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(Markets, Infrastructures, Payment Systems)

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Fee-cap Models for Payment Instruments: a Policy Perspective

by Nicola Branzoli*, Stefano Pietrosanti* and Alessia Vita*

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Abstract

This note proposes two necessary criteria to ensure that fee-cap models for digital means of payment are both incentive-compatible and administrable. First, individual payment service providers should not be able to materially influence the fee benchmark, otherwise the rule may create incentives to adjust the prices and contractual terms that determine the benchmark itself. Second, the relevant parties should be able to verify compliance with the model at little or no cost. For example, a merchant should be able to determine easily whether a given merchant service charge complies with the applicable benchmark. This would reduce compliance costs and limit the need for costly litigation and enforcement procedures. Based on these criteria, we assess the two main proposals put forward for the compensation model of the digital euro: a merchant-specific rule and a euro area-wide average fee for comparable means of payments. We argue that fee-cap models based on individual contractual information are unlikely to meet the two criteria, while market-wide benchmarks would perform well against both.

JEL CLASSIFICATION: E41, G28, L51.

Keywords: Digital euro, payment systems, merchant service charges, fee caps, payment regulation, two-sided markets, regulatory design, fee-cap models.

Sintesi

La nota individua due criteri necessari affinché i modelli di tetto alle commissioni applicabili agli strumenti di pagamento digitali risultino al contempo coerenti con gli incentivi economici degli operatori ed efficacemente applicabili. In primo luogo, i singoli prestatori di servizi di pagamento non dovrebbero essere in grado di incidere in misura significativa sul parametro di riferimento utilizzato ai fini della determinazione del tetto commissionale; in caso contrario, la regola potrebbe indurre adeguamenti strategici dei prezzi e delle condizioni contrattuali che determinano il benchmark di riferimento stesso. In secondo luogo, i soggetti interessati dovrebbero essere in grado di verificare che la regola sia stata rispettata con costi nulli o contenuti. Ad esempio, un esercente dovrebbe essere in grado di accertare agevolmente se una determinata merchant service charge sia conforme al benchmark applicabile. Ciò contribuirebbe a ridurre gli oneri di compliance e a limitare il ricorso a procedimenti di verifica, contenzioso e enforcement potenzialmente onerosi.
Sulla base di questi criteri, analizziamo le due principali proposte per il modello di compensazione dell'euro digitale: un limite specifico per il singolo esercente e un benchmark basato sulla media delle commissioni applicate ai mezzi di pagamento comparabili nell'area dell'euro. L'analisi suggerisce che i modelli basati su informazioni contrattuali individuali difficilmente sarebbero in grado di soddisfare i due criteri, mentre i benchmark uniformi di mercato mostrano una maggiore conformità a entrambi.

1. Introduction*

The current policy debate about the digital euro (D€) compensation model considers two main models for capping the merchant service charge (MSC) paid by merchants to their acquirers. The first is a market-wide cap: a unique ceiling applied to all merchants across the euro area, or within a single Member State, calculated using a weighted average of the fees associated with comparable digital means of payment. The second model is based on a merchant-specific rule: each merchant in the euro area would have a different cap based on the lowest price that a payment service provider (PSP) charges to that merchant for comparable digital means of payments. Their combination is also possible.

At present, the Commission proposal for the Regulation on the establishment of the D€ envisages a compensation model for PSPs complying with proportionality: "any merchant service charge or inter-PSP fee shall not exceed the lowest of the following two amounts: (a) the relevant costs incurred by payment services providers for the provision of D€ payments, including a reasonable margin of profit; (b) fees or charges requested for comparable digital means of payment" (*European Commission, 2023*).

Both the Council and the Parliament, for the initial years after digital euro issuance, support a harmonized euro-area-wide MSC cap for digital euro transactions based on the volume-weighted average fees of comparable means of payment. In addition, the Council favors a national cap if the national average of comparable means of payment would be lower. The Parliament seeks an application of a so-called "no worse off" principle on top of a euro-area wide MSC cap. Such principle would set the admissible MSC for digital euro at the lowest MSC that the respective merchant currently pays for a comparable means of payment, thus tying the benchmark to the existing fees set by the acquirer, rather than a benchmark set by the regulator (*Council of the European Union, 2025* and *European Parliament, 2026*).

To contribute to the debate about this key policy decision for the digital euro ecosystem, in this paper we address the following question: ***What are necessary design criteria for the digital euro compensation model so that the objective of protecting merchants, in light of the digital euro's legal tender status, can be delivered upon?*** To answer this, we consider the dynamics of digital retail payments and summarize established and recent research results to point out necessary criteria to assess the incentive-compatibility and administrability of price regulation models.

We argue that a fee-cap model is incentive-compatible and administrable if its underlying basis is outside PSPs' material influence and verifiable at a reasonable or no cost by relevant parties. We then consider how existing payment fee structures, scheme competition and merchant size interact with each model, and ask whether a market-wide cap and a merchant-specific rule would meet the two criteria. We also argue that a targeted exclusion of very low value payments from the MSC would perform well against the two criteria.

We structure the note as follows: Section 2 describes the state of the European payment market, and how it can disfavor small merchants, concluding with

* We thank Martina Muscariello for outstanding research and editorial assistance.

why the digital euro has the potential to be different. Section 3 introduces the two criteria for assessing the incentive-compatibility and administrability of a fee-cap model and applies them to the main models under discussion for the digital euro compensation model. Conclusions summarize the main findings of the paper.

2. Background

2.1 Existing pricing of electronic payments: merchant size, volume discounts and market reach

Merchants typically accept electronic payments through cards, digital wallets, account-to-account transfers, and electronic money solutions. Their acceptance is priced through merchant-specific contracts, not through a single market tariff. A Merchant Service Charge (MSC) is systematically applied to card payments and, where card rails are used, to digital wallet transactions. The MSC reflects the cost of the payment chain and the acquirer's margin, while the effective costs paid by a merchant also depend on the distribution of transaction values, volumes, card mix, channel and the overall structure of the contract (e.g. fixed vs. variable fees).

This makes merchant scale central to the acquiring market. Large merchants bring high and predictable volumes, spread fixed onboarding, servicing and technology costs across many transactions, and can credibly compare or switch providers. These features allow them to negotiate discounts that are generally unavailable to smaller merchants. The need to achieve network effects in an industry with high fixed costs implies that a private operator has incentives to attract large merchants where people spend often (e.g. public transport networks, large value chains) with very low prices, while small merchants are under strong pressure to accept payment instruments that have become widely used.

Small merchants tend to pay more, not because the payment service is intrinsically different, but for reasons that include their likelihood to have less alternatives, among others. They generate less volume for the acquirer, have less scope to spread fixed acceptance costs, and usually possess less specialised procurement capability. The size of a merchant can be a proxy for its transaction volume, ticket size, contract structure, card mix and other factors as well as bargaining power (*Padellini and Pietrosanti, 2026*). In fact, the European Commission's review of the Interchange Fee Regulation documents limited bargaining power and difficulty switching acquirers among many small merchants (*European Commission, 2020*).

Long-term contracts and blended fee schedules can delay the pass-through of lower interchange costs into lower MSC (*European Commission, 2020*). Recent evidence collected by the Bundesbank, as well as forthcoming survey research from Banca d'Italia point to the same conclusion: smaller retailers face significantly higher payment costs than larger ones, likely due to the stronger bargaining of large merchants (*Ego, Knümann and Korella, 2026*; *Padellini and Pietrosanti, 2026*).

The size gradient can be large. An ECB estimate based on currently available market data indicates that European merchants pay a weighted-average fee of around 0.50% per transaction for international card schemes, while smaller merchants can pay up to three to four times the fees paid by large merchants (*ECB, 2025a*).[1]

Transaction value creates a second and distinct source of variation in merchants' effective payment costs. Card transaction fees may combine an amount proportional to the sale with a fixed per-transaction component. The latter necessarily represents a larger percentage of a low-value purchase. When merchant fees contain a significant fixed per-transaction element, low-value transactions bring disproportionately high acceptance costs. Recent merchant-cost evidence confirms that a merchant's exposure depends on its transaction-value distribution as well as on its scale.[2]

2.2 Why national card schemes are underpowered outside options

National card schemes historically operated with relatively low interchange fees compared with international schemes. Still, their market share is declining (*European Commission, 2020*).

In fact, economies of scale operate also at the scheme level. International card schemes combine a large incumbent base of cardholders with broad merchant acceptance across countries and channels. A card issued on an international scheme can be used across the euro area and beyond and, unlike most national solutions, both at the physical point of sale and in cross-border or online transactions. This reach is valuable to consumers and banks and reinforces itself: broad acceptance makes the card more attractive to issue and use, while extensive issuance makes it harder for merchants to refuse. The resulting network effects favour schemes that already operate on a scale.[3]

Volume discounts can also reinforce economies of scale at scheme level. Large networks have more margin to offer steeper volume discounts to the largest issuing and acquiring PSPs. In turn, PSPs obtain the highest margins when their small, marginal clients are paid through the large network. This creates an incentive for PSPs to actively promote the use of large networks among their clients, particularly on the issuing side.

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1 This figure should not be read as a euro-area average premium or as applying to every payment method. Indeed, comprehensive information is difficult to obtain because card fees are not generally subject to EU reporting requirements. The European Commission's review of the Interchange Fee Regulation points in the same direction, though exploiting earlier information: in its 2017 sample, credit-card charges for merchants with turnover of €250–500 million were roughly twice those paid by merchants above €1 billion, although the comparison covers large firms and cannot identify the premium faced by genuinely small retailers (European Commission, 2020).

2 Ego, Knümann and Korella (2026) documents that card transaction fees commonly combine a percentage of the sale with a fixed amount and finds that payment costs relative to turnover are materially higher in sectors characterised by lower transaction values. ECB (2023) similarly distinguishes fixed and value-related merchant costs and identifies transaction costs as a central obstacle to economically viable micropayments. See also Junius et al. (2022) and Banca d'Italia (2025) on the relationship between payment amount, sectoral transaction composition and the incidence of acceptance costs.

3 Concerning the importance of network effects in payment markets see, for example, Alvarez et al. (2026).

Recent data show the outcome of scale effects. In 2022 international card schemes accounted for approximately 61% of euro-area card payments, while national schemes accounted for 39%. Thirteen euro-area countries relied entirely on international schemes for card transactions. Only eight national card schemes remained active in the euro-area in 2024, each confined to a single Member State, and the ECB reports a broader decline in their domestic market shares (*ECB, 2025b*).

These effects weaken domestic schemes at both issuance and acceptance and for innovation. The Eurosystem has previously noted that pan-European acceptance of national-scheme cards has depended on co-badging with an international scheme and that PSPs have increasingly issued cards carrying only an international brand. Cross-border reach, early deployment in online and contactless payments, and the convenience of one card for domestic and cross-border use have reinforced the international schemes' position. At the same time, national schemes must support investment and innovation from a smaller transaction base, making pan-European expansion difficult without shared infrastructure and common standards (*ECB, 2019*).[4]

Fragmentation of technical standards reinforces the acceptance hurdle. Europe still lacks a universally available open standard supported across payment terminals and depends heavily on proprietary standards owned by international card schemes and global digital wallets. This means that a domestic or new European solution cannot simply make use of the incumbent acceptance layer on equal terms. It must either secure compatibility through the incumbent ecosystem or finance the integration needed to reach merchants.[5]

The commercial incentives of PSPs follow this market structure. An international scheme offers immediate reach, established functionality and a card that can serve multiple use cases. A domestic scheme offers a narrower market and requires additional investment to extend acceptance. These market characteristics may make international products commercially more attractive for PSPs to distribute, particularly where they offer broader reach and established functionality. Such asymmetries make national solution to Europe-wide payment market issues underpowered.

Furthermore, small merchants face higher switching costs. Refusing a widely used payment method is commercially costly, while such firms' scale and procurement capability give them weaker switching and bargaining options. Since schemes can distinguish captive from contestable customers, price differentiation may result in less favourable terms for merchants with limited ability to switch across networks. Recent research suggests that, in most relevant cases, such discrimination reduces aggregate customer welfare relative to more uniform pricing because, for the same total profit, it concentrates losses among the weakest players (*Armstrong and Vickers, 2019*). The same

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4 Furthermore, exclusivity incentives offered by the international schemes may induce banks to abandon domestic networks, weakening alternative infrastructure and increasing strategic dependence, as recently reported concerning the evolution in the market share of French CB card scheme (Financial Times, 19 April 2026).

5 The ECB's 2026 agreements to reuse open European standards for digital euro payments are intended to reduce precisely this barrier: the stated objective is to allow European payment solutions to expand geographically without requiring merchants to upgrade their POS terminals (ECB, 2026).

reasoning suggests that using each merchant's existing bargain as the measure of the protection it should receive would be an inefficient measure, as it would preserve the inefficiently unequal market outcome.[6] Merchants, especially smaller ones, are keen to accommodate the way the customer wishes to pay or risk losing the sale. Such asymmetry means that payment schemes left to their means are likely to squeeze the merchant side (*Bedre-Defolie and Calvano, 2013*, *Rochet and Tirole, 2011*). Such mechanisms explain why the payment market is heavily regulated.

2.3. Why the digital euro has potential to be an outside option

The digital euro is different: co-legislators secured the circulation of the official currency where it is legal tender, establishing a wide acceptance basis. In fact, the digital euro legal tender status puts an obligation on merchants to accept it for any transaction of any amount. Considering this, the rationale for exporting the degressive price structure which a private operator requires to achieve network effects into the digital euro is questionable. Rather, as a publicly issued money with legal-tender status, pricing for digital euro should ensure proportionality and account for the obligation of merchants to accept digital euro. The fee caps foreseen for digital euro, possibly complemented by a targeted exemption in the MSC for low value transactions, should deliver on that objective. In effect, the digital euro could provide merchants, and especially micro and smaller enterprises, with a credible outside option.[7]

3 Fee-cap assessment

3.1 Two necessary criteria for administrable and incentive-compatible fee-cap models

We argue that any administrable and incentive-compatible fee-cap model must meet at least two criteria. Regulation of complex pricing schemes fights an uphill battle, as contracts and technology can change continuously, while regulation can only adapt slowly. Furthermore, any regulatory intervention must account for strategic, behavioural responses to the regulation itself (*Baldwin et al., 2011*). Therefore, authorities need to carefully design any fee-cap model in order to be robust against complex industry structures and price dynamics.

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6 In particular, Armstrong and Vickers (2019) concludes that discrimination against captive customers is inefficient whenever these are distributed among the imperfectly-monopolistic suppliers. The conclusion could fail in the extreme case of a duopoly and perfect concentration of captives within one duopolist. In such case, uniform pricing would incentivize the duopolist serving the captives to set a very high price, undermining the outside option of the customers of the other duopolist. Hence, uniform pricing would raise the price of customers that could switch too. While exact evidence on the relative distribution of small merchants among international card schemes in Europe is lacking, large international card schemes account for almost two-thirds of digital transactions initiated in the euro area (Cipollone, 2024) and can thus be considered "must-take" payment options for merchants large and small.

7 Recent research stresses that providing merchants credible outside options in payments could go further than caps on prices of existing debit and credit card transactions as done via the Interchange Fee Regulation (*Inderst, Valletti, and Wentzien, 2026*).

The first criterion is exogeneity and robustness of the pricing rule. By exogeneity, we mean that any price benchmark for payment services must be outside the material influence of any individual supplier that is to be regulated. The less the benchmark can be influenced by the strategic responses of individual firms, the more incentive-compatible it is.[8] By robustness, we mean that the same benchmark must survive re-optimisation across the margins that remain available to PSPs. The pricing rule must account for how payment contracts are complex, and PSPs can manage many different fees and discounts, lest it becomes an incentive to reshuffle pricing items rather than a constraint on the effective price.

The second criterion is verifiability. Verifiability asks whether the relevant parties (in particular the merchant) can check compliance objectively and conveniently. Verifiability is not merely an implementation consideration. The background to this is a central problem in regulatory theory, namely information asymmetry. It is a distinct design criterion because a price cap can be economically well-founded yet difficult to enforce if the parties that need to assess compliance cannot independently reconstruct the applicable benchmark. Two features are particularly relevant: whether the benchmark is observable by both parties without access to the other party's internal information, and whether compliance can be checked against a fixed public value or instead requires a case-by-case counterfactual reconstruction.

A PSP knows more about its cost and price structures than the regulator or other parties. A cap that depends on information that is observable primarely to the intermediary is inherently more difficult to verify than a cap based on information that is independently observable or standardised. On top of this, verifiability can also be affected by the fee structure chosen by the merchant, being it unbundled or blended. The two pose a trade-off between transparency of cost components and easiness to manage. Blended fees, although harder to interpret, tend to be easier to manage and thus often preferred by smaller merchants, making in turn verifiability more complex. A high verification burden can decrease the chance of detecting non-compliance, and thus make a cap less administrable.

3.2 Implications for a fee-cap model for the D€

In this section, we briefly apply the two criteria to the options for D€ compensation model for the first years after digital euro issuance that are currently under discussion, namely a merchant-specific rule and a market-wide benchmark.[9] In addition, assuming that the fee benchmarks are well designed, we consider what level of protection they would afford to merchants. In doing so, the numerical level of any ceiling is outside of our scope. The exclusion of qualifying low-value transactions from the merchant service charge is considered within the same framework. It is not an alternative benchmark

[8] We acknowledge that competition, regulatory oversight, and reputational constraints can play a role in limiting potential strategic behavior by market participants and that the existence of economic incentives does not necessarily translate into observable large-scale conduct.

[9] Table A1 and A2 in the Appendix discuss in depth the application of the test to different compensation model models for small and large merchants, in Euro Area member states with low or high fees on average.

comparable to a merchant-specific rule or a euro-area cap, but an additional feature that could be combined with any of them. The underlying policy question is, given an existing heterogeneous distribution of merchant prices, what happens when regulation uses those individual prices themselves as the benchmark?

A merchant-specific rule ("no-worse-off" or "better than") underperforms against both criteria because its benchmark is endogenous to the pricing of the PSP. The unique element of a merchant-specific MSC cap based on the cheapest comparable means of payment accepted by the merchant is that the basis for the price cap is the price of comparable product that is also set by the intermediary. Applying a merchant specific rule requires determining the effective price of a comparable payment instrument for the individual merchant. This may involve merchant-specific discounts, rebates, fixed charges, bundled services, transaction volumes, merchant category and the relevant reference period. The resulting benchmark may therefore depend on information held primarily by the PSP and may be difficult for the merchant or an external authority to verify independently and at reasonable cost.

Disputes may arise not only over the amount of the fee, but also over the appropriate comparator and the components that should be included in the effective price. In fact, such benchmark construction is endogenous to existing pricing decisions may create incentives to reallocate or restructure the prices and contractual terms. Clearly, a merchant-specific benchmark fails the exogeneity and robustness test whenever the same PSP can affect directly the yardsticks pinning down the pricing rule (*Shleifer, 1985*).

Moreover, the benchmark might not be robust because it depends on how the price for the specific comparable means of payment would be translated to the MSC for digital euro. This would be a very difficult exercise for anyone to undertake, but the additional, unique problem would be that it could only be undertaken by the two parties that have conflicting incentives, namely the PSP and the merchant. Due to the individualized nature of the benchmark, the translation could not be defined centrally by the regulator. As PSPs have more information about the pricing structures and more capacity to carry out such translations than merchants, merchants would likely have problems identifying non-compliance, which would negatively affect the administrability and incentive-compatibility of the cap. In other words, merchants would face a high verification burden, which could decrease compliance.

Assuming that merchant-specific benchmarks were effective constraints on the MSC for digital euro, it is relevant to consider the heterogenous levels of protection they would afford to merchants. In short, the level of protection is tied to the merchant's contractual position.

Because the merchant-specific rule is tied to the price of a comparable payment instrument, a PSP may have an incentive to increase, reallocate or restructure that price, thereby influencing the applicable benchmark. Evidence from debit-card regulation shows that platforms and banks can re-optimise across the two sides of the market after a cap is introduced, with effects on prices and the distribution of value across participants (*Mukharlyamov and Sarin, 2025*; *Wang, 2013*).

We acknowledge that the heterogeneity of pricing schemes may also complicate the identification of appropriate inputs for the computation of a market-wide cap across comparable payment instruments. Nonetheless, two key distinctions between market-wide and a merchant-specific rule emerge. First, where the cap is defined on the basis of a euro area-wide benchmark, established by the European Commission with the technical support of the European Central Bank in data collection and calculation activities, the responsibility for ensuring data quality and methