

Protect the Safe Core: Restating the Central Bank Mandate*



By Enrico Perotti (University of Amsterdam and CEPR)

JEL codes: G28, E41, E58.

Keywords: Lender of Last Resort, Central Banks, Money Market Funds, Liquidity, Public Debt, Monetary Policy.

Central banks have vastly expanded their footprint on capital markets. At a time of extraordinary pressure by many sides, a simple benchmark for the scale and scope of their core mandate of price and financial stability may be useful.

We make a case for a narrow ex ante mandate to maintain and safeguard the border between safe and quasi safe assets. A sharp definition minimizes ambiguity and discourages risk creation and limit panic runs, primarily by separating market demand for reliable liquidity from risk-intolerant demand for a safe store of value. Naturally the central bank may be occasionally forced to intervene beyond the safe core, but should not be bound by any such ex-ante mandate, unless directed to specific goals set by legislation with explicit fiscal support.

We review distinct features of liquidity and safety demand, seeking a definition of the safety border, and discuss LOLR support for borderline safe assets such as MMF or uninsured deposits.

A safe core formulation is close to the historical focus on the central bank offering lending to regulated entities against the safe component of private collateral and contributing to stabilize public debt trading. Its specific framing does help explain why aggregate safety demand is related to financial wealth rather than GDP, and offers some context on controversial issues such as the extent of LOLR responsibilities and the desirable scale for central bank liabilities (Greenwood, Hansom and Stein 2016. Finally it is consistent with an active central bank role in supporting liquidity in government debt markets trading and clearing (Duffie 2021, 2023).

*Disclaimer: All expressed opinions are my sole responsibility, and are not intended to represent the view of the ESRB Advisory Scientific Committee. Author's note: I thank Charles Goodhart, Viral Acharya, Darrell Duffie, Arvind Krishnamurthy, Marco Cipriani, Rafael Repullo, Carmelo Salleo, Stijn Claessens, Klaas Knot, Paul Tucker and Steve Cecchetti for useful comments.

A public mandate

The central bank is the public institution entrusted with the monopoly of issuing statutory money. No other entity has the legal privilege to create liabilities that must be accepted at par as means of payment, the power to create liquidity. This unique power has to be assigned to a core public goal, a responsibility that requires a clear benchmark to be exercised wisely.

We have learned since 2008 about a segmented demand for safe assets distinct from liquidity (Krishnamurthy and Vissing-Jorgensen 2012), reflecting a primary need for a safe store of value rather than liquidity as a mean of exchange. Unlike liquidity demand, safety demand appears quite inelastic to its reward, as savers accept minimal rates provided (nominal) capital preservation is assured over the medium term. Its scale and time horizon offers a stable foundation of steady funding for the entire financial system, yet it is highly risk intolerant and thus run prone savers. Central bank liquidity support for *safe claims* (as defined by regulation, thus encompassing public debt, deposits and demandable claims by regulated entities redeemable at par) ensures stability of the financial architecture by avoiding disruptive runs.¹

Households and firms also hold money-like assets for transactions. Liquidity needs demand reliable access, which is satisfied also by very low risk assets (Gorton, 2017). As such, liquidity demand can be satisfied by quasi safe claims issued by shadow banks. Engaging central bank liquidity insurance to such claims undermines stability as it encourages risk creation while confusing safety seeking investors.

Thus the safety border marks the distinction between a demand for store of value which is price insensitive but risk intolerant, and a demand of quasi money as mean of payment, risk averse but more price sensitive. Thus while safety demand will never accept to bear risk at any price, liquidity demand may accept to trade a little risk for a better yield (provided access to funds is reliable).

Safety demand as natural scaling factor for central bank liabilities

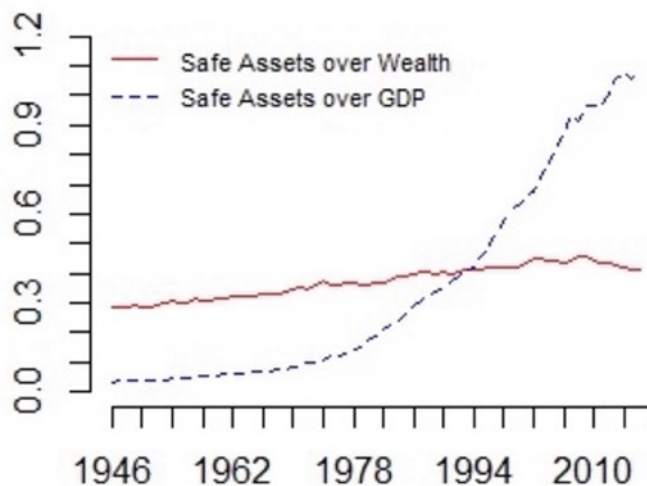
Historically, economists have viewed the total volume of transaction in the economy as a natural anchor for liquidity and credit demand. The rapid rise in the central bank balance sheet as a share of GDP since 2008 thus created great concerns that excess outside money creation would lead to inflation. Yet the expansion was accompanied by deflation for more than a decade. Prices finally rose only following major epidemic and war shocks.

Gorton et al (2010) and Perotti and Terovitis (2023) show that the volume of demand for safe assets since the Second World War has not tracked GDP, but rather total private wealth (see Chart 2). Demand has risen rapidly in recent decades as falling interest rates boosted financial and real estate valuations. At times of uncertainty and rising asset values, savers and investors were willing to absorb a higher supply of nominal safe assets rather than spend it on goods. Central banks thus expanded to satisfy a vast demand for safe store of value, which had been earlier satisfied by explosive growth of shadow banks.

A safe core mandate that naturally targets the scale of safety demand suggests a different scaling factor to assess the volume of central bank liabilities. It helps to explain the need for a rapid rise since 2008, in part in response to loss of confidence on private safe asset creation.

¹ Basic household safety is a principle embodied in a deposit insurance system deliberately capped to target public safety provision and containing moral hazard.

Chart 1: Scaling US Safe Assets Demand

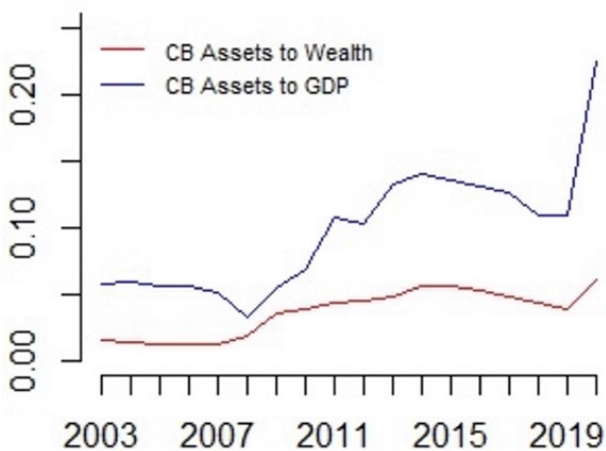


Source: Perotti Terovitis (2023).

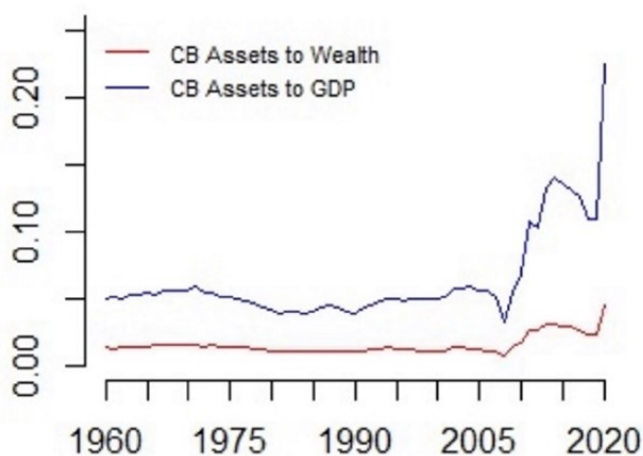
Chart 2 presents a striking comparison between the scale of Federal Reserve assets relative to GDP, which have seen a massive rise, and its relative stability relative to aggregate wealth (all measures from the Flow of Funds).

Chart 2: Evolution of Central Bank Balance Sheets (short and long term series)

US Central Bank Assets over Wealth and GDP



US Central Bank Assets over Wealth and GDP



Source: Federal Reserve Bank of Saint Louis.

The new scaling offers a more reassuring interpretation of recent quantitative monetary expansion. Recent evidence suggests that demand for central bank reserves appears to be scaled by deposit volumes (Lopez-Salido and Vissing-Jorgensen 2023).

As safe asset demand appears to be closely related to total wealth, the optimal scale of central bank liabilities over GDP may depend on interest rates and valuation metrics.² Critically, the appropriate target should reflect core safety needs by households and small firms rather than the aggregate stock of demandable claims, which include uninsured deposits and shadow bank claims. Central banks clearly have a broader role in liquidity support for regulated entities, but this should remain anchored by the safe component of their private collateral without crossing the risk threshold or the regulated perimeter.

Evidence on Safety and Liquidity Demand

Long term evidence shows a structural demand for safe store of value, distinct from liquidity demand (Krishnamurthy and Vissing-Jorgensen 2012). The segmented safety demand appears quite inelastic to interest rates, consistent with a primary need for a minimum safety cushion. This suggests a strong store of value role next to liquidity insurance, two concepts that are fused in the classic model by Diamond and Dybvig (1983). A critical difference with classic liquidity demand for transaction purposes may trade off at the margin some yield for minimal risk, safety demand escapes any risk.

Consider a very simple representation of the financial system architecture as a pyramid where a broad foundation enables the absorption and reallocation of risk on a large scale. In such a framing, satisfying basic safety needs ensures stability and thus reliable access to liquidity, enabling maturity transformation and the higher architecture of credit and capital markets.

Figure 1: Safety as Foundation



Under this view, safeguarding the foundations is essential for stability of the financial system.³ Banking crises tend to occur when supposedly safe assets prove not fully safe, triggering runs by investors who are risk intolerant and reinforced by others who fear dilution.

² There are concerns that the financial sector become accustomed to abundant liquidity upon rapid expansions of central bank support, such as during the COVID epidemics. Once a policy reversal occurs to contain inflation, banks may struggle during a sustained QT phase to absorb a large stock of demandable promises and credit lines (Acharya et al. 2022). More than ever, assigning liquidity risk to the private sector is essential to contain excess creation of demandable promises.

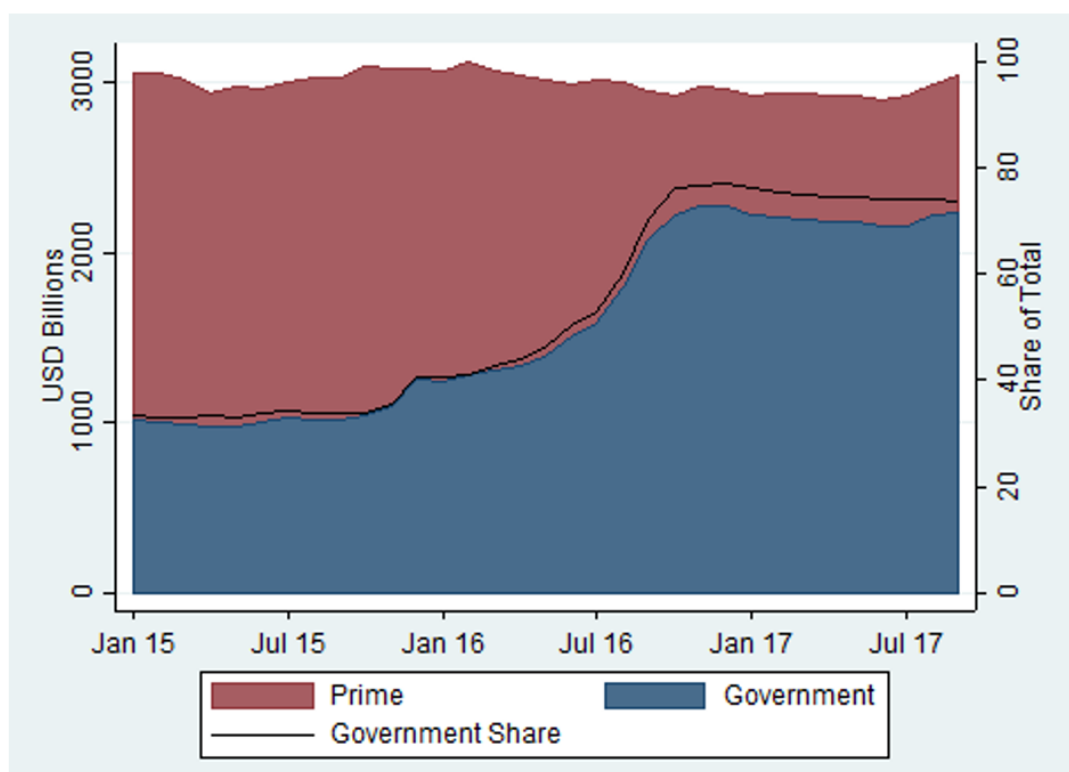
³ Protecting the safe asset foundation implies a full liquidity backstop to support trading and funding for safe claims, not a mandate to repay.

As Nobel prize winner Doug Diamond said (2023), all financial crises are triggered by runs on private short term debt. Central bank have a clear role to perform in such crises, and sometimes intervene beyond the safe core to avoid shock propagation.⁴ Precisely because of ex post pressure to intervene, a strict and self-restrained ex ante mandate is essential to maximize constructive ambiguity and ensures proper risk pricing by investors.

The concept of a risk-intolerant demand for nominal safety is visible from investor responses to the 2016 reform of Money Market Funds (MMF), where investor demand shifted massively away from liquid and better-remunerated prime funds once they could no longer promise full protection of capital (Cipriani and La Spada 2021), as Chart 3 shows.

The reform thus induced a natural segmentation between investors demanding capital preservation versus those offering liquidity with modest risk and better yield.

Chart 3: Total MMF holdings upon implementation of new MMF norms



Source: Cipriani and La Spada (2020).

Containing Excess Creation of Quasi Safe Assets

A strong safety demand produces a safety premium at the zero risk border (Krishnamurthy and Vissing-Jorgensen 2012, 2015). Shadow banks seek to emulate banks' cheap funding and high leverage by promising reliable liquidity and capital safety on demand. They are however not properly capitalized to credibly offer safety, so they do not belong to the safe core.

⁴ Once distress starts, the safety border can be ambiguous. As the central bank expands financial safety by easing haircuts on collateral, it implicitly redefines what it is safe.

A strict ex ante definition of the LOLR mandate has two practical goals. Un(der)-regulated private promises of safety may draw in risk intolerant (and thus run prone) savers, a confusion that create unconditional runs upon even minimal risk. A related effect is to discourages excess creation of risky claims vulnerable under stress.

Quasi safe asset liquidity depends on market conditions, highly vulnerable to shocks triggering legitimate liquidity needs. Also among risk averse but price sensitive investors, observing large outflows may trigger fears of dilution and lead to runs until default. The key to avoid such escalation is to *nip in the bud* the perception that many other will run. As we discuss later, the scale of withdrawals can be reabsorbed with modest price pressure as long as fears of dilution can be curtailed in a timely base.

The key argument is that liquidity withdrawal spirals may be mitigated by pricing, while safety runs are unconditional and thus devastating. A reliable border where central bank responsibility stops is thus a primary necessity for household and investors who need clarity on the risk threshold, and avoid illusions of safety that create vulnerable constructions. A clear border thus disciplines excess shadow bank expansion based on excessive promises of safe liquidity.⁵

Liquidity Provision in Distress

Central banks historically support intermediation by refinancing the **safe component** of private collateral by **regulated intermediaries**. Recent proposals (reviewed in Buiters et al 2022) call for an expansion of this mandate, creating standing programs for private traded assets in times of runs as a market maker of last resort (MMLR), supposedly at a penalty rate. Proponents argue that central bank liquidity is a costless tool to backstop private markets experiencing fire sales.⁶ Some proposals go further to envision intervention by purchases.

Explicit risk absorption clearly undermines the notion of a safe border and overstates the case for public support of private risky assets. The central bank is poorly placed for risky asset valuation (as opposed to assess collateral risk in refinancing) and should not be drawn into the task of second guessing market prices. Any commitment outside the safe core creates a public obligation to support private claims that chose to avoid proper regulatory obligations, a recipe for risk creation and policy capture by special interests.

In an acute liquidity crisis, a central bank must obviously be able to do whatever is strictly required. The key issue is how to organize such ex post LOLR interventions on shadow banks. Paul Tucker (2018) and others have advocated a general regime based on liquidity (self) insurance for safe promises, with punitive terms for intermediaries who need help ex post but never accepted supervision. Historically, public insurance has always been underpriced. Moreover, the pricing approach would however require disclosure and so may trigger further concerns about intermediaries in needs of selling. Goodhart and Lastra (2022) stress how LOLR interventions should be initially kept confidential. They see little benefit from punitive ex post pricing and prefer a sound solution ex ante. Next to tighter liquidity requirements, they argue for assigning personal liability to decision makers in distressed banks.

⁵ Excess promises of liquidity backed by illiquid assets were vividly denounced by the Bank of England Governor Mark Carney (2019), as a classic warning for shadow banks not to expect support in case of runs.

⁶ Reversing large purchase programs, such as the Bank of Japan's purchase of 80% of the local ETF market or the vast foreign stock holdings accumulated by the Central Bank of Switzerland to contain currency appreciation, create an open ended fiscal exposure with redistributive effects. Programs outside the safe core clearly reflect political priorities (eg economic growth) assigned to the central bank beyond its core function.

Defining the safe core border

Clearly, a definition of a safe core becomes essential and potentially challenging. Under Charles Goodhart's (1999) law of regulation, any prudential measure defined by regulation will be distorted by arbitrage.⁷ The strictest definition is nominal safety, which includes currency and reserves, retail and small firm deposits by adequately capitalized banks, plus public and insured debt. The safety core also includes basic financial architecture in payments, trading and clearing of safe assets.

One could argue that any safe promise allowed by explicit regulation to promise safety of principal (what the public sector accepts as "nominally safe" promises). Does this define the domain of public responsibility when there is some ambiguity? What may be included, MMF shares or corporate deposits? A safe core mandate would dictate that the safety of such claims cannot be treated as a public responsibility. While the private need to access reliable liquidity can be supported by refinancing against good collateral, any underlying risk should remain a private matter.

Consider first uninsured demandable debt, which experienced sudden runs in March 2020 and 2023 forcing costly bailouts. In March 2020 the Fed chose to support liquidity of MMF allowed by law to promise safety of principal, activating a (Treasury-backed) temporary facility providing liquidity at times of strong outflows. There may be a proper case here for **retail MMFs** allowed to promise safety under proper regulation to lay a legitimate claim to the safe core. The same principle should not apply to prime MMFs serving as corporate cash pools.

But what about uninsured corporate deposits? Some lessons must be learned from the forced bailout imposed by sudden US banks defaults in 2023. How should we view large scale promises of safe principal issued by a regulated entity to corporations?

MMFs had been the main destination for corporate cash pools, so they are a natural benchmark on how to regulate uninsured liquidity needs. The MMF reform debate has evolved since March 2020. While the 2016 reforms aimed at slowing down outflows by gates, the 2020 experience (when no fund was gated) has led regulators to favor imposing charges upon rapid outflows, a natural adjustment to reflect scarce market liquidity (swing pricing). Applying charges automatically upon large outflows of uninsured deposits would discourage further withdrawals, reducing dilution concerns and act as direct brake on run incentives, effectively protecting those who do not run. Capponi, Glasserman and Weber (2020) show how charges reduces incentives to withdraw for those with no immediate liquidity needs, breaking an escalation driven by fear of dilution. Charges may be combined with a limited Residual Amount at Risk (RAR), proposed by Cipriani et al (2023). Uninsured deposit withdrawals would have a small amount gated, with right to withdraw with a month (at lower seniority to unwithdrawn deposits in default). Matta and Perotti (2023) show how suspensions of redemption break down queue orders and reduce run incentives.⁸ Overall, relying on charges directly triggered by outflows may be better as it removes discretion on the choice of gating. Critically, this solution ensure complete firm access to liquidity at a modest price even in time of illiquidity.⁹

⁷ Simple benchmarks are unsophisticated but also much harder to game (Shleifer and Glaeser, 2001).

⁸ Their result shows how the optimal timing of suspension in general comes after some illiquid assets are sold. However, when intermediaries have discretion on the timing of suspension, the resulting choice is an excessive delay (as the behavior of MMF in March 2022 proved). This insight is consistent with the proposed shift of emphasis on mandatory charges directly activated by large outflows in the proposed MMF regulatory reforms.

⁹ In the economic analysis of externalities, runs are driven by fears of dilution, a form of risk externality that may be dealt with by either price or quantity norms (Weitzman 1986, Perotti and Suarez 2011).

Managing public debt

The vast expansion in public debt since 2008 has been absorbed by rising demand for safe assets. At present its huge scale dwarfs the balance sheet capacity of key market makers. In various episodes such as March 2020, commercial market makers were unable to carry the extraordinary volume of demand for liquidity. The Fed acted effectively as a MMLR on government debt, a role consistent with a safety mandate.

A structural solution is needed to overcome the rising bottleneck risk in public debt markets, beyond a temporary suspension of bank capital norms. A public clearing infrastructure have been advanced in recent years to absorb extraordinary trading.

Duffie (2023) has proposed that the central bank provide liquidity against safe collateral to a central clearing infrastructure for public debt trading. “With central clearing, the required amount of capital is lower .. because both commitments are made to the clearinghouse... would also be more transparent and would impose more uniform constraints on leverage”. Other public solutions to absorb sudden surges in liquidity demand include temporary Treasury repurchases (Duffie and Keane 2022).

The risk of fiscal dominance is a clear possible challenge to a safety mandate that includes public debt. To be true, public debt has long been core business for central banks; many, such as the Riksbank and the Bank of England, were created as state debt management offices. The emergence of fiat money and inflation called for an evolution towards monetary independence, whose principle must be maintained.¹⁰ Yet ultimately, fiscal decisions are outside the domain of a central bank mandate.

Conclusions

This article argues that the central bank core task can be restated as a mandate to ensure a reliable foundation for a structural money demand seeking safe assets as store of value, a primary need and a necessary condition to support a stable liquidity market. It characterizes safety demand as price insensitive but risk intolerant, in contrast to liquidity demand which may be managed by proper pricing. Safe assets are held primarily as a safe store of value and have a large safety premium, and will be run if deemed risky. Quasi safe assets satisfy the demand for reliable liquidity at a better yield, but are outside the safe core. Sudden liquidity outflow may be frequent, but they do not need to propagate as long as safety investors are not confused and self-fulfilling run incentives contained by prudential norms. Capital asset and leverage risk can be carried at the top layer of the financial architecture, where shocks are absorbed by repricing with limited trading rather than runs.

Under this view, the core central bank task should be primarily to ensure a stable store of value. Avoiding safety runs is critical for stability, while liquidity runs within the safe core may be contained by access to liquidity against collateral by regulated intermediaries. Outside this safe core, uninsured runs should be contained by repricing, a view embodied in the proposed changes in MMF norms by the SEC and ESMA. Clarity on the risk border is essential to control endogenous risk and safety runs. Confidence in basic safety stabilizes flows, supports maturity transformation and ultimately capital markets.

¹⁰ Historical concerns about the inflationary impact of public debt monetization have proven unfounded at times of high demand for safe assets. The massive QE purchase programs adopted by all central banks since 2011 proved successful at supporting demand for safety at a minimal inflationary cost until the COVID shock.

While a core mandate may be more a restatement than a novel concept, this formulation highlights the role of core safety as a primary foundation on which liquidity demand and risk bearing capacity are built. At time of distress it is necessary for central banks to take steps outside the safe border, yet intervention should not be directed by standing mandates, least it induces excess risk creation, capture and fiscal bailouts.

As long as the zero risk border is guarded carefully as a public mandate, confidence in basic safety enables leverage, risk pricing and management in credit and capital markets and a proper pricing and allocation of risk. Protecting the safe core also involves ensuring stable conditions on public debt markets. It is consistent with a macroprudential mandate to avoid procyclical incentives for quasi safe asset creation.

As a natural monopoly, the central bank has a public duty to assign its safety provision appropriately, as its value is not unlimited. A capped deposit insurance should be kept to enforce a targeted safety threshold and limit risk taking. This principle extends to the ideal scale of central bank digital currencies (CBDC), which (as the ECB has chosen) should be capped to target access to public safety and avoid bank disintermediation. And last but not least, a restrained commitment to monetary expansion beyond the safe core is consistent with long term price stability and protect the real value of nominal claims. ■

References

- Viral Acharya, Rahul Chauhan, Raghuram Rajan and Sascha Steffen (2022), "Liquidity Dependence: Why Shrinking Central Bank Balance Sheets is an Uphill Task", October.
- Walter Bagehot (1873), *A Description of the Money Market*, Henry S. King & Co.
- Ulrich Bindseil (2014), *Monetary Policy Operations and the Financial System*, Oxford University Press.
- Willem Buiter and Anne Sibert (2007), "The Central Bank as the Market Maker of last Resort: From lender of last resort to market maker of last resort", VoxEU blog, 13 Aug 2007.
- Willem Buiter, Stephen Cecchetti, Kathryn Dominguez and Antonio Sánchez Serrano (2023) "Stabilising financial markets: lending and market making as a last resort", ESRB Advisory Scientific Committee report no 13, January.
- Agostino Capponi, Paul Glasserman and Marko Weber (2020), "Swing Pricing for Mutual Funds: Breaking the Feedback Loop Between Fire Sales and Fund Redemptions", *Management Science* Vol 66-8, August.
- Marco Cipriani, and Gabriele La Spada (2021), "Investors' appetite for money-like assets: the MMF industry after the 2014 regulatory reform", *Journal of Financial Economics* 140 (1), 250-69.
- Douglas Diamond and Philip Dybvig (1983), "Bank Runs, Deposit Insurance and Liquidity", *Journal of Political Economics* 91, 401-419.
- Douglas Diamond (2023), "Nobel Lecture: Financial Intermediaries and Financial Crises", *Journal of Political Economy* vol 131-10, October.
- Darrell Duffie (2021), "A Proposal to Restore Stability to the Shaken U.S. Treasury Market", <https://www.gsb.stanford.edu/insights/proposal-restore-stability-shaken-us-treasury-market>.
- Darrell Duffie (2023), "Resilience redux in the US Treasury market", Jackson Hole Symposium September 2, 2023.
- [Financial Times](#), June 26 2019, "BoE governor Mark Carney calls for change to investment regulation".
- Charles Goodhart (1999), "Myths About the Lender of Last Resort", *International Finance*, 2(3), 339-360.
- Charles Goodhart and Rosa M. Lastra (2022), "Lender of Last Resort and Moral Hazard", LSE mimeo.
- Gorton, Gary and Stefan Lewellen and Andrew Metrick (2012), "The Safe-Asset Share", *American Economic Review: Papers & Proceedings* 102 (May), 101-106.
- Gary Gorton and Guillermo Ordonez (2016) "Good booms, bad booms", *Journal of the European Economic Association*, pp. 19-36.
- Gary Gorton (2017) "The history and Economics of Safe Assets, 2017", *Annual Review of Financial Economics* 9, 547-586.
- Robin Greenwood, Samuel Hanson and Jeremy Stein (2018), "The Federal Reserve's Balance Sheet as a Financial-Stability Tool", in *Innovative Federal Reserve Policies During The Great Financial Crisis* edited by D Evanoff et al, World Scientific Publishers.
- Group of Thirty Working Group on Treasury Market Liquidity (2021) "*U.S. Treasury Markets: Steps Toward Increased Resilience*", <https://group30.org/publications/detail/4950>.
- Arvind Krishnamurthy and Annette Vissing-Jorgensen (2012), "The Aggregate Demand for Treasury Debt", *Journal of Political Economy*, Vol 120-2, p. 233 – 267.
- Rafael Matta and Enrico Perotti (2022) "Pay, Stay or Delay? How to Stop a Run", https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3487535; forthcoming in the *Review of Financial Studies*.
- Enrico Perotti and Spyros Terovitis (2022) "Seeking Safety", ABS mimeo.
- David Lopez-Salido and Annette Vissing-Jorgensen (2023) "Reserve Demand, Interest Rate Control, and Quantitative Tightening", Federal Reserve Board, January 10.
- Andrei Shleifer and Edward L Glaeser (2001), "A Reason for Quantity Regulation", *American Economic Review Papers and Proceedings* 91 (2): 431-435.
- Paul Tucker (2018), "Is the Financial System Sufficiently Resilient: A Research Programme and Policy Agenda." BIS Working Papers No. 792, June 2019, Bank for International Settlements.

About the author

Enrico Perotti (PhD Finance, MIT 1990) is Professor of International Finance at the University of Amsterdam. His research in banking and corporate finance, political economy, legal and financial history has been published in top economics and finance journals. He has held visiting appointments at MIT, Harvard, Oxford, Columbia Business School, London Business School, LSE and the IMF. He acted as consultant to the IMF, Bank of England, ECB, World Bank and DNB. He currently serves as a member of the ESRB Advisory Research Council at the ECB.

SUERF Publications

Find more **SUERF Policy Notes** and **Policy Briefs** at www.suerf.org/policynotes

SUERF

The European Money
and Finance Forum

SUERF is a network association of central bankers and regulators, academics, and practitioners in the financial sector. The focus of the association is on the analysis, discussion and understanding of financial markets and institutions, the monetary economy, the conduct of regulation, supervision and monetary policy. SUERF's events and publications provide a unique European network for the analysis and discussion of these and related issues.

SUERF Policy Notes focus on current financial, monetary or economic issues, designed for policy makers and financial practitioners, authored by renowned experts.

The views expressed are those of the author(s) and not necessarily those of the institution(s) the author(s) is/are affiliated with.

All rights reserved.

Editorial Board:

Ernest Gnan
Frank Lierman
David T. Llewellyn
Donato Masciandaro
Natacha Valla

SUERF Secretariat
c/o OeNB
Otto-Wagner-Platz 3
A-1090 Vienna, Austria
Phone: +43-1-40420-7206
www.suerf.org • suerf@oenb.at