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The Sixth Mechanism: Programmable Compliance and the Architecture of Democratic Erosion

The history of political power is the history of its limits. Every civilization that valued liberty did so by placing something beyond the reach of those who govern, a domain of exchange, conscience, or property that no law could touch. Political authority once operated through law; digital infrastructure now allows it to operate through architecture. Where exchange once occurred in spaces the state could only partially observe, it now occurs on infrastructure the state can own, design, and programme.

Freedom has always been defined not by what the state permits, but by what lies beyond its grasp. Digital interventionism dissolves this boundary. It does not operate around the margin of freedom but through its architecture, embedding control into the infrastructure of exchange before choices can be made, before transactions are attempted, before legal challenge is possible.

Hayek argued in 1939 that "government by agreement is only possible provided that we do not require the government to act in fields other than those in which we can obtain true agreement." ¹

A federation of diverse peoples, he concluded, must therefore govern less, not more. What Hayek described as the limits of agreement in heterogeneous societies provides a framework for understanding their technological reappearance today. Out of the structural demands of integration, the European Union has inverted this logic: where agreement cannot be obtained, infrastructure becomes its substitute and the federal state that democratic legitimacy has withheld is constructed in code.

The euro was the first expression of this logic: a shared currency imposed on economies too diverse to sustain deep monetary unity by agreement alone. The digital euro adds programmability. When money can be programmed, the infrastructure of exchange becomes the infrastructure of governance. For a union that cannot generate legitimacy through shared identity, this is structural.

In February 2024, ECB Executive Board member Piero Cipollone defended seeking infrastructure providers before authorising legislation had been adopted. ²The episode illustrates a structural tendency of digital interventionism: infrastructure can be prepared before democratic contestation is

¹Hayek, F.A., "The Economic Conditions of Interstate Federalism" (1939), reprinted in: Individualism and Economic Order, University of Chicago Press, 1948, p. 271

²Piero Cipollone, "Preserving people's freedom to use a public means of payment: insights into the digital euro preparation phase," speech at the Committee on Economic and Monetary Affairs of the European Parliament, Brussels, 14 February 2024.

complete, shaping later political decisions. The digital euro is best analysed as a constitutional and institutional development with monetary form.

This essay argues that the digital euro shifts the geometry of power: money becomes governance infrastructure, pre-structuring conduct through code where law once operated. Through the Austrian lens, this reveals three problems: an epistemological problem, since programmable design presupposes knowledge that cannot be centralised; a constitutional problem, as automated execution displaces contestable legal restraint; and a property-rights problem, because conditioned access weakens ownership into revocable permission. In Europe, these converge in a fourth: infrastructural integration substitutes for political consensus. Existing debates miss the deeper question: what happens to liberty when intervention operates within the architecture of action rather than at its margin? The argument proceeds in five stages: historical, economic, constitutional, institutional, and a constructive conclusion sketching the institutional conditions for dispersing monetary power rather than concentrating it.

From Spontaneous Order to Programmed Compliance: A Historical Account

The history of money reflects a fundamental tension between two conceptions: money as a spontaneous institution emerging from voluntary exchange, and money as a political instrument serving those who control its issuance. Carl Menger showed in 1871 that the former is historically and logically prior. Money is not created by the state.³ It emerges as individuals, seeking to overcome the limits of barter, converge on the most marketable commodities. It is therefore social before it is political: an institution generated by coordination without command, preceding and independent of political authority.

The establishment of central banks introduced the first major departure from this Mengerian order. Monetary authority passed from decentralised market processes to political institutions. Bretton Woods anchored this logic at the global level, formally tying national currencies to the dollar. Yet this arrangement preserved only the appearance of a commodity constraint. When the Nixon administration suspended gold convertibility in 1971, money had become fully fiat, no longer a market institution, but a political one.

The euro deepened this institutional logic in a specific way. As Philipp Bagus demonstrated in *The Tragedy of the Euro*, a shared currency imposed on fiscally heterogeneous states creates a monetary commons: the incentive to externalise fiscal irresponsibility onto all eurozone citizens becomes structurally rational when multiple governments share a single central bank. The tragedy Bagus identified is not merely economic but political. A monetary union that cannot resolve its commons problem does not stabilise; it centralises.⁴ The digital euro is not a resolution of this tragedy, but its

³Carl Menger, *Grundsätze der Volkswirtschaftslehre* (Vienna: Wilhelm Braumüller, 1871), ch. 8, pp. 250–285.

