing out the big banks. Well, you do what you have to do in a crisis. Yet last time there was at least talk and promises about solving the moral hazard later. Nobody seems to be talking about that.

Why should anyone keep spare balance sheet capacity or liquidity around to buy in bad times, knowing the Fed will step in at the slightest hint of trouble? Why not assume you can always sell assets on the way down, to the Fed if need be? Why should any company or local

government not borrow to the hilt, and why should investors not buy the debt, knowing the Fed will bail out and prop up prices in bad times?

Are we perpetually in a financial system of private gain, public losses, a Fed Put of price and liquidity? If not, who will put the genie back in the bottle?

### **Challenge 5: The risks ahead.**

Next, central banks must try to assess the big risks ahead, What big unforeseen events could cause a financial calamity? How can we brace the financial system? Central banks do not seem to do anything like the kind of contingency planning military planners do. They should. The financial, euro, and covid crisis teach us: Do not disparage big, unlikely, unforeseen events!

To get you thinking I start with a list of potential financial calamities. Each of these will be sparked by some real crisis, so keep picture that in mind. I focus here on internal problems that are too often overlooked rather than external asset classes that might blow up. Add those.

What happens when central bank credit risks go belly up? In the end credit risk must end up with taxpayers, but how will that happen without financial chaos?

Sovereign risks. Italy could default. US states and localities and pensions could default. There could be a massive emerging market bond run. Are you ready?

Advanced country sovereign risk. The US is now at 100% debt to GDP ratio, and we seem to increase it by about a third with each crisis. This cannot go on, especially with unreformed long-term finances. What happens in the next crisis, when the US needs \$5 trillion for bailouts and stimulus, \$10 trillion to roll over debt, and markets say no? What happens if an interest rate doom loop breaks out? What happens when Congress decides that paying checks to voters is more important than paying debts to Wall Street fat cats and Chinese central bankers, and institutes an emergency 20% haircut on US debt? What happens to the financial system if the US *cannot* borrow to prop up prices, bailout and stimulate and nobody wants US debt? It can't happen you say? Did you foresee a pandemic? Advanced country debt and currency crises have happened before. Don't count on trends to continue for no reason.

Here I have some concrete advice. First, get credit and sovereign risk off central bank balance sheets and on to Treasury balance sheets, where in the event of collapse it transfers visibly to taxpayers, and where politically accountable authorities acknowledge credit risk and implied subsidies.

Second, remember that "financial crises are everywhere and always caused by problems related to short term debt!" All the crisis dynamics of sovereign debt would vanish if governments were financed by long term debt, not rolling over short term debt. I like perpetuities, but you don't have to go that far. Encourage long term financing.

Super long term debt markets either don't exist or are not liquid, you complain. Make them deep and liquid! The first task of central banks, starting with the bank of England in 1694, is to create a liquid market in long term government debt! A liquid market in long dated swaps would likewise let Treasuries avoid interest rate doom-loop crises.

Don't make matters worse! When treasuries issue long, and central banks buy up that debt, issuing overnight reserves, they shorten the maturity structure of debt. Borrow with fixed rather than floating rates.



But mostly I am here to point out challenges rather than offer specific answers, and by example I only want to suggest that there are answers.

### Challenge 5: Risks

What big unforeseen risks could cause financial calamity? How to prepare the financial system? The covid lesson — it can happen!

*Financial risks* (results of the next big shock)

- Credit risks for central bank portfolios
- Sovereign risks (Italy, US states)
- US, advanced sovereign risk. (An utter calamity)
- Central Banks?
  - Swap risks to Treasuries
  - Encourage long-maturity sovereign debt! CB's first job (1694!).
  - Don't make matters worse! Fixed rate financing.

*Events* (sources of the next big shock)

- A real pandemic — 20% death rate. Bioterror? Crop pandemic.
- War. China? Russia? Middle east? Nuclear?
- Cyber. ATMs dark. Rumor that Citi is hacked.
- Political unraveling. US constitutional crisis.
- EU breakup.

• In this context, ECB, BoE, BIS, IMF examine 1 and only one risk...



Think now a bit about the events which could spark financial challenges. What if we have a real pandemic? This was just the fire drill. Plague, cholera, typhus, influenza, smallpox ravaged Europe and the world. A bug is out there that kills 20% or more of the people it infects. Terrorists or terroristic regimes could engineer such a bug; a dandy way to hold the world hostage. Are you thinking about the financial calamity this would cause? What if a bug kills half the worlds' crops?

What if China invades Taiwan? What if Russia.. you fill in the gaps. What if the middle east explodes? What if it involves nuclear weapons, which it likely will?

What if — when, sometime this century—the credit card machines all go dark? Imagine just a rumor that Citi has been hacked and accounts emptied— and everyone goes to get cash now.

Political unraveling. What if the US enters a constitutional crisis? It's closer than you think. Oh, it only happened once before?

EU breakup. The Brits left. Others may leave. Internal conflicts may spike. What then for the ECB, the euro, and the European financial system?

A central bank should be war-gaming these and more. Each is unlikely. But one or more of these — or something similar I haven't thought of — is almost sure to happen in the next century.

Which brings me to a great puzzle. In this context why are the ECB, BoE, BIS, IMF consumed with one and only one "risk"... climate?

## Challenge 6. Climate, Mission creep, and Politicization risk.

I think this adventure is a dangerous mistake.

Disclaimer: I do not argue that climate change is fake or unimportant. None of my comments reflect any argument with scientific fact.

The question is whether the ECB, other central banks, and international institutions such as the IMF, BIS, and OECD should appoint themselves to take on climate policy, or other important social, environmental or political causes, without a clear mandate to do so from politically accountable leaders.

Moreover, the ECB and others are not just embarking on climate policy in general. They are embarking on the enforcement of one particular set of climate policies — policies to force banks and private companies to de-fund fossil fuel industries, even while alternatives are not available at scale, and to provide subsidized funding to an ill-defined set of “green” projects.

To be concrete, I quote from Executive Board Member Isabel Schnabel’s recent speech<sup>3</sup>. I don’t mean to pick on her, but she expresses the climate agenda very well, and her speech bears the ECB imprimatur. She recommends

First, as prudential supervisor, we have an obligation to protect the safety and soundness of the banking sector. This includes making sure that banks properly assess the risks from carbon-intensive exposures...

Let me speak out loud the unclothed emperor fact: *Climate change does not pose any financial risk*, at the 1, 5 or even 10 year horizon at which one can conceivably assess the risk to bank assets.

“Risk” means variance, unforeseen events. We know exactly where the climate is going in the next 5 to 10 years. Hurricanes and floods, though influenced by climate change, are well modeled for the next 5 to 10 years. Advanced economies and financial systems are remarkably impervious to weather. Relative market demand for fossil vs. alternative energy is as easy or hard to forecast as anything else in the economy. Exxon bonds are factually safer, financially, than Tesla bonds, and easier to value. The main risk to fossil fuel companies is that regulators will destroy them, as the ECB proposes to do, a risk regulators themselves control. And political risk is a standard part of bond valuation.

That banks are risky because of exposure to carbon-emitting companies, that carbon-emitting company debt is financially risky because of unexpected changes in climate, in ways that conventional risk measures do not capture, that banks need to be regulated away from that exposure *because of risk to the financial system* is nonsense. (And if it were not nonsense, regulating bank liabilities away from short term debt and towards more equity would be a more effective solution to the *financial* problem.)

Next, a pervasive regime essentially of shame, boycott, divest and sanction

linking the eligibility of securities as collateral in our refinancing operations to the disclosure regime of the issuing firms. ...

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<sup>3</sup> [https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200928\\_1~268b0b672f.en.html](https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200928_1~268b0b672f.en.html)

We know where “disclosure” leads. Now all companies that issue debt will be pressured to cut off disparaged investments and make whatever “green” investments the ECB is blessing.

Last, the ECB should print money directly to fund green projects:

reassessing the benchmark allocation of our private asset purchase programmes. In the presence of market failures, ...the market by itself is not achieving efficient outcomes.

Now you may say, “climate is a crisis. Central banks must pitch in and help the cause. They should just tell banks to stop lending to the evil fossil fuel companies, and print money and hand it out to worthy green projects.”

But central banks are not allowed to do this, and for very good reasons. A central bank in a democracy is not an all-purpose do-good agency, with authority to subsidize what it decides to be worthy, de-fund what it dislikes, and to force banks and companies to do the same. A central bank, whose leaders do not regularly face voters, lives by an iron contract: freedom and independence so long as it stays within its limited and mandated powers.

The ECB in particular lives by a particularly delineated and limited mandate. For very good reasons the ECB was *not* set up to decide what industries or regions need subsidizing and which should be scaled back, accordingly to direct bank investment across Europe, to set the price of bonds, and and to print money to subsidize direct lending. These are intensely political acts. In a democracy only elected representatives can take or commission such intensely political activities. If I take out the words “green,” you, EU member states, and EU voters would properly react with shock and outrage at this proposal.

That’s why this movement goes through the convolutions of pretending that defunding fossil fuels and subsidizing green projects — however desirable — has something to do with systemic risk, which it patently does not.

That’s why one must pretend to diagnose “market failures” to justify buying bonds at too high prices. By what objective measure are green bonds “mispriced” and markets “failing?” Why only green bonds? The ECB does not scan all asset markets for “mispriced” securities to buy and sell after determining the “right” prices.

Here is another way to put the observation. There are two interpretations of the proposal: a) We looked evenhandedly at all the risks to the financial system, like those listed on the last slide, and the most important *financial* risk we came up with just happens to be climate. b) We want to get involved with climate policy. How can we shoehorn that desire into our limited mandate to pay attention to financial stability?

How do *you* interpret the proposal? I think it’s pretty obvious that the answer is the latter — or at least that the vast majority of people reading it will interpret it as the latter which is what counts to my point.

Feeding this perception is the central omission of this speech, and everything else I have read on the subject: any concrete description of just how carbon sins will be measured.

At face value, “carbon emitting” does not just mean fossil fuel companies, but cement manufacturers, aluminum producers, construction, agriculture, transport, and everything else that emits carbon. Will the carbon risk and de-funding project really extend that far, in any sort of honest quantitative way? Or is “carbon-emitting” just a code word to hound the politically unpopular fossil fuel companies?

In the disclosure and bond buying project, who will decide what is a green project? Already, cost-benefit analysis— Euros spent per ton of carbon, per degrees of temperature reduced, per Euros of 2100 GDP increased, is pretty shoddy in this area. By what process will the ECB avoid switchgrass, corn ethanol, high speed trains to nowhere, and other past follies? How will it allow politically unpopular projects such as nuclear power, carbon capture, natural gas via fracking, residential zoning reform, or geo-engineering ventures, which all, undeniably, scientifically, lower carbon and global temperatures; or adaptation projects which undeniably, scientifically lowers its GDP cost? Actually, where is this analysis for the program? Before embarking, I challenge the ECB to transparently calculate just how many degrees this plan will lower global temperatures, and how many euros of global 2100 GDP it will raise. How will the ECB resist political pressure to subsidize all sorts of boondoggles? If the central bank does not have and reveal neutral technical competence at making this sort of calculation, the project will be perceived as simply made up numbers to advance a political cause. And *all* of the central bank's activities will be then tainted by association.

*This will end badly.* Not because these policies are wrong, but because they are intensely political, and they make a mockery of the central bank's limited mandates. If this continues, the next ECB presidential appointment will be all about climate policy, who gets the subsidized green lending, and who got de-funded, what the next set of causes is to be, not interest rates and financial stability. Board appointments will become champions for each country's desired subsidies. Watch US supreme court appointments for a preview. Countries and industries that lose out will object. This is just the sort of thing that prompted Brexit.

If the ECB crosses this second Rubicon — buying sovereign and corporate debt was the first — be ready for more. The IMF is already pushing redistribution. The US Fed, though it has so far stayed away from climate, is rushing to “inclusive” employment and racial justice. There lots of problems in the world. Once you start climate policy, and so obviously break all the rules to do it, how can you resist the clamor to de-fund, disclose, and subsidize the rest? How will you resist demands to take up regional development, prop up dying industries, subsidize politician's pet projects, and all the other sins that the ECB is explicitly enjoined from committing?

A central bank that so blatantly breaks its mandates must lose its independence, its authority, and people's trust in its objectivity and technical competence to fight inflation and deflation, regulate banks, and stop financial crises.

A positive piece of advice: Go ask for an expanded mandate. If the EU explicitly tasks the ECB with implementing carbon policies via defunding, bank regulation, and subsidized investment, all of my objections vanish. An explicit mandate to address climate, and only climate, would also help the ECB to defend against the coming demand that it move on to every other problem.

## **Summary**

The western world faces a crisis of trust in our institutions. And that crisis is fed by a not inaccurate perception that the elites who run our institutions don't know what they are doing, are politicized, are expanding actions beyond the authority granted by accountable representatives.

Trust and independence must be earned, by evident competence and institutional restraint.

Yet central banks, not obviously competent to target inflation with interest rates, floundering to stop financial crisis by means other than wanton bailouts, not beginning to address obvious risks lying ahead, now want to determine and implement their own climate change policy? (And, next to move into inequality and social justice?)

We don't want the agency that delivers drinking water to make its list of socially and environmentally favored businesses, and start turning off the water to disfavored companies. Nor should central banks. Provide liquidity, period.

Yes, there is a popular movement that wants all institutions of society to jump in to the pressing social and political goals of the moment, and the heck with boring legalities. But I hope everyone in this room understands those constraints are essential for a functioning democratic society, for functioning independent technocratic institutions, and incidentally for making durable progress on the important social and political goals.

Central banks must be competent, trusted, narrow, independent, and boring. A good strategy review should refocus central banks on their core narrow mission, and let the other institutions of society address big political causes. Boring as that may be.