RESEARCH NOTE NO. 3

The Digital Euro and the Future of Public Payment Infrastructure

Infrastructure, Sovereignty, and the Redistribution of Value

Published by Savion Systems

Author: Stefano Campita

April 2026 | savionsystems.it

Abstract

Research Notes 1 and 2 in this series established how value moves through card payment systems and why merchants bear structural costs that neither regulation nor market competition has been able to meaningfully reduce. The root problem is not inefficiency in the engineering sense. It is the architecture of incentives: who pays, who decides, and why those two groups are almost never the same.

This third note examines Europe's most ambitious institutional response: the digital euro. Not as an incremental product improvement, but as a potential redefinition of the relationship between public money, private intermediation, and payment infrastructure. The central argument is that the digital euro, if implemented as currently designed, would not replace private payment systems. It would redefine the layer on which they operate, and in doing so shift the basis of competitive advantage away from infrastructure control and toward service quality.

The analysis examines the institutional design, the economic consequences for incumbents and merchants, the implications for market structure, and the structural trade-offs that the project must navigate. The digital euro is not a solution without costs. It is a different configuration of the same underlying tensions.

Scope of Analysis

This note focuses on the digital euro as a structural infrastructure initiative within the European monetary system, building directly on the framework established in Research Notes 1 and 2. It draws on publicly available documentation from the European Central Bank, the European Commission, and independent market analysis. Figures cited are illustrative. The note does not address retail CBDC design choices in technical detail; its focus is the economic and structural implications of the model as currently proposed.

1. Introduction

The two preceding notes in this series established a finding that is uncomfortable to accept but difficult to dispute: the card payment system persists not because it is efficient, but because its costs and its decisions have been successfully separated. Merchants pay. Consumers choose. And no technically superior alternative has been able to change that structure through competition alone.

This note begins where the second note ended. If the problem is structural, rooted in incentive architecture rather than in technology, then the solution must also be structural. The digital euro is the most significant attempt by a European institution to intervene at that level. It does not regulate a component of the existing system. It proposes to introduce a new infrastructure layer entirely.

The question this note sets out to answer is not whether the digital euro will succeed. That depends on implementation choices still being finalised, political dynamics across member states, and a range of adoption factors that remain genuinely uncertain. The question is what the digital euro is designed to do, and what follows structurally if it does it.

The central thesis is straightforward: the problem in European payments is not the efficiency of the payment act itself. It is the control of the infrastructure on which payments run. The digital euro can be read as a project aimed at reinforcing a public monetary infrastructure in the digital environment, reducing dependence on private network rents and rebalancing the relationship between public interest and private intermediation.

2. The Institutional Design: Public Money in a Two-Tier Model

The digital euro is not a cryptocurrency, and it is not designed, at least in its stated objectives, as an instrument of bank disintermediation. Its architecture is that of a two-tier model, constructed to maintain a clear but coordinated distinction between the role of the monetary authority and the role of private intermediaries.

In the public layer, the central bank would issue the digital currency and govern the core infrastructure, including settlement finality and system governance. In the private layer, banks and payment service providers would continue to perform essential functions: user onboarding, KYC compliance, the commercial relationship, the user experience, and the

development of value-added services built on top of the base layer.

This point is decisive. The digital euro does not aim to remove intermediaries from the system. It aims to reposition them. The project does not eliminate intermediation, it redefines its perimeter. The ECB does not enter the market as a commercial competitor to banks and PSPs. It intervenes at the structural level, modifying the type of infrastructure on which those actors will continue to operate.

> **Core Design Principle**
> The ECB is not attempting to sell a product. It is attempting to redefine the structure of the market. The two-tier model preserves a role for private intermediaries, but relocates competitive advantage from infrastructure ownership to service quality.

3. The Real Change: From Infrastructure Rent to Service Competition

In the current system, a significant share of economic value in payments concentrates in the control of the network, the ownership of access infrastructure, and the capacity to govern standards, acceptance rules, and distribution channels. In this context, a payment is not only a service. It is also an infrastructure position that enables the relatively stable capture of margins.

The digital euro, if implemented through a publicly accessible model mediated by private intermediaries, could modify this logic. The base payment function would tend to become more standardised, less defensible through simple network ownership, and more comparable to a utility. Value would not disappear. It would be displaced.

The competitive premium would no longer concentrate primarily in access to the rails. It would shift toward the capacity to build superior services on top of those rails: user experience, integration with business workflows, digital identity, automation, data intelligence, treasury services, reconciliation, fraud detection, and vertical solutions for specific sectors.

Figure 1. Illustrative shift in value distribution: current system vs. digital euro scenario

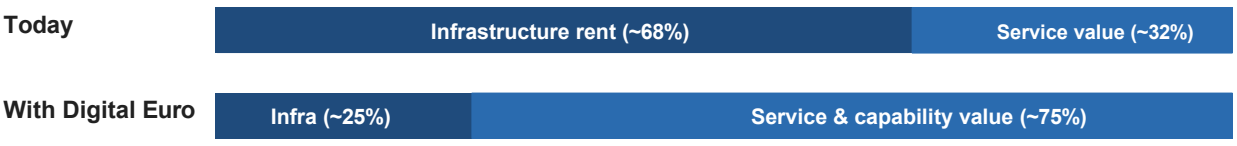

Figure 1 illustrates the structural shift in how value is distributed along the payment chain under the two scenarios. The proportions are illustrative and intended to convey direction, not precision.

Key Finding
Value is not destroyed. It is displaced. If the base infrastructure becomes more public, more standardised, and less oriented toward rent extraction, private actors do not lose their role. They simply can no longer base the same level of economic power on the sole control of the infrastructure layer.

4. What Changes for Banks and PSPs: From Gatekeeper to Service Layer

For banks and PSPs, the implications are significant. Today, many operators benefit, directly or indirectly, from positions built around infrastructure access, circuit integration, distribution, and the customer relationship. Under the digital euro model, these functions remain relevant, but lose part of their structural protection.

The risk for incumbents is a progressive commoditisation of base services. If the transfer of monetary value becomes a more standardised function, competitive advantage no longer derives from controlling the channel itself, but from the quality of execution above it.

This shifts competition onto different axes: interface quality, user experience, ERP and e-commerce integration, merchant and corporate services, security and risk management, and embedded financial solutions.

Intermediaries remain necessary. But their role evolves, less infrastructure control, more responsibility in building the service.

A second-order risk is often understated: new rents can be recreated above a public base layer. If distribution, identity, fraud orchestration, embedded finance, or merchant software integration become concentrated in a small number of providers, the market may replace one form of dependency with another. The digital euro can compress infrastructure rents without eliminating the strategic tendency to rebuild them elsewhere.

5. Competition and Market Structure: More Openness, Less Implicit Protection

One of the most significant implications of the digital euro concerns the competitive structure of the market. A more standardised, public-interest infrastructure could, at least in theory, reduce some barriers to entry and make scalability less dependent on the control of already-consolidated private networks.

This does not mean the market will suddenly become simple or perfectly open. Regulatory constraints, compliance costs, technical requirements, trust dynamics, and strong economies of scale would all persist. But the point on which competitive advantage concentrates would change.

Under the current model, a significant part of incumbents' strength derives from their control of infrastructure, standards, and relationships that are difficult to replicate. In a more public and interoperable model, that protection could diminish. Established operators would retain

brand recognition, distribution reach, capital, customer relationships, and investment capacity, but could no longer rely with the same intensity on defending market position through the infrastructure itself.

The strategic question is not whether competition increases in the abstract, but where it increases and who is best positioned to capture it. Banks with trusted distribution, PSPs with strong merchant software integration, and specialised service providers with better execution could all benefit. By contrast, actors whose competitive position depends primarily on controlling access to the rails face the greatest structural pressure.

Dimension	Current System	Digital Euro Scenario
Infrastructure control	Private networks with strong rent dynamics	Public layer managed by central bank. Open access
Merchant cost structure	1.5%–2.5% MSC + scheme fees + working capital gap	Near-zero base cost for core payment function
Settlement speed	T+1 / T+2	Instant (<10 seconds)
Competitive dynamics	Gatekeeper model; high barriers to entry for new players	Shift toward service-layer competition. lower infra barriers
Value chain role of PSPs	Infrastructure access + service bundled; high implicit protection	Service-layer focus; less infrastructure-based protection
Sovereignty	Dependent on non-EU standards and network governance	European institutional control over core infrastructure

Table 1. Current system vs. digital euro scenario across key structural dimensions. All entries represent directional assessments based on publicly available design documentation as of April 2026.

6. Merchant Economics: Why This Matters for Costs

The connection to Notes 1 and 2 is essential. The digital euro is not an abstract discussion of monetary policy. It is also a question of cost structure, and for merchants, the implications are direct.

The central question for merchants is not simply whether a new payment instrument becomes available. It is whether the emergence of a public infrastructure layer could reduce the weight of certain fees, increase the transparency of per-transaction costs, compress the pricing power of card networks, improve settlement economics, and simplify reconciliation and operational integration over time.

None of these benefits will materialise automatically, nor in the same way for every actor. Adoption is gradual. The design choices still being finalised within the ECB's preparation phase will matter significantly. And the interaction between a public base layer and the existing commercial ecosystem is not yet defined with sufficient precision to make confident quantitative predictions.

But the directional logic is clear: when the base layer ceases to function as a private rent, pressure increases for economic value along the chain to be justified by service actually delivered, rather than preserved by infrastructure inertia.

Illustrative Merchant Scenario
Consider a merchant processing €1 million in annual card volume at an all-in merchant service cost of 1.8%. The visible transaction cost is €18,000, before adding chargeback handling, reconciliation effort, and the cash-flow effect of T+1 or T+2 settlement. A digital-euro-based payment flow would not automatically remove all commercial fees, but even a partial reduction in base-layer extraction could alter the economics meaningfully if settlement is faster, cost attribution is clearer, and service fees become more separable from infrastructure rent.

The Link to Notes 1 and 2

The digital euro does not resolve the consumer incentive problem identified in Note 2, the fundamental asymmetry between who pays, the merchant, and who chooses, the consumer. What it does is modify the infrastructure on which that asymmetry operates. A public base layer cannot compel consumer behaviour. But it can reduce the cost that merchants bear when consumers exercise their existing preferences. That is a meaningful, if partial, improvement.

7. Sovereignty, Data, and Governance: The Political Dimension

The digital euro is not solely a matter of efficiency or innovation. It is, perhaps primarily, a question of governance. A payment system is critical infrastructure. Whoever controls its fundamental nodes exercises, directly or indirectly, economic and political power.

The project addresses three distinct strategic objectives. The first is sovereignty: reducing Europe's dependence on infrastructure and standards that are not fully governed within European institutions. The second is resilience: a public infrastructure strengthens the system's capacity to continue operating under conditions of geopolitical tension, fragmentation, or external shock. The third concerns data governance: not only who can access transaction data, but who defines the rules of access, utilisation, and interoperability.

In the current system, many of those rules are shaped by private network operators and market practice. In a public infrastructure model, they would be more explicitly defined and enforced within a European institutional perimeter.

7.1 The Privacy-Compliance Trade-Off

The most difficult structural tension in the digital euro's design is the balance between privacy and control. A public system must be sufficiently respectful of user confidentiality to achieve adoption. At the same time, it must be compatible with anti-money-laundering obligations, supervisory requirements, and security frameworks that necessarily involve some degree of data visibility.

The ECB has proposed a tiered privacy model: higher privacy for smaller or offline transactions, greater transparency obligations for larger or higher-risk cases. This approach is architecturally coherent, but the political and legal negotiation around its implementation remains ongoing. The credibility of the project will depend, in part, on how convincingly this

balance is resolved, and on whether the result is trusted by the public it is designed to serve.

8. Structural Trade-Offs: What Is Gained, What Is at Risk

Trade-off	What is gained	What is at risk
Efficiency vs. margins	Lower merchant costs; reduced extraction	Compression of intermediary margins currently embedded in infrastructure pricing.
Standardisation vs. innovation	Reduced fragmentation and lower friction across the payment ecosystem	Weaker private incentive to innovate at the infrastructure layer.
Public control vs. decentralisation	European sovereignty; resilience against geopolitical shocks	Greater regulator influence over market perimeter and access rules.
Privacy vs. compliance	Privacy-respecting design built into the base layer from the outset.	AML, fraud, and supervisory obligations require partial data visibility.

Table 2. Structural trade-offs of the digital euro model. All entries represent directional assessments based on current design documentation.

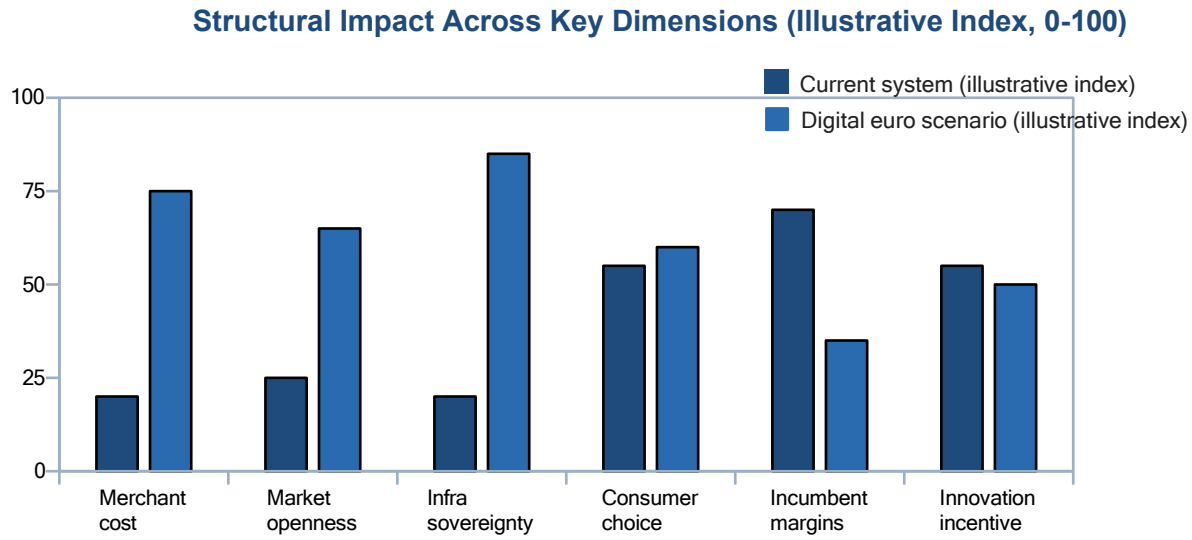

Figure 2. Illustrative impact index across key structural dimensions: 0 = less favourable for the stated dimension, 100 = more favourable. All values are illustrative.

The trade-off between public control and market decentralisation deserves particular attention. Control does not disappear under the digital euro model. It changes hands. It shifts from private global actors to European public institutions. This may represent an improvement in terms of sovereignty and democratic accountability. But it also concentrates significant regulatory power over market access and competitive perimeters in a single institutional actor.

The digital euro, in this sense, is not simply more public or more equitable. It is a different configuration of infrastructure power, with different distributional consequences, different accountability structures, and different risks.

9. Conclusion: Not a New Instrument, but a New Layer

The digital euro is not likely to replace the existing private payment system in full. More realistically, it will coexist with it. But this coexistence will not be neutral. It will change the economic and strategic meaning of private actors' presence in the market.

For the first time credibly, Europe is attempting to construct a sovereign alternative in the field of digital payments, one that does not need to extract profit from the simple movement of money. This does not eliminate the role of private operators. It compels them to redefine it.

For merchants, the most relevant question is not whether the digital euro will be adopted, but whether the emergence of a public base layer will reduce the structural cost they have absorbed for decades. The answer depends on design choices, adoption dynamics, and the outcome of a political negotiation that is still in progress. But the direction, if the project is executed coherently with its stated objectives, points toward a market where the cost of the payment act itself is less a function of network rent and more a function of service delivered.

For PSPs, banks, and infrastructure operators, the more uncomfortable question is how much of their current competitive position rests on infrastructure control that may not persist, and what they are building in its place.

The Digital Euro and the Architecture of Value

The future of payments will not be determined solely by the technology available. It will be determined by the architecture of incentives that governs access, control, competition, and value distribution. The digital euro does not replace private payment systems. It redefines the layer on which they operate. The real strategic divide will emerge between actors that can create defensible service value above a public base layer and actors whose economics still depend on controlling the layer beneath it.

References

European Central Bank. (2025). *Preparation phase of a digital euro: closing report*. Frankfurt: European Central Bank, 30 October 2025.

European Central Bank. (2023). *A stocktake on the digital euro: Summary report on the investigation phase and outlook on the next phase*. Frankfurt: ECB.

European Central Bank. (2019). *Card payments in Europe: current landscape and future prospects*. Frankfurt: European Central Bank.

European Commission. (2023). *Proposal for a Regulation of the European Parliament and of the Council on the establishment of the digital euro*. COM(2023) 369 final.

European Commission. (2015). *Regulation (EU) 2015/751 of the European Parliament and of the Council of 29 April 2015 on interchange fees for card-based payment transactions*. Official Journal of the European Union, L 123, 19 May 2015.

European Commission. (2015). *Directive (EU) 2015/2366 of the European Parliament and of the Council on payment services in the internal market (PSD2)*. Official Journal of the European Union, L 337, 23 December 2015.

European Banking Authority. (2020). *Report on the application of the Interchange Fee Regulation*. EBA.

European Payments Council. (2025). *2025 SEPA Instant Credit Transfer Rulebook, Version 1.1*. Brussels: European Payments Council.

Bank for International Settlements. (2021). *CBDCs: an opportunity for the monetary system*. BIS Annual Economic Report 2021, Chapter III.

About Savion Systems

Savion Systems analyses how value is created and distributed in modern payment infrastructures, with a focus on the economic and structural implications of emerging systems including instant payments, open banking, and the digital euro. The project publishes independent research aimed at practitioners, operators, and institutions working on payment infrastructure decisions.

Follow our research: savionsystems.it | LinkedIn: Savion Systems