

RBA RESEARCH CONFERENCE, JUNE 2022

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***FISCAL, MONETARY AND MACROPRUDENTIAL REGIMES: INCENTIVES-VALUES
COMPATIBILITY IN CONSTITUTIONAL DEMOCRACIES***

I have been asked to write something about the appropriate institutional structure for monetary, macroprudential and fiscal policies in an environment of persistently low interest rates. That is one important plausible scenario the macroeconomic regime needs to be capable of coping with, but not the only one as we are being reminded by recent inflationary cost shocks and excess demand. There are others too, such as banking crises.

At a high level of abstraction, we can say two things about institutions in general, and so about policy regimes. First, they must be incentive compatible for the key actors; incentive-compatible things happen, incentive-incompatible things do not. Second, they must be values compatible, by which I mean that they must be compatible with the deep political values that animate a state's highest-level institutions. Otherwise, economic institutions will not be resilient in the face of disappointments, setbacks and unreasonable demands.

Adding a legitimacy test to economists' more familiar mechanism-design demands means addressing the division of labour between elected and unelected power. It cannot simply be a case of allocating the various parts of a benign social planner's optimal plan to whichever organs of the state are most capable of executing each of them. That banal thought matters because central banks' latent capabilities are extraordinary.

Minimalist versus maximalist central banking

Those capabilities are rooted in what a central bank *is* --- elementally, and so prior to objectives and constraints. It is a machine for issuing money (the final settlement asset in a monetary economy), and hence for altering the amount of money circulating in the economy via financial operations of various kinds. Those operations change the structure and/or size of the state's *consolidated balance sheet*.

If a central bank buys (or lends against) only government paper, the *structure* of the state's consolidated liabilities is altered, with monetary liabilities substituted for longer-term debt obligations. If, by contrast, it purchases (or lends against) private-sector paper, the *size* of the state's consolidated balance sheet increases, and the risk structure of its asset portfolio shifts. The latter operations might not materially alter the state's *net* risks; for example, the central bank purchasing private sector assets might remove the need for debt-financed fiscal stimulus. But the decision taker on the state's risk exposures would effectively switch from elected fiscal policymakers to unelected central bankers.

Seen thus, the question is what degrees of freedom central bankers should be granted to change the state's consolidated balance sheet, and to what ends, given they are independent: except in *de jure* states of emergency, insulated from quotidian politics by virtue of control over their instruments, job security, and some budgetary autonomy (precluding annual approvals from any elected branch of government).

A spectrum of possibilities exists. A *minimalist* conception, as espoused by the late Marvin Goodfriend, would restrict the proper scope of central bank interventions to open market operations (OMOs) that exchange monetary liabilities for short-term Treasury Bills, in order to steer the overnight money-market rate of interest with the objective of maintaining price stability.¹ At the effective lower bound for nominal interest rates, the only instrument available to the central bank would be to talk down expectations of the future path of the policy rate: "forward guidance", as it has become known (see below). The

¹ There are problems with construing monetary policy in terms of OMOs, but that is how Minimalists like to frame their doctrine.

lender of last resort (LOLR) function would, meanwhile, be restricted to accommodating shocks to the aggregate demand for central bank (base) money, and so plays no role in offsetting temporary problems in the distribution of reserves amongst banks. When the money markets were disfunctional, solvent banks would simply go into bankruptcy if they could not acquire reserves via the central bank's OMOs.

At the other, *maximalist* end of the spectrum, the central bank would be given free rein to manage the state's consolidated balance sheet, which in theory would even include writing state-contingent options with different groups of households and firms,² and setting Pigouvian taxes to deter social ills of various kinds. That would take central banks very close to *being* the fiscal authority, and cannot be squared with the values of constitutional democracy.

Once that is admitted, the question is how to keep central banks on the 'right side' of a blurred line between monetary policy and fiscal policy. As implied by the quotation marks, this is a matter of *convention*; it does not find its roots in positive economics, natural law or some inalienable essence of central banking. We live in a world where, in a deep sense, there are not pure realms of 'fiscal policy' and 'monetary policy' but, rather, choices about how to separate what is controlled by, respectively, elected and unelected policymakers.

The problem is not unique to monetary policy but whatever principles should constrain the set of decently available options for unelected power in general, it is not easy to make them stick in central banking.

The Only Game in Town problem

That is due to a costly strategic tension between elected policymakers and unelected central bankers. The former have wide powers, are subject to few

² The Bank of England's founding statutes would permit that, so long as it was not commerce (broadly, for profit).

constraints and have equally few legal obligations, whereas the latter have legal mandates that limit their powers to a greater or lesser extent but, importantly, also create obligations: to strive to deliver their statutory mandate (a trope for the Draghi ECB). Here is how the strategic interaction between the two kinds of actor plays out.

Imagine a very nasty shock hits the economy. The politician and central bank meet and agree that the best response combines fiscal and monetary stimulus. The central banker leaves the room. The political advisors to the politician immediately launch into a catalogue of the political obstacles in her/his way: they must carry cabinet colleagues, a majority in the assembly, donors, media backers, the party base, and so on. The minister, ground down by this litany of political transaction costs, asks what will happen if, after all, they do not act? The central bank will do more, cry the advisors; and they are correct. This has the structure of a Stackelberg game: elected government, moving first, can sit on its hands safe in the knowledge that the central bank will be obliged by its mandate to try --- including innovating within the legal limits of its powers --- to cure the problem on its own. The upshot can, of course, be a flawed mix of monetary, fiscal and structural policies, creating avoidable risks in the world economy and financial system. That is the story of the past decade.

But the predicament is not static. Once the strategic dynamic has been exploited sufficiently frequently or materially to become obvious to both actors, all sorts of new possibilities open up. On the one side, a politician who starts by leaving macroeconomic stimulus to the central bank can move onto leaving various Pigouvian taxes to it. After all, the politicians say, if the central bank can steer credit to support economic recovery, surely they can --- and therefore should --- steer credit towards good causes, and away from bad ones. On the other side, being the only game in town can become intoxicating: think of Greenspan being described as Maestro, or of central bankers as the only grown-ups in the room, or the only power-holders capable of acting decisively. This is only human: relief at burdens shed, pleasure at acclaim. Except, of course, part of the point of independence --- as commitment technology --- was to insulate an actor who, far from seeking

acclaim, would *not* be deflected by brickbats and unpopularity from maintaining price stability.

Incentives: making central bank independence work

That brings us to incentives, and the conditions for independence to work. The standard argument is rooted in the time-inconsistency problem made famous, analytically, by Kydland and Prescott.³ The argument is plausible enough intuitively: even assuming elected politicians consistently prioritise the electorate's aggregate welfare, they will sometimes exploit any short-term trade-off between economic activity (or jobs) and inflation, leading to higher medium-term inflation expectations without improving long-run output. When features of the real world are introduced — notably, the tendency of politicians to flip flop in their policy preferences — the arguments for not leaving monetary policy in elected hands are fortified.

There is also a different kind of argument for independence, a constitutional one. Since the monetary levers are always latently instruments of taxation (through surprise inflation or deflation), the last people who should hold them are the members of the elected executive (prime ministers, finance ministers, and so on) since that would violate one element of the separation of powers that lies at the heart of both the history and principles of constitutional democracy: that taxation should be approved by a representative assembly of some kind.⁴

But those are both arguments — welfarist, or constitutionalist — for not leaving executive government free to run monetary policy. They say nothing about why delegation to an independent body will work. Take, for example, a Rogoffian conservative central banker: why wouldn't the politicians appoint someone who looked "conservative" but, when it came to it, wasn't, because

³ Kydland, Finn E., and Edward C. Prescott. "Rules Rather than Discretion: The Inconsistency of Optimal Plans." *The Journal of Political Economy* 85, no. 3 (1977): 473–92.

⁴ *Unelected Power*, chapter 12, pp.287-92. When I first discussed this with the late Alberto Alesina, he was kind enough to say that he had not come across this argument before, and agreed with it.

in fact they were an ally. Or a Walshian contract: why would the politician choose to enforce the contract if they benefitted from a boom; and since they might not enforce it, why wouldn't inflation expectations reflect that?⁵ Both prescriptions are vulnerable to the time-inconsistency problem merely being relocated, as pointed out at the time by Ben McCallum.⁶ This poses a challenge to Larry Summers' important statement at the beginning of the 1990s that:⁷

Institutions [can] do the work of rules, and monetary rules should be avoided; instead, institutions should be drafted to solve time-inconsistency problems.

How, exactly, can institutions do the work of rules? What does that depend on? After all, the relocated commitment problem afflicts even the Kydland-Prescott paper's advocacy of rules: why would anyone stick to the rule? Identifying a well-crafted rule that would be best (even optimal) if people stuck to it is not much use if, once humanity is allowed in, it will be set aside.

Prestige and esteem, but for what?

Here we can turn to insights on incentive-compatible institutions. If delegation is to do its work (and so be worth any legitimation convolutions), it needs somehow to harness the incentives of the regime's stewards, and its overseers, who are all flesh and blood men and women.

Illumination comes, I think, from some papers by Alesina and Tabellini.⁸ They posit a choice between a politician (who targets aggregate welfare) and a technocrat (who is motivated by the esteem accruing to them if they deliver on a delegated mandate). Armed with that distinction, it becomes rational to

⁵ Rogoff, Kenneth. "The Optimal Degree of Commitment to an Intermediate Monetary Target." *Quarterly Journal of Economics* 100, no. 4 (1985): 1169–90. Walsh, Carl E. "Optimal Contracts for Central Bankers." *American Economic Review* 85, no. 1 (1995): 150–67.

⁶ McCallum, Bennett T. "Two Fallacies Concerning Central Bank Independence." *American Economic Review* 85, no. 2 (1995): 207–11.

⁷ Summers, Lawrence. "Price Stability: How Should Long-term Monetary Policy Be Determined?" *Journal of Money, Credit and Banking* 23, no. 3, Part 2: Price Stability (1991): 625–31.

⁸ Alesina, Alberto, and Guido Tabellini. "Bureaucrats or Politicians? Part I: A Single Policy Task." *American Economic Review* 97, no. 1 (2007): 169–79.

delegate some kinds of task to the technocrat. The authors say something about the particular conditions that must hold for that to make sense, but do not step back to address the wider necessary preconditions, which I attempted in *Unelected Power* (chapters 5 and 6).

One is that the political society must be capable of bestowing esteem; an apparently innocuous point that has some punch. If the only measure of prestige in a particular society is, say, wealth or perceived closeness to the ruler, delegation is not going to work. This precondition amounts, therefore, to a society needing to have multiple sources of prestige if monetary independence is to work (a point that I suspect does not find its way into IMF recommendations to a good chunk of the world).

A second precondition, which gets close to the bone today and opens up an illuminating perspective on central banks taking on more and more functions, is that appointed central bank leaders need to care (a lot) about the prestige accrued from delivering the mandate, or foregone if they do not. Milton Friedman was half onto something, but not what he thought, when in the early-1960s he claimed: “the two most important variables in [central bankers’] loss function are avoiding accountability on the one hand and achieving prestige on the other.”⁹ What he missed is that exposing oneself to accountability can help deliver prestige.

At this point, it is useful to unpack where those personal returns might come from. There are two sources: professional esteem from a dispersed community of current and former central bankers, monetary economists and other specialists; and, separately, wider public prestige from the political community itself (households as voters, but also associations of households, including in the business and financial communities). Delegation works to harness central bankers only if they do care about such esteem and prestige.

⁹ Letter from Milton Friedman to Stan Fischer, quoted in Fischer, “Rules versus Discretion in Monetary Policy” (p.1181). In *Handbook of Monetary Economics Volume II*, edited by B. M. Friedman and F. H. Hahn. Amsterdam: Elsevier Science Publishers, 1990.

Now imagine a central banker who has a public reputation for combatting, say, climate change and inequality, and other social justice causes. Maybe if (steady state) inflation rises under their watch, they won't much care about ignominy from those who care about inflation (the *Bild* newspaper in Germany, say) because their standing in the world is buttressed by their social-justice credentials, and because perhaps they don't much care about the opinion of former central bankers and monetary economists since s/he has never really been part of that professional-cum-epistemic community. Alternatively, imagine a central banker whose key constituency of political supporters cares most about lax regulation that permits their donors to thrive: a kind of libertarian conservatism. In either case, and plenty of others, the price-stability harness is not going to be tight enough to underpin delegation's warrant.

Independence's vulnerabilities: esteem and prestige for too much

That account opens a window onto how independence can be undermined. Here is how I put it in a piece for the IMF a couple of years ago:¹⁰

“It is important to remember that there have always been enemies of independence. Within a rich repertoire for undoing an economy's monetary constitution, they can deploy two broad strategies, each with obvious and opaque variants.

One way to bring central banks to heel is through appointments. As seen recently in the United States, that is not easy when favored candidates fall well short of the normal credentials. More troubling are appointees who seem reasonable, excellent even, but turn out to be discreetly committed allies of leading politicians. The most famous case, also during turbulent times, is the former Fed chairman Arthur Burns, a leading economist who put Richard Nixon's 1972 reelection prospects ahead of the Fed's statutory mandate. No one should think that was the last example of a political outsider occupying the monetary corridors.

The other way to undermine independence is through a change in mandate. The crude variant involves simply voting to compromise or repeal the central bank law. That isn't easy, because it is highly visible. The subtle, almost paradoxical, strategy gives the central bank *more* responsibility—so much so that any decent official would feel duty bound to consult political leaders on how to use their extensive

¹⁰ Tucker, “On Central Bank Independence”, *Finance & Development*, IMF, June 2020.

powers. The more central banks acquiesce (even revel) in the “only game in town” label, the easier it becomes for politicians to give them more to do, and so undo them.”

Unelected Power's analysis suggested those two strategies are intertwined. Independence is undermined by widening the mandate and appointing someone who cares more about those other causes (or, more accurately, the social prestige they can achieve from championing those causes) than about the respect and standing that would come from delivering monetary stability.

That morphology of central bankers' incentives and interests underlines the importance of some welfare-oriented principles for the design of independent central banks. First, their functions and responsibilities must be as narrow as possible, as otherwise their leaders have too many routes to esteem and prestige.

Second, they need objectives that can be understood and tracked by interested members of the public, so that their personal ambitions cannot be achieved by self-declaratory success. Precisely because the price-stability objective is framed as a quantified target for inflation (typically 2%), observers can see that outcomes are currently miles away from target, and the central bankers are accordingly taking a lot of public heat, personally.

Third, there needs to be transparency in policy regimes, discretionary instrument settings and explanations of them. While supposedly commonplace these days, that might be questioned if the explanations are elusive or deceptive. Over the past six months or so, we have been encouraged by the main central banks to think that they are tightening policy, whereas in fact it seems likely that policy has still been stimulating aggregate demand. In other words, policy has been tightened in the sense of being less loose, but not in the sense of restraining demand: an elision of changes versus levels. *If* they have been stimulating demand, they need to explain why. One possibility is that they are still committed to believing the “transitory inflation” story. My point is

not that such a policy stance would definitely be a mistake (a separate question I do not address here), but that lack of candour would be both a mistake (discussed further below) and wrong.

Monetary-system stability and “safe assets”

That account of some of the necessary conditions for independence to work tells political communities to be careful about what central banks do but not what they should do. My way into that is to ask what the monetary authority cannot avoid doing (or being), and my answer is that they cannot avoid being the lender of last resort or, as I prefer, the economy’s liquidity reinsurer.¹¹

This poses two questions: whom should they reinsure, and what activities and responsibilities are entailed by being the liquidity reinsurer? My answers, broadly, are: whoever provides liquidity services in the form of issuing “safe assets”; and whatever is needed to ensure the private monetary system is resilient, taking into account what other authorities can commit to doing autonomously without leaving central bankers in the dark.

Safe assets

To be used as money, an asset needs to be regarded as safe (a store of value) and easily transferable (a medium of exchange). Safety means neither regular people nor workers in financial intermediaries spend time thinking about an instrument’s credentials; they are taken for granted, helping to underpin liquidity. Economists call this information insensitivity, with money the canonical example.¹² Short-term claims on sound governments can also have that characteristic, which was central to Britain’s 18th century financial revolution; as Hume observed, “Public securities are with us become a kind of

¹¹ *Unelected Power*, chaps 20 and 21.

¹² Holmstrom, Bengt, “Understanding the Role of Debt in the Financial System.” BIS Working Paper no. 479, Bank for International Settlements, Basel, January 2015.

money.”¹³ Today that drives the utility of government-bond repo markets, which remove the interest-rate exposure in holding a longer-term default-free bond.

Away from public finance, modernity’s engine for supplying safe assets has been the banking industry: the balances held in commercial banks’ on-demand checking accounts comprise most of the money we use. But there are regulatory and market constraints on the size of individual bank balance sheets, frictions in raising equity and barriers to entry, so the banking system cannot always frictionlessly meet demand for safe (very low risk, easily transferable) instruments. Unsatisfied demand for safe assets brings forth myriad other mechanisms for synthesizing safety from bundles of risky assets.

While banking is itself a variant of that alchemy, it goes much wider. Safety is found not only in uninsured bank deposits, but also in money fund units, repos in risky instruments, the upper tranches of many securitizations, “stable coins” and much more. Some seek to assure us of safety with diversification and over-collateralisation, others by presenting themselves as backing their liabilities exclusively with safe assets.

At this point, of course, the safety of “safe assets” becomes moot. When some revelation shatters the illusion, there is a run for the exits, and supposedly safe assets become, in a flash, illiquid or, worse, worthless; stable coins become unstable. Where the issuers of any such unsafe “safe asset” are large, individually or in aggregate, and where they play an important role in providing financial services to the economy (supply of credit, risk-transfer, or payments and settlement-services), the social costs of the switch in perceptions can be significant. Faced with such disasters, the state tends to step in to render the assets (or at least their holders’ claims) safe after all, even when government said it would not do that. The vehicle for such state action is, often as not, the central bank.

¹³ Hume, David, “Of Public Credit,” in *Political Essays* (p. 168), edited by Knud Haakonssen. Cambridge: Cambridge University Press, 1994.

Monetary system stability

Why should that be so? The reason is elemental. Privately generated safe assets present themselves as a substitute --- invariably, a slightly higher yielding one --- for public money. The central bank must accommodate sudden jumps in demand for its money (the economy's ultimate liquid, safe asset) if it is to avoid inadvertent restraint on economic activity. The most dramatic jumps in demand come in the form of runs on banks and, we have painfully learnt (more than once), on other issuers of assets widely treated as safe .

When the central bank acts as the lender of last resort (LOLR), it is therefore both stabilizing the private part of the monetary system (banking, broadly defined), and ensuring that the liquidity crunch does not interfere with the course of monetary policy. It should not be surprising that these two ends are conterminous: our societies have accepted monetary arrangements that truly comprise a *system*, in which most of the money used in the economy is privately issued but accepted as such only because it can be exchanged for central bank money.

As put, that could be consistent with the minimalist conception of central banking which, recall, entails LOLR assistance being limited to offsetting aggregate demand-for-money shocks via OMOs. But this is misleading. The central bank will lend to individual (sound) private monetary institutions even where, strictly, there is no aggregate shortage of central bank money, because it would be madness to allow some banks to collapse simply because money markets have seized up or because other banks flush with cash will not lend to them.¹⁴ It is madness not to address severe problems in the distribution of central bank reserves because the social costs of (avoidable) bankruptcy are not negligible. In consequence, central bank balance sheets can never be the pristine thing that a purist minimalist conception assumes.

¹⁴ This is one reason it is better to think of monetary-operating systems in terms of a corridor (where the central bank is the marginal actor on both sides of the overnight money market).

We should, then, think of central banking's mission as *monetary system stability*, with two components:

- stability in the value of central bank money in terms of goods and services; and
- stability of privately issued deposit money and other safe assets in terms of central bank money.

Central banks' involvement in prudential policy

What does the second leg entail? Being the liquidity reinsurer has dramatic effects on where and when the central bank crops up in a country's economic life. As LOLR, it is pretty well certain to find itself at the scene of a financial disaster. That being so, central banks have an interest in being able to influence the private part of the monetary system's regulation and supervision. As Paul Volcker so rightly said at the beginning of the 1990s, with tragic foresight:¹⁵

I insist that neither monetary policy nor the financial system will be well served if a central bank loses interest in, or influence over, the financial system.

As it happens, in the run up to the 2007/08 crisis, the central banks of the world's two most important financial centres did lose interest in the financial system (the Fed story), or influence over it (the Bank of England's). They rediscovered their genealogies when, from the summer of 2007, they again acted as lenders of last resort.

At the most basic level, when central banks lend, they want to get their money back, so they need to be able to judge which banks (and possibly near-banks) should get access to liquidity, and on what terms. Even opponents of 'broad central banking' generally accept that, as the lender of last resort, the central

¹⁵ Volcker, Paul. "The Triumph of Central Banking?" The 1990 Per Jacobsson Lecture, Per Jacobsson Foundation, 1990.

bank cannot avoid inspecting banks that want to borrow. Events in the UK in 2007 demonstrated that doing so from a standing-start is hazardous for society.¹⁶ A central bank must be in a position to track the health of individual banks during peacetime if it is to be equipped to act as the liquidity cavalry; and if it is to be able to judge how its monetary decisions will be transmitted, via the financial system, into the economy.

My argument is that, subject to constraints I shall only sketch here, central banks can legitimately be the micro-prudential supervisor, not that they *must* be. In some jurisdictions, for example Germany and Japan, the LOLR's imperatives are reflected in a set-up where the central bank conducts inspections of banks, but does not take *formal* regulatory decisions. Former Bundesbank President Helmut Schlesinger once told me this avoided the Bundesbank's reputation and standing as a monetary authority. That is, of course, a dreadful argument, and not only because lots of Bundesbank staff work on supervision.¹⁷

But the prevalence of unrespectable arguments does not mean there are not respectable ones for housing supervision outside the central bank, as here in Australia. One necessary precondition for separation to work is that information should flow frictionlessly between the two organizations. Those conditions had not remotely held in Britain after 1997, and we had no confidence they would do so after the Global Financial Crisis.¹⁸ If they do hold in Australia, you have something in your government culture to celebrate, but must keep track of whether the relationship deteriorates.

¹⁶ After the collapse of Northern Rock in 2007, the front cover of the British edition of the *Economist* magazine was a photograph of the then Governor of the Bank of England under the headline "The Bank that failed": *Economist*, 20 September 2007. Not a triptych of central banker, regulator and finance minister --- the members of the UK's then Tripartite Committee for stability --- but the first only. Supervision and regulation being formally and practically at arm's-length could not insulate the reputation of the UK monetary authority from prudential problems, as some had naively argued when supervision was moved away from the Bank in 1997 (a view that was unpopular until it was too late).

¹⁷ On Bafin's routine reliance on Bundesbank (Buba) supervision: section 7(2) of the German Banking Act. For a healthily open discussion of Buba's active role: Dombret, Andreas. "What is 'Good Regulation'?" Speech at the Bundesbank Symposium "Banking Supervision in Dialogue?", Frankfurt, 9 July 2014.

¹⁸ For good reasons: even after the legislation returning supervision had been passed, the supervisors withheld some information until it came into force.

Where, however, a central bank *is* involved materially in supervision and regulation, whether alongside other agencies or alone, whether micro or macro, our political values demand that their role should be formalized, through a legislated mandate, objective, and powers.

Values: delegation principles for independent agencies

The key output of *Unelected Power* is a set of precepts, proposed as political or constitutional norms for healthy constitutional democracies, constraining the delegation of discretionary power to central banks and other formally independent agencies. The idea behind them is that to avoid people passively resisting or actively seeking to undermine the system of government, even in the face of shocks and disappointments, the institutions of government need to square with a political community's deep values.¹⁹ Practically, that must mean the values instantiated in our highest level political institutions: the values of the rule of law, constitutionalism, and democracy.

Since different members of a political community will justify those values in different ways, and with different weights, a policy regime delegated to an independent agency must live up not only to liberal values policed by the modern judiciary but also to our republican values, among others. Thus, if the instrumental purpose of delegation to trustee-like agencies is to help the democratic state deliver better results by sticking to the people's settled purposes, then *the people's* purposes had better be known, and determined by some process that has deep legitimacy: the same destination as our Welfarist argument for credible commitment. In addition, our political values mean we should avoid delegating power to an agency with a single policy maker. Not just because open committee discussions among equals can produce better results, but also because concentrated power is alien to our traditions of government.

¹⁹ This implicitly takes a position on the meaning and significance of legitimacy: for an explicit account, see the introduction to Part II of *Unelected Power*, pp.147-163.

The Principles for Delegation

Without justifying all of them here, the following summarizes some of the *Principles for Delegation*:²⁰

- 1) Independent agencies should pursue a mission that enjoys broad public support.
- 2) Above all, they should have clear, monitorable objectives set by elected representatives of the people.
- 3) They should not be given mandates or powers that entail making big distributional *choices* or big value judgments on behalf of society
- 4) They should make policy in committees, comprising members with long, staggered terms (which they are expected to serve), and operating via one person-one vote
- 5) Their policy choices should not interfere with individual citizens more than warranted to achieve their statutory purpose (proportionality)
- 6) The provisions of such delegations should, in the usual course of things, be laid down in ordinary legislation, and only after wide public debate; and they need subsequently to become embedded through ongoing public familiarity and support (prescriptive legitimacy)
- 7) Governments and legislatures should articulate in advance, and preferably in law, how (if at all) an independent agency's powers to intervene in an emergency would be extended, but any such extensions should not compromise the integrity and political insulation of its core mission
- 8) There should be sufficient transparency to enable the stewardship of delegated policymaker and, separately, the design of the regime itself to be monitored and debated by elected representatives. In particular.
 - The agency should publish principles for how it plans to exercise discretion within its boundaries
 - It should publish data that enables *ex post*

²⁰ For the *Principles* in full, see the Appendix of *Unelected Power*, pp.569-572. See chapters 8, 9 and 11 (especially pp.267-8) for how our political values demand an elaboration of the requirements of a purely Welfarist analysis (chapters 5 and 6).

evaluation of its performance, and research on the regime

- 9) An independent agency should be given *multiple missions* only if:
 - they are intrinsically connected,
 - each faces a problem of credible commitment, and combining them under one roof will deliver materially better results;
 - each mission has its own monitorable objectives and constraints;
 - each mission is the responsibility of a distinct policy body within the agency, with a majority of members of each body serving on only that body and a minority serving on all of them.
- 10) The legislature should have the capacity, through its committee system, properly to oversee each independent agency's stewardship and, separately, whether the regime is working adequately.
- 11) The agency should be independent of any industry it regulates.
- 12) An ethic of self-restraint should be encouraged and fostered.

Monetary, macroprudential and fiscal regimes

Against that background, I will address the different components of our hosts' question about the institutional structure for monetary, macroprudential and fiscal policies. Some of my answers are driven by macro-financial economics, some by political economy (incentives), and some by constitutionalism (values).

Inflation targeting at the "zero" lower bound

I would stick with inflation targeting, because it is easy for interested members of the public and for their elected representatives to understand, helping to harness the policymakers to the mast.

Nominal income targeting, price level targeting and other such regimes would reintroduce the monetary Rood Screen. Only central bankers and the rest of the monetary priesthood would see the mysteries, while the public would be left to take on trust why revisions to the target didn't really change anything (remember 1980s' money-velocity shocks) or why the effects on the price level of a nasty cost shock didn't (or did) need to be offset by a recession. The Fed's new non-regime regime, meanwhile, is flawed because it is unclear even to adepts (including possibly those who wrote/endorsed it). Worse, it was addressed to the topic of this conference without making provision for what would happen if "low for long" collided with some large cost shocks or a massive positive shock to aggregate demand.

In the same vein, I still think a lexicographic objective is best: stabilize the path of economic activity subject to maintaining inflation expectations anchored to a target. The Fed got itself into a mess signalling that they would take risks with inflation while running the economy "hot". This was taken by many, in particular on the political left, to signal that the Fed no longer believed there was a short-term trade off (as opposed to not quite knowing where it would bite), and even that they were moving towards rejecting the idea that money is neutral over the long run (long seen by some as part of a "neoliberal" plot). A lexicographic objective is consistent with the purpose of delegation to an independent body --- providing commitment technology for a nominal anchor -- while allowing central bankers to look through cost shocks (provided medium-term inflation expectations are in line with the target).

An unchanged inflation-targeting regime is, however, uncomfortably exposed to leaving the policy rate stuck at the "zero" lower bound.²¹ Unless either fiscal policy becomes more active or the inflation target is raised (see below), this means continuing to rely heavily on Forward Guidance (FG) and Quantitative Easing (QE).

²¹ I refer to the "zero" lower bound as shorthand for the effective lower bound for policy rates. Some central banks, notably the ECB, have operated with a modest negative rate. I do not discuss negative policy rates here because no central bank seems ready to set large negative rates (say minus 4 or 5%) in an attempt to break out of the constrained policy space problem.

Forward guidance as deferred pain

Public and even financial market understanding of “forward guidance” is something of a mess. This is because, despite a few efforts, policy makers have not used different words for, on the one hand, pledging to keep rates low for long as a commitment device when their current policy rate is stuck at the zero bound, and, on the other hand, predicting or signalling what path of rates they are likely to choose when no longer so constrained.

The most obvious reason for this elision is that policymakers have come to think they can rely on expectations of future policy settings. Thus, even in conditions of excess demand, the prevailing policy rate might continue to stimulate spending in the economy for the time being so long as the market expects future policy settings --- and hence the path of the short-term real interest rate (given the expected path of inflation) --- to bear down on demand. This kind of gradualism might appear to suit everyone, by reducing volatility in the economy and financial markets, provided the central bank is trusted to deliver. But while DSGE models might encode credibility, in fact central bankers are themselves the nominal anchor. Relying on market expectations to do the heavy lifting is a risky strategy, entailing much more volatility down the road if economic agents harbor scepticism about policymakers’ willingness to be unpopular. Sometimes (not always) policy needs a downpayment, to show you mean it; ie, more than that you will get round to it eventually. When that is so is a matter for policymakers’ judgment; one they need to be open about and cogently defend.

Seen thus, using forward guidance to defer action can sometimes be an exercise in hope: the technical hopes of staff seduced by DSGE models in the service of the political hopes of policymakers interested in promising, say, inclusive growth (a worthy objective for *elected* politicians).

Far better, I suggest, to reserve the term “forward guidance” for when the policy rate is constrained by the zero (or, with modestly negative rates,

effective) lower bound. In other circumstances, predicting --- or being widely perceived as predicting --- what one will do when one can make predictions about the economic outlook only with great uncertainty, is a mugs game. It invites one to think that policy makers are prioritising the welfare of financial market participants, by capping volatility, rather than their legal mandate. Put another way, better to talk about one's take on the economic outlook, with its attendant uncertainties and risks, than to talk about oneself. This does not preclude trying to convey one's reaction function, but that endeavour entails making state-contingent statements. Those statements will be complex, not hung on one or two key data series, given the need to weigh a wide range of data, surveys, anecdote etc: policy makers need to make judgments based on an eclectic analysis of current and prospective conditions, including signs of slipping inflation expectations. For that reason, stabilization policy requires an acquired craft --- assessing and explaining the economic conjuncture and outlook --- as well as on the background framework provided by monetary economics.

Forward guidance as a route to "groupthink"

Quite apart from the unreliability of predications-about-oneself-that-aren't-really-predictions, and the trap of giving too much weight to near-term market volatility, there is another problem. Neither variety of forward guidance is feasible unless a critical mass of a policy committee's members choose to operate as a bloc vote, but that is dire. It suppresses debate, and gives too much power to the chair (and/or key staff). That cost might be worth paying when truly stuck at the lower bound, but is not otherwise, including over the past couple of years. We might be about to see the costs of central banks having persistently emphasized low volatility today over the risk of higher volatility tomorrow.

Quantitative Easing: the monetary transmission mechanism and term premia

Conveying one's reaction function entails, among other things, conveying how (qualitatively and quantitatively) one thinks one's instruments work. This brings us to Quantitative Easing (QE). If, given no other solution to persistently low rates, QE is to be a frequently used instrument, central banks need to offer a clearer view of how it works. If via signalling, we are back to the forward guidance issues. If via compressing term premia and, perhaps, other risk premia, we need the central bank policymakers to explain why, when markets are not dysfunctional, they think that affects the path of aggregate demand, and how much. For example, why should there be much effect on investment decisions when actors can expect to earn the steady-state term premium by borrowing long and investing in the overnight (secured) money markets?

My purpose here is not to claim that QE does not work, but to argue that if central banks use it, we need to have a sense of how much a unit of QE affects their forecasts and what the mechanisms are.

QE and government debt management: coordination and design

Compressing term premia and talking down the risk-free curve are, of course, of burning interest to another government function: debt management. Whatever QE's effect, the debt manager could undo much of it by extending the duration of its issuance to lock in cheap funding. For that reason, in 2009, at the Bank of England's request, the UK government publicly pledged that QE would not affect its debt management strategy (which was sufficiently clear to be monitored). A similar agreement was not reached in the US.²²

So far, so good. But it is more complicated than that. Where, as has almost become standard, the central bank pays the policy rate of interest on banks' reserve balances,²³ and where QE purchases are maintained for many years,

²² Greenwood, Robin, Samuel G. Hanson, Joshua S. Rudolph and Lawrence H. Summers. "Government Debt Management at the Zero Lower Bound." Hutchins Center Working Papers No. 5, September 30, 2014.

²³ I introduced interest-on-reserves in the UK (2005), and I still believe that it is a useful component of a system of voluntary reserves averaging when the sole policy instrument is the policy rate.

QE entails a debt swap for government: fixed-rate issuance is swapped into funding at a floating rate. Where the quantities are vast, as they were after the covid outbreak, this is a big risk exposure for the public finances. In 2009/10 this was not an obvious or pressing issue because long yields were still reasonably high (by today's standards). By late-2019 (and so before covid), it was (or should have been) a very big issue as many already stretched governments were deprived of locking in extraordinarily cheap funding.

One possible solution would be to combine QE with a reserves system that remunerates only the marginal \$ (or whatever) at the policy rate. Something like that would still put a floor under the overnight money market rate, while sparing the public the risk exposure to avoidably high funding costs. Given excess demand in some jurisdictions and the incidence of big cost shocks, those risks are currently crystallizing. In the longer run, they imply higher taxes or lower public services for households, whereas amending the reserves regime would impose a tax on the banks. Assuming the banks are as well capitalized as policy makers say, decisions on the policy rate would need to factor in any consequent adverse shift in the supply of bank loans or deposits (and any macro effects from disintermediation).

"QE" bond purchases: distinguishing between monetary policy and MMLR

This underlines another surprising lesson from recent years. Central banks need to get back to being clear what purpose is being served when they purchase (or sell) government bonds. It might be any of stimulating aggregate demand; supporting market liquidity; getting cash to the government while markets are not functioning; getting cash to the sellers; supporting asset prices to stop intermediaries failing, and so on. Only the very first warrants the label Quantitative Easing (QE).

I believe the massive purchases in March 2020, when covid panic gripped markets, were better thought of as market maker of last resort operations, which can be warranted when, in a collective action problem, individual

dealers flee from inventory risk because they think their peers are doing so; or when, in a problem of misperceptions, they stop trading because they incorrectly doubt the credentials of the underlying instrument.²⁴ Had those spring-2020 purchases been framed as an MMLR operation, not only might much smaller purchases have been made (think of Draghi's MMLR intervention in autumn 2012), the purchased bonds could have been sold back into the market as conditions stabilized, helping governments to lock in what was extraordinarily cheap funding (a massive opportunity cost).

Instead, this episode, lasting well into 2021, and arguably creating a monetary overhang that has exacerbated current inflationary conditions, portrayed central banks as the operational arm of government financial policy. Even those who disagree with my take on the conjunctural issues surely have to concede that there are avoidable costs in describing any bond purchases as "QE" whatever their underlying purpose and circumstances.

Monetary policy and financial stability interactions

All that apart, a world of low growth and low equilibrium interest rates creates a variety of financial stability hazards. Transitionally, they include legacy long-term loans having mispriced default risk; Basel 3 was not calibrated for a persistent fall in underlying growth. They also include hazards from a myopic search for yield --- until agents grasp that risk-free real returns have declined. The first hazard is disguised and the second fuelled by overreliance on monetary policy.

Meanwhile, by removing government bonds from the market --- reducing the net supply of safe assets²⁵ --- QE fuels the production of synthesized safety. It is

²⁴ The BIS have recently issued a coy but important short note on this. For the distinction being used during the GFC, see Tucker, "The Repertoire of Official Sector Interventions in the Financial System: Last Resort Lending, Market-making, and Capital." Bank of England. Speech at Bank of Japan conference, May 27-28, 2009.

²⁵ Macroeconomists not infrequently assume QE changes one safe asset (government bonds) for another (reserves), but that is not so because only banks hold reserves. Non-bank sellers of bonds to the central bank get paid in commercial bank deposits (implying a first-round increase in broad money). It is mistaken to think

not obvious how to disentangle the search for yield from the search for safety -- - the former compressing risk premia, the latter expanding them--- but they could plainly coexist since it is important to distinguish between risky assets the market recognises as risky and those it treats as safe. Both can be delusional. When the instruments are issued by levered or liquidity-mismatched intermediaries, both dynamics can unravel abruptly.

Other things being equal, those are circumstances where a financial stability policy maker would want to raise minimum capital requirements on banks, raise minimum margin requirements in derivatives markets, and raise minimum excess-collateral requirements (haircuts) in secured-financial markets. Put another way, overreliance on monetary stimulus presents macro-prudential policy makers with the question of whether to recalibrate minimum system-resilience requirements. If, as seems to be so, it is hard to detect that having being systematically discussed by macro-prudential committees, it implies that there remains a design problem in this area.

Macroprudential policy

The first institutional question concerns the division of labour between the macro-prudential and the micro-prudential supervisor. Whether or not the micro-supervisor is housed in the central bank, I think the macro-supervisor should make the big system-oriented calls, with their micro counterpart concentrating on the health (resilience and prudence) of individual firms (and adjudicatory function) rather than the regime's overall calibration (a delegated policy function). Put another way, the job of the micro supervisor is to deter -- detect and sanction --- the moral-hazard hidden actions that affect any regulatory regime, but which in particular plague finance given its shape-shifting capabilities.²⁶

the QE mechanism works entirely through the imposition of duration mismatches, and risky to neglect its potential effects on the synthesis of private safe assets..

²⁶ Tucker, *The Design and Governance of Financial Stability Regimes: A Common Resource Problem That Challenges Technical Know-How, Democratic Accountability and International Coordination*. CIGI Essays on International Finance, volume 3. Waterloo, ON: CIGI, 2016.

The second institutional question is the objective of the regime. I hold that it should be system resilience rather than trying to manage the path of asset prices in specific markets. A house price boom with a banking system covering, say, half of its total exposures with tangible common equity (2x leverage) would be very different from the same asset-price boom with banking being 200x levered (roughly the pre-2008 position). This means that I think a lot of the current wave of macro-finance papers are orthogonal to the policy mission of central banks.

The same goes for focussing on the health of borrowers rather than the resilience of intermediaries. Concretely, that means I favour things like caps (static or dynamic) on the proportion of banks' assets represented by high loan-to-value (or income) mortgages rather than limits applied directed by central bankers to households and businesses. That is because unelected power cannot account directly to the people for the burdens imposed on them using discretionary powers.

This approach to the proper (values-compatible) scope of central banks' macroprudential powers and objectives means that the "missing regimes" problem identified after the 2008/09 crisis should have been conceived in plural not monolithic terms: there was a series of missing regimes. As well as the resilience of the system, other possible gaps include a regime for relative asset prices, another for borrower's financing rights (the best way of framing the debate about restrictions applying directly to households), and perhaps another for external vulnerabilities. Only the first --- the resilience of the private part of the monetary system --- falls naturally to central banks, for the reasons rehearsed above (receipt of liquidity reinsurance).

The third institutional question is how to frame a resilience objective, or more precisely a resilience objective that can make sense to and be monitored by politicians, media commentators, and interested members of the public. While I think that can be done, it has not yet been delivered it. This manifests itself in paucity of public discussion. In London, I know of only one outfit tracking

stability issues that does not owe its existence (income, ownership or control) to the industry. I suspect much the same, or worse, would be true elsewhere.

So I have little confidence that stability vulnerabilities in a world of low growth and low long real rates are being addressed. There seems to be nothing like the energy shown by governors Volcker and Leigh-Pemberton when the explosion of off-balance sheet finance in the early-to-mid 1980s threatened to undermine their organizations' capital adequacy policies, leading of course to Basel 1 for internationally active banks.

Regulatory mandates that independent central banks should NOT be given

By omission, I have implied that some functions-cum-responsibilities should not be delegated to central banks. *Unelected Power* listed the following:

- competition policy, which would make them more powerful than they need to be, and therefore too powerful
- the structure of the financial-services industry, as it involves high-level trade-offs between efficiency and resilience
- its external competitiveness, as that invites political pressure to relax resilience standards and adopt 'light touch regulation'²⁷
- sponsoring the industry's interests in government or in society, which would be liable to lead to capture by sectoral interests and so to lower resilience than desired
- consumer protection, which would confuse the public about the nature of broader 'stability' mandate, as well as taking most central bankers beyond their comfort zone and vocational drive²⁸
- market regulation, as it unavoidably incorporates consumer protection and, separately, would make central banks too powerful (the Fed plus SEC!).²⁹

²⁷ In a staggering move, there are currently plans to reintroduce this into the UK regime.

²⁸ It would, therefore, be good for the Fed to lose its residual consumer-protection functions.

²⁹ While the UK's 2012 reform legislation was progressing, I was urged to accept those functions into the Bank of England, but we rejected them. Later, after I had left office, I was asked why we had done this, so maybe the question came up again.

Four years on, I have to add to that list: discretionary decisions to use their balance sheets and regulations to slow climate change and promote social justice.³⁰ More generally, none of a central bank's discretionary powers should be used to pursue goals other than monetary-system stability. Thus, no discretionary use of balance-sheet or regulatory policies to set Pigouvian taxes to pursue other social goods. It would be ridiculous to try to get round that by suggesting, for example, that leaning against climate change is part of monetary policy. If that were so, an awful lot more is part of monetary policy.

Pigouvian taxes, inequality and central banking

The point, to be clear, is about discretion. If elected governments want to introduce detailed laws that constrain the recipients or terms of central banks' lending so as to effect Pigouvian taxes of various kinds, that is up to them (subject to positive-law constitutional constraints).

Nor do my suggested strictures preclude central banks from analysing the wider effects of their policies. On the contrary, it can sometimes be good to do so, in order to highlight spillovers that elected officials could choose to offset or mitigate. An example, sparked by pressure from the British Parliament's Treasury Select Committee, is the Bank of England's 2012 paper on the distributional effects of QE. Publishing such analysis might occasionally help to stimulate public debate on the costs and benefits of strategic overreliance on central banks. But it would not cure that strategic problem, the issue with which I will close.

Conclusions: a money-credit constitution, and monetary self-restraint

³⁰ Among many other reasons, I wonder whether those central bankers involving their organizations in social justice could articulate a principled, incentive-compatible account of justice that could be compelling to all points of the (respectable) political compass: that is not too much to ask, just as citizens expect a principled answer to why monetary stability matters and can be left in unelected hands.

We have been exploring the current “crisis of central banking”, as it might be termed by Marxians, who find themselves in an interesting temporary alliance with right-libertarians. My solution is what I call a *Money-Credit Constitution*. The 19th century’s gold standard offered one such monetary set up, but it was deficient in so far as it did not seek to smooth the path of output and demand (unavoidable after full-franchise democracy), and did not cater explicitly for solvency crises as opposed to liquidity crises in the private part of the monetary system.

Reflecting the importance of both incentives and values, I have been arguing towards a contemporary *Money-Credit Constitution* that would, at a schematic level, have the following five components:

- a target for inflation, with an injunction to avoid exacerbating economic volatility in the face of cost shocks (subject to medium-term expectations being anchored);
- a requirement for private parts of the monetary system --- issuers of assets treated as safe by holders and advisors --- to hold reserves (or assets readily exchanged for reserves), with reserve coverage increasing with an intermediary’s leverage/riskiness and with the social costs of its failure;³¹
- a liquidity-reinsurance regime for banks (and, under specified conditions, shadow banks), subject to not lending to fundamental bankrupt firms and funds (since that entails fiscal redistribution from long-term to short-term creditors)³²
- a resolution regime for bankrupt private issuers of safe assets; and
- constraints on how far the central bank is free to pursue its mandate and structure its balance sheet, including:

³¹ In the limit, this would require banking groups to cover 100% of their short-term liabilities with assets against which the central bank would lend. Since leaving office, both Mervyn King and I have argued publicly for such a regime. Mervyn King, *End of Alchemy: Money, Banking and the Future of the Global Economy*. London: Little Brown, 2016, chapter 7, pp. 269-281. Tucker, “Is the Financial System Sufficiently Resilient?” BIS research conference, 2018. As discussed in that paper, 100% liquid-assets cover does not obviate the need to reach a judgment on whether or not a firm has fundamental problems of solvency, and so does not remove the need for a standard of resilience. http://paultucker.me/wp-content/uploads/2018/07/tucker_paper.pdf

³² Tucker, “Solvency as a Fundamental Constraint on LOLR Policy for Independent Central Banks: Principles, History, Law”, 2014. <http://paultucker.me/wp-content/uploads/2019/04/Solvency-As-A-Fundamental-Constraint-On-Lolr-Policy.pdf>

- the central bank publishing how it would conduct any MMLR operations, including distinguishing them from QE
- a bar on monetary financing of government except in extraordinary circumstances
- not favouring particular sectors and regions over others in its balance sheet operations, including the terms of its liquidity reinsurance facilities.

To be clear, that does not cure the nasty strategic-interaction problem with elected power. Central banks cannot confront politicians but they can try, as it were, to surround them by framing the terms of public debate. Now might be a moment for them to promote debate, via research conferences, on how non-linear automatic fiscal stabilizers might be designed for severely adverse scenarios. If that is a fool's errand, it might also be a moment for contemplating higher inflation targets, although that should probably be deferred until we see where long rates settle once QE is unwound. Given the vital importance of credibility, however, it would have been easier to raise the target from a position of strength than the current position of weakness.

Otherwise we are left with an appeal to virtue rather than design: central bankers exercising self-restraint. We have not seen enough of it over recent years, when central bankers have instead fallen over themselves to signal they are aligned with various worthy causes, whether out of personal conviction or a desire to please particular politicians and parts of the public. It will be for historians to judge whether that impaired their performance on what only they can do: their core mission. But in the meantime the predicament underlines the need for political economists to devote attention to a central problem of *elected* power: how to incentivise its holders to do what only they can decently do. That means more attention the role of fiscal issues in economic policy.

The scenario that preoccupies our hosts underlines the stakes. To the extent that low steady-state interest rates continue to coincide with weak underlying growth (technical progress and so on), the political environment in which policy is conducted will be unusually difficult. In the limit, a world of zero

productivity growth would be a zero-sum game: almost all policy choices would be distributional, and so fractious. Unelected central banks do not belong in the middle of those struggles; well, not if we are to hold onto them as useful institutions.