RESEARCH NOTE NO. 4

The Digital Euro Is Not About Convenience. It Is About What Happens When the Rails Break.

Infrastructure Resilience, Strategic Autonomy, and the Case for a European Public Payment Layer

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Abstract

Research Notes 1, 2, and 3 in this series examined how value moves through card payment systems, why merchants bear structural costs that regulation has not resolved, and how the digital euro could redraw the boundary between public infrastructure and private intermediation. This fourth note shifts the analytical frame. It asks not what the digital euro would do on a normal day, but what it would do when something goes wrong. The central argument is that the digital euro's strongest case is not convenience — it is resilience. A modern digital economy depends on a small number of critical payment rails. When those rails fail, the problem is not the absence of money but the absence of a channel through which money can move. The 2018 Visa Europe outage demonstrated this with unusual clarity. The digital euro, properly designed and broadly adopted, could provide a sovereign European fallback layer: a public payment rail settled in central bank money, outside the operational chain of any single private network. This note also addresses two dimensions that appear throughout the series but require sharper treatment here: the significance of central bank money settlement as a structural argument for monetary sovereignty, and the merchant acceptance problem as the critical precondition for any resilience claim to be credible.

Scope of Analysis

This note examines the digital euro as a resilience instrument within the European monetary system, building on the structural framework established in Research Notes 1 through 3. It draws on publicly available documentation from the ECB, the European Commission, and independent analysis. Figures cited are directional and illustrative. The note does not address the technical architecture of CBDC systems in detail; its focus is the economic and strategic implications of the model as currently proposed.

1. Introduction

Most debates around the digital euro start from the wrong question. Will people use it? Will it be more convenient than cards? Will it compete with Apple Pay, Google Pay, or instant transfers? These are legitimate questions. They are also incomplete.

The real value of a digital euro would not necessarily appear on a normal day. On a normal day, cards work, mobile wallets are fast, banks are online, and consumers rarely think about the infrastructure behind a transaction. The value becomes visible when something breaks.

A modern economy does not only need money. It needs reliable rails to move that money. When those rails fail, the issue is no longer abstract. It becomes immediate: a consumer cannot pay, a merchant cannot sell, a business cannot collect. The infrastructure that looked invisible a few minutes earlier suddenly becomes the centre of attention.

This is why the digital euro should not be understood simply as a new payment product. Its strongest argument is not convenience. It is resilience.

2. The 2018 Visa Outage: When the Money Was There, but the Rail Failed

The most useful case for understanding payment resilience is not a geopolitical crisis. It is not an energy shock. It is not a war scenario. It is the Visa Europe outage of June 2018.

During that incident, a partial failure in Visa Europe's authorisation system prevented millions of card transactions from being processed correctly. For many consumers and merchants, the experience was simple: the card did not work.

The important detail is that the money did not disappear. Consumers still had funds in their accounts. Merchants were still open. Goods and services were still available. The failure was not about the existence of money. It was about the channel through which money had to move.

> **The Distinction That Matters**
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> In a cash-based economy, a failure in one digital payment network is inconvenient but less systemic. In a digital economy, where daily transactions depend heavily on card schemes, wallets, and payment processors, an outage in a major payment rail can quickly become a real economic disruption. The Visa outage was an ordinary technical failure. And that is precisely what makes it useful as an example: if a routine operational incident can disrupt millions of payments, the problem is not the specific company involved. The problem is the level of dependence on a small number of critical payment infrastructures.

Visa and Mastercard are highly efficient networks. They are global, fast, familiar, and deeply embedded in modern commerce. The point is not that these systems are weak. The point is that even strong systems can fail. And when they fail, an economy needs alternatives.

3. Repair vs. Redundancy: What the Digital Euro Could Have Done in 2018

A digital euro would not have repaired Visa's infrastructure in 2018. It would not have fixed the authorisation system or prevented the outage from happening. But that is not the right test.

The relevant question is whether it could have allowed consumers and merchants to continue transacting through a different channel. If the digital euro had already existed, had been widely adopted, and had been accepted by merchants, it could have provided a public European payment rail entirely outside the card scheme affected by the outage.

A consumer whose Visa card failed could have paid with a digital euro wallet. A merchant whose card terminal could not process a Visa transaction could have accepted digital euro through another interface — a QR code, a phone-based solution, a dedicated device. The transaction would not have relied on the same authorisation chain that was experiencing the disruption.

> **Repair vs. Redundancy**
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> Repair means fixing the broken rail. Redundancy means having another rail available while the first one is broken. A resilient payment system needs both. The digital euro's strongest case sits exactly there: not replacing private networks, but ensuring that Europe has a public fallback layer when private rails are unavailable, congested, or exposed to stress.

4. Settlement in Central Bank Money: The Sovereignty Argument

The resilience case for the digital euro is inseparable from a structural point that is frequently underweighted in public commentary: the digital euro would be settled in central bank money, not in commercial bank money.

In the current system, the vast majority of digital payments are ultimately settled across private account balances held at commercial banks, intermediated through private schemes operating under their own governance, standards, and risk frameworks. Central bank money appears in the chain — it underlies the system — but it is not what moves between parties in real time.

A digital euro payment would be different. It would transfer a direct claim on the European Central Bank, eliminating the counterparty risk embedded in commercial bank intermediation at the settlement layer. This is not a marginal technical distinction. It is the foundation of the monetary sovereignty argument.

> **Why Settlement Layer Matters**
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> When a private payment fails, the failure can propagate through commercial bank exposure, credit risk, and liquidity stress. A system settled in central bank money removes that vector. The payment either completes against the central bank's balance sheet or it does not complete — but it does not create a chain of private credit risk in the interim. In a stress scenario, this distinction can be the difference between a payment disruption and a financial stability event.

As money becomes more digital, monetary sovereignty becomes increasingly dependent on payment infrastructure. Cash provides a public payment option in the physical world — it is a direct claim on the central bank, universally accepted, with no private intermediary in the chain. The digital euro is the answer to a simple question: what plays that role in the digital world?

5. From Visa to Hormuz: Two Crises, One Logic

The 2018 Visa outage and a crisis in the Strait of Hormuz appear completely unrelated. One is a payment infrastructure incident. The other is a geopolitical and energy risk scenario. Yet the underlying logic is similar: both reveal what happens when complex economies depend on critical chokepoints.

The Strait of Hormuz is one of the most important energy corridors in the world. A disruption there can affect oil and LNG flows, global energy prices, freight costs, insurance premiums, and inflation expectations. Even if Europe is not the most directly exposed region in physical volume terms, it can still be affected through global pricing, competition for LNG cargoes, and broader market stress.

The lesson is not that Hormuz and Visa are the same. They are not. The lesson is that infrastructure dependence often remains invisible until the moment of stress. Before a disruption, infrastructure feels like background noise. After a disruption, it becomes the story.

That is exactly what happened with European energy after 2022. For years, dependence on external gas infrastructure was treated as manageable. Then the geopolitical environment changed, and what looked like an efficiency choice became a strategic vulnerability. The same reasoning can be applied to payments.

5.1 Could a Hormuz Crisis Become a Payment Crisis?

A Hormuz crisis would not automatically create a European payment disruption. An oil price spike does not directly break card networks. But geopolitical crises rarely stay neatly contained within one channel. They can spread through energy markets, financial markets, corporate balance sheets, consumer confidence, and cyber risk.

Consider a more severe scenario: tensions escalate, energy prices rise sharply, European companies face higher input costs, financial conditions tighten, and the risk of cyberattacks against critical infrastructure rises — including banks, payment processors, and large retailers. In that environment, payment resilience becomes more important, not less. A payment outage during a normal week is disruptive. A payment outage during a geopolitical energy shock is a different order of problem.

The digital euro's role in this scenario would be narrow, but real: keeping payments available if part of the private payment infrastructure came under stress. Not as an energy policy tool. Not as a replacement for gas storage or military deterrence. As a fallback payment layer.

6. Efficiency Is Not the Same as Resilience

The strongest objection to the digital euro is simple: Europe already has many ways to pay. Cards work. Bank apps work. Instant transfers are improving. Mobile wallets are convenient. Private innovation is moving quickly. So why build another system?

Because efficiency and resilience are not the same thing.

Dimension	Efficient System	Resilient System
Design logic	Minimise duplication; concentrate volume; standardise	Keep alternatives alive; avoid excessive single-point dependence

Dimension	Efficient System	Resilient System
Normal conditions	Lower costs, better UX, dominant players scale	Looks inefficient — redundancy appears unnecessary
Stress conditions	Cheapest option can become the most expensive failure	Redundancy becomes the difference between disruption and blockage
Payment example	Card-dominant ecosystem — fast, familiar, cheap	Public fallback layer that activates when private rails fail

Table 1. Efficiency vs. resilience: structural comparison across system design dimensions.

The digital euro belongs to the second category. Its value would be hard to see in ordinary conditions. That is normal. Backup systems are rarely appreciated when the main system works. But the Visa outage showed that digital payment rails can fail. Hormuz shows that global chokepoints can transmit shocks far beyond their geography. Together, they point to the same conclusion: infrastructure matters most when it is under pressure.

7. The Merchant Acceptance Problem: The Critical Precondition

The resilience argument for the digital euro depends on a precondition that is frequently understated: merchant acceptance. A fallback payment layer that merchants have not integrated into their systems provides no fallback at all.

This is the operational gap between the policy design and the economic reality. In 2018, even if digital euro wallets had existed, they would have been useless at merchant terminals not configured to accept them. Resilience is not a property of the instrument in isolation. It is a property of the network in which that instrument operates.

> **The Merchant Acceptance Challenge**
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> For merchant acceptance to materialise at scale, two conditions must be met. First, the economic case must be clear: merchants need to understand what integration costs look like, what fee savings are available at the base layer, and how the digital euro interacts with their existing payment stack. Second, PSPs and acquirers need incentives to integrate the digital euro into their merchant-facing infrastructure — without that, acceptance does not scale regardless of ECB design choices. This is the central commercial challenge for the project, and it receives less attention in institutional documentation than it deserves.

For Savion Systems, this is the practical question that matters most for PSP and merchant clients: not whether the digital euro will eventually exist, but whether the conditions for broad merchant acceptance can be established — and what the business case for early integration looks like.

8. Payments as Critical Infrastructure: The Strategic Point

Europe talks extensively about strategic autonomy in defence, energy, semiconductors, cloud computing, and raw materials. Payments rarely receive the same attention in public debate, even though they are one of the basic operating systems of the economy.

Every transaction depends on a chain of infrastructure. Someone processes the payment. Someone sets the standards. Someone controls access. Someone manages settlement. Someone decides how the system behaves under stress. As money becomes more digital, monetary sovereignty becomes more dependent on payment infrastructure.

> **The Strategic Question**
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> Europe can have excellent private payment solutions and still ask whether it has enough sovereign capacity. It can benefit from global card networks and still question whether its entire digital payment architecture should depend so heavily on non-European schemes and private intermediaries. This is not an argument against private payment companies. It is an argument against strategic complacency.

Cash provides a public payment option in the physical world: a direct claim on the central bank, no counterparty risk, no private intermediary. The digital euro is the proposal to construct an equivalent for the digital economy — not to outcompete private payment methods on speed or design, but to ensure that Europe has a public, central-bank-money-based, pan-European payment layer that operates when private rails cannot.

9. Design Conditions: What the Digital Euro Must Be

The digital euro will only be useful as a resilience instrument if it is designed properly. A poorly adopted, bureaucratic, or technically fragile system would not strengthen European sovereignty. It would add complexity without providing the fallback it promises.

Design Requirement	Why It Matters for Resilience
Easy to use	A fallback that requires technical effort to activate will not be used under stress
Privacy-respecting	Consumer adoption depends on trust; without adoption, acceptance cannot scale
Broad merchant acceptance	The fallback layer only exists if merchants have already integrated it
Compatible with PSP models	PSPs must have economic incentives to integrate; without them, acceptance stalls
Offline capability	Crisis conditions may affect connectivity; proximity payments must work without internet
Settled in central bank money	Eliminates private counterparty risk at the settlement layer — the core sovereignty argument

Table 2. Design requirements for the digital euro as a resilience instrument.

10. Conclusion: A Crisis Tool Before a Convenience Tool

The digital euro is often judged by how useful it would be on a normal day. That is understandable, but incomplete. On a normal day, it may look redundant. People already have cards, wallets, banking apps, and

instant transfers. The existing system feels good enough.

But the point of resilience infrastructure is not to look essential when everything works. It is to become essential when something does not.

In 2018, a major payment outage showed that millions of transactions can be disrupted when one important rail fails. A digital euro would not have prevented the outage, but it could have given consumers and merchants another way to complete transactions — settled in central bank money, outside the operational chain of the affected network.

In a Hormuz-style crisis, the digital euro would not protect ships, increase gas supply, or reduce oil prices. But if geopolitical stress spilled into cyber risk or payment infrastructure pressure, it could help preserve the basic ability to pay and receive money.

For both arguments to hold, one condition must be met first: merchant acceptance at scale. A fallback layer that merchants have not integrated does not exist as a fallback. This is the practical challenge that deserves the most attention from PSPs, acquirers, and institutional stakeholders in the period ahead.

> **The Real Argument**
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> The digital euro is not mainly about making payments more convenient. It is about making Europe less fragile. In a world where chokepoints — digital and physical — are becoming instruments of power, a sovereign public payment layer settled in central bank money may be more important than any individual improvement in user experience.

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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.

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