Menger's account of the emergence of money from barter through individual convergence on the most marketable commodity remains the foundational statement of the spontaneous-order theory of money.

⁴Bagus, P. (2010): *The Tragedy of the Euro*. Auburn: Ludwig von Mises Institute, pp. 1–20.

next institutional expression. Its logic cannot be separated from the broader trajectory of European centralisation: where organic political unity is absent, monetary infrastructure can perform integrative functions that democratic legitimacy alone has not been able to secure, precisely the structural tendency Hayek identified in 1939.⁵

The digital euro is the point at which this erosion becomes architecture: the monetary infrastructure of a federal state constructed where democratic self-determination could not construct it by consent.

The Calculation Error as Architecture: An Economic Account

This historical trajectory is not accidental. It follows a precise economic logic, one that the Austrian School of Economics articulates with a clarity no other school of thought has matched. The most fundamental objection to programmable money is not political but epistemological. When the ECB sets a holding limit for more than 340 million people across the euro area, it imposes a single administrative judgement on radically non-uniform circumstances: income volatility, precautionary motives, liquidity needs, and intertemporal preferences that only individuals themselves can know.⁶ The holding limit is therefore not merely a technical safeguard. It hard-codes into monetary infrastructure a judgement no central authority can make for millions of individuals. The problem is not merely that the ECB lacks this knowledge in advance, but that such knowledge emerges only through market discovery: through entrepreneurial responses to differences in liquidity demand, precaution, and institutional trust that no planner can pre-aggregate.

The epistemological objection is only the first layer. Programmable money also removes the zero lower bound, one of the last institutional constraints on monetary authority.

As long as individuals can hold physical cash, nominal rates cannot fall significantly below zero; any attempt at deeply negative returns triggers withdrawal into currency. A retail CBDC removes this exit option entirely. When physical cash disappears and every monetary unit becomes a direct central bank liability, negative rates can be applied to all balances without the possibility of withdrawal.⁷

The significance of this shift lies not in the certainty that negative rates will be imposed, but in the removal of the structural constraint that previously made their universal imposition impossible. Austrian Business Cycle Theory identifies credit expansion below the natural rate as the primary mechanism generating boom-bust cycles: suppressed rates induce malinvestments, and the eventual correction produces crisis. Physical cash functioned as an institutional brake; a retail CBDC removes it. Deflation is not a uniform phenomenon: it arises from productivity growth, credit

⁵Hayek, F.A. (1939): 'The Economic Conditions of Interstate Federalism', reprinted in: *Individualism and Economic Order*, University of Chicago Press, 1948, pp. 255-272.-Hayek frames this as a structural dilemma, not a policy choice: a federation extending beyond organic unity must either govern less or centralise more. The digital euro suggests the European Union has chosen the latter.

⁶Hayek, F.A. (1945): 'The Use of Knowledge in Society', *American Economic Review*, Vol. 35, No. 4, p. 519. — Hayek's formulation: 'The economic problem of society is a problem of the utilization of knowledge which is not given to anyone in its totality.' The application to CBDC holding limits is the author's own.

⁷Huerta de Soto, J. (2020): *Money, Bank Credit, and Economic Cycles*. Auburn: Mises Institute, 6th ed., Kap. 4-5. —

correction, or monetary contraction, which differ profoundly in their economic meaning and appropriate policy response.⁸ A monetary instrument that applies negative rates uniformly cannot distinguish between the deflation it should combat and the deflation it should welcome. It is a blunt instrument wielded by an authority that cannot possess the knowledge to make that distinction. Ludwig von Mises identified interventionism as an inherently unstable system: each intervention generates distortions that justify the next, extending political control not necessarily through deliberate design but through institutional logic.⁹ The architecture of programmable money fits this pattern with unusual precision. Holding limits create incentives for exit and avoidance. Negative rates then become politically attractive as anti-hoarding measures. Usage restrictions, in turn, become easier to justify as anti-circumvention devices. In this way, each intervention creates the conditions under which the next becomes more plausible.

To interpret this dynamic merely as policy failure would miss its institutional significance. For a union that cannot achieve deeper integration through democratic agreement, programmable constraints serve a coordinating function where political consensus is absent: the intervention spiral becomes the mechanism through which political integration advances. These are not design flaws; the calculation error ceases to be a defect of planning and becomes a feature of the payment system itself. A monetary architecture that generates demand for its own extension does not merely serve a political project; it constructs one. The digital euro is therefore not an economic error but a political instrument: the means by which a heterogeneous union attempts to achieve through monetary architecture the homogeneity that voluntary convergence has not produced. The alternative is not the absence of digital money, but the absence of monopoly over its infrastructure.

Law Prohibits, Code Prevents: The Sixth Mechanism of Constitutional Erosion

Lessig recognised that code regulates. The constitutional problem runs deeper: Law prohibits and punishes after the act; code prevents before the act.¹⁰ This shift relocates power from contestable legal acts to pre-emptive technical execution. A legal prohibition can be challenged, repealed, or violated at a cost. It operates within a constitutional framework that still acknowledges rights: the very act of prohibition confirms that the prohibited conduct remains conceivable. When a CBDC algorithm rejects a transaction, none of this applies. There is no judgment, no appeal, no procedural challenge, no obligation to provide reasons.

The transaction simply does not execute.¹¹ The consequence is constitutional: what Lessig described as regulation by architecture reaches its limit case, freedom no longer exists as a default but as an

⁸Bagus, P. (2015): *In Defense of Deflation*. New York: Springer, Kap. 2, pp. 25-80. — *Bagus identifies growth deflation — produced by productivity gains — as economically beneficial and requiring no monetary intervention. The undifferentiated application of negative rates treats all deflation as pathological, a category error with direct distributional consequences*

⁹Mises, L. von (1940): *Interventionism: An Economic Analysis*. Auburn: Mises Institute, 2011, p. 60.

¹⁰Lessig, *Code and Other Laws of Cyberspace* (1999); the distinction between ex-post legal prohibition and ex-ante technical prevention is central to his argument that architecture is politics by other means.

¹¹F. A. Hayek, *The Constitution of Liberty* (Chicago: University of Chicago Press, 1960), ch. 9 “Coercion and the State”, pp. 133–147

exception. Such capacities do not guarantee abuse, yet powers embedded in frameworks rarely remain dormant. As Ginsburg and Huq observe, institutional capacities attract new uses; incentives to deploy a power rarely stay dormant once conditions for its exercise are in place.

Tom Ginsburg and Aziz Huq have identified five mechanisms through which constitutional democracies erode without an obvious moment of rupture: the attrition of horizontal accountability, the restriction of civil rights, the manipulation of electoral processes, the capture of judicial institutions, and the hollowing of federalist structures.¹² Each operates gradually through formally legitimate political acts within a legal order that remains open to challenge. Their effects arise through identifiable decisions, leaving space, however limited, for judicial review or constitutional contestation.

Central bank digital currencies represent a sixth mechanism, and in some respects the most consequential. Unlike Ginsburg's five, CBDC governance requires no new act or decree for each restriction; once the architecture is built, restriction occurs through the conditions of execution themselves. Ginsburg's five are reversible because they depend on identifiable political acts; the sixth is harder to challenge because it operates through infrastructure before those acts become visible.

The capacity for financial exclusion as a governance instrument is not hypothetical. In February 2022 the Canadian government invoked the Emergencies Act to freeze 210 bank accounts by ministerial directive within hours and without individual court orders.¹³ The Act was revoked after nine days under political pressure. The episode revealed that financial exclusion had already become a viable governance instrument, albeit one still constrained by institutional frictions: commercial banks had to implement the directive, courts remained available for review, and the visible use of emergency powers imposed political costs that ultimately forced the measure's withdrawal.

A retail CBDC alters this architecture by removing institutional intermediaries, automating restrictions through the payment system, and eliminating the political friction that constrained their use in Ottawa. What appeared there as an exceptional measure becomes, under a CBDC architecture, an administrative capacity embedded in the infrastructure of money itself.

Constitutional orders distinguish ordinary legislation from constitutional amendment precisely because some questions, such as the fundamental relationship between citizen and state and the boundaries of individual freedom, are too important to be resolved by simple majorities.

¹²² Tom Ginsburg and Aziz Z. Huq, *How to Save a Constitutional Democracy* (Chicago: University of Chicago Press, 2018), ch. 2, pp. 31–80.

The sixth mechanism discussed here represents an extension of Ginsburg and Huq's framework.

¹³³ Canada, House of Commons Debates (Hansard), 44th Parliament, 1st Session, Vol. 151, No. 41–45 (14–23 February 2022).

This distinction presupposes that constitutional change is identifiable. It requires a deliberate act, a recognised procedure, and a moment at which the governed can consent or resist. Programmable money dissolves this presupposition. When the ECB's Governing Council determines through regulatory design that the digital euro cannot function as a store of value, it effectively redefines a fundamental aspect of monetary freedom without a constitutional moment, without parliamentary deliberation, and without direct consent of the governed.¹⁴

In the European Union, constitutional amendment can be deployed as a software update. When monetary infrastructure shifts power from member states to central institutions, it rewrites the federal balance without treaty revision or parliamentary ratification. What organic political integration could not achieve, programmable monetary infrastructure attempts to impose. The code becomes the federal constitution that no European electorate has ever ratified, the legal order of a federal state assembled by monetary infrastructure in the absence of democratic mandate.

Inverse Property Rights: The Holding Limit and the Logic of the Digital Euro

The legal distinction on which Huerta de Soto insists concerns the very structure of monetary claims. In the case of the depositum irregulare, money is transferred for safekeeping rather than for use, entailing the strict obligation to preserve the tantundem, the equivalent in quantity and quality of what was deposited, in a form continuously available to the depositor.¹⁵ The decisive point is that immediate availability is not alienated. In the *mutuum*, by contrast, availability is transferred for a term to the borrower, who acquires the right to use the funds as his own, subject only to the obligation of later restitution.¹⁶ Huerta de Soto's central claim is that modern banking rests precisely on a confusion of these two juridical forms, treating demand deposits as though they were simultaneously safekeeping contracts and credit transactions.¹⁷

This distinction becomes concrete in the holding limit. The Council's December 2025 position provides that the ECB shall define quantitative holding limits in order to prevent the digital euro from being used as a store of value automatically redirecting excess funds via the reverse waterfall mechanism, subordinating the depositor's claim to programmed thresholds, and turning ownership into a revocable administrative permission.¹⁸

¹⁴European Central Bank, *Progress on the Investigation Phase of a Digital Euro* (Frankfurt: ECB, 2023).

¹⁵Jesús Huerta de Soto, *Money, Bank Credit, and Economic Cycles*, 4th ed. (Auburn, AL: Ludwig von Mises Institute, 2020), discussion of the monetary irregular deposit and the depositor's right to receive a *tantundem* "equal in quantity and quality" rather than the identical physical units, pp. 5–7.

¹⁶*Ibid.*, on the distinction between the irregular deposit and the *mutuum*, and on the fact that in the loan contract availability is transferred to the borrower for the duration of the term.

¹⁷*Ibid.*, on Huerta de Soto's argument that modern banking rests on a juridical confusion between demand deposits and loan contracts.

¹⁸Council of the European Union, "Single currency: Council agrees position on the digital euro and on strengthening the role of cash," 19 December 2025. The Council states that, to avoid the digital euro being used as a store of value and any impact on financial stability, limits shall apply to the total amount of digital euro that can be held at any one time; those limits are to be set by the ECB. See also Council document ST 16695/25, Art. 16 ("Limits to the use of the digital euro as a store of value").

The citizen may receive central bank money but may not hold it freely beyond a politically set ceiling, a structural response to the risk that depositors might otherwise exit commercial banks for safer central bank money.¹⁹ A monetary instrument held only within limits imposed to protect the banking structure is not secure ownership, but conditional access. In Rothbardian terms, the holder is no longer free to dispose of his money as owner, but only to use it under administratively imposed conditions.

Through the automated reverse waterfall mechanism, the depositor's claim to the *tantundem* in central bank money is no longer treated as an immediately exercisable legal availability, but as a conditionally mediated claim subordinated to programmed thresholds.²⁰ Once holdings exceed the ceiling, the sum is automatically redirected into commercial bank money, interrupting the depositor's direct relation to the safer monetary form. What appears as a liquidity feature is juridically more consequential: uninterrupted availability is replaced by infrastructure that preconditions access. The right to the unencumbered *tantundem* is no longer preserved; it becomes conditional, filtered, and revocable.²¹

The market consequences are substantial. By routing excess balances back into bank deposits, the system protects commercial banks from direct competition, suppresses market signals of safety and trust, and impairs what Kirzner identified as the entrepreneurial discovery process: the alertness through which market participants notice previously obscured differences in risk, trust, and institutional quality. By suppressing exit into preferred monetary forms, the system restricts not only choice but discovery itself.²² These are consequences of a deeper juridical transformation: once the holder's claim is conditional, secure ownership, competitive discovery, and constitutional restraint are weakened at once.

This constitutional transformation is more radical than Ginsburg's democratic backsliding: it leaves no singular act to challenge, no identifiable rupture, no clear object of resistance. In Huerta de Soto's terms, this approaches the logic of socialism: the progressive substitution of entrepreneurial coordination by coercively imposed design, not through expropriation but through the administrative conditioning of the structures within which action becomes possible.²³

¹⁹European Central Bank, "FAQs on the digital euro," accessed March 18, 2026. The ECB states that users would only be able to hold a limited amount of digital euro in order to prevent excessive outflows of bank deposits and preserve financial stability. See also ECB, "Technical data on financial stability impact of digital euro," 22 October 2025, including scenarios with holding limits up to €3,000 and estimates of deposit outflows under flight-to-safety conditions.

²⁰The ECB's digital euro rulebook materials describe a "waterfall" functionality by which digital euro above the holding limit is automatically transferred to a linked commercial bank account, while later rulebook progress reports describe "reverse waterfall" as the automatic conversion of commercial bank money into digital euro when holdings are insufficient to execute a digital euro transaction.

²¹Huerta de Soto, *Money, Bank Credit, and Economic Cycles*, pp. 5–7.

²²Israel M. Kirzner, *Competition and Entrepreneurship* (Chicago: University of Chicago Press, 1973), pp. 30–87. — Kirzner's entrepreneurial alertness presupposes the structural possibility of exit; where the reverse waterfall forecloses it, the signal through which differences in monetary safety and institutional trust would otherwise be discovered is suppressed.

²³This juridical interpretation is the author's own application of Huerta de Soto's distinction between custody and loan to the architecture of the digital euro; for the underlying legal framework of the irregular deposit and the centrality of continuous availability, see Huerta de Soto, *Money, Bank Credit, and Economic Cycles*, pp. 5–7.

From Concentrated to Distributed: The Constitutional Alternative

The problems identified above share a common source: the centralisation of monetary infrastructure in a single programmable authority. The constructive question is therefore not whether money should be digital, but whether its architecture should make the concentration of power over economic participation structurally possible, or structurally impossible.

The first thesis of this constructive account is therefore that a free monetary order must be designed not around the efficient administration of centralised power, but around the institutional dispersion of monetary power itself.

Infrastructure determines the conditions of action. Whoever controls it defines the framework for holding, transferring, saving, or spending. The digital euro embeds holding limits, programmable constraints, and potentially negative returns into that framework. When infrastructure is centralised, control over those conditions is monopolised in a single authority; when distributed with exit, competition, or permissionless use, that control disperses. The digital euro resolves this question in the direction of centralisation. A free monetary order requires the opposite answer. If power follows infrastructure, centralising monetary infrastructure centralises power over economic participation.

The issue is not only how money is governed, but whether its governance rests on monopoly or competition. Hayek argued that monetary stability emerges from competition, not mandate.²⁴

Bitcoin is proof of concept: permissionless monetary infrastructure is technically feasible. Money need not be issued by a single authority but can emerge through competition among protocols and decentralised validation. Such an architecture makes exit structurally possible and censorship structurally difficult. In Rothbardian terms, it restores the property right to dispose of one's money freely rather than subject to administrative permission.²⁵ The central question raised by the digital euro is not merely monetary but political. If infrastructure organises participation, centralising it centralises power. A Europe of free peoples cannot be built through programmable monetary control from Brussels but only through the dispersion of economic, monetary, and political power across its constituent communities. The alternative is not hostility to Europe but a different principle: cooperation through decentralised institutions rather than unity through centralised administration.

Hayek asked in 1939 whether a federation built beyond organic limits could preserve the institutions of a free society. The digital euro is the answer: a federal state assembled through monetary infrastructure before the question has been put to any electorate.

²⁴Friedrich A. Hayek, *Denationalisation of Money: The Argument Refined*, 3rd ed. (London: Institute of Economic Affairs, 1990 [1976]), pp. 23–30. — *Hayek's proposal for competing private currencies as a discovery process for monetary stability.*

²⁵Murray N. Rothbard, *The Ethics of Liberty* (New York: New York University Press, 1998 [1982]), ch. 6–8, pp. 45–69. *Rothbard's natural-law framework for property rights as the foundation of individual freedom, including the right to unencumbered disposal of one's own monetary holdings.*

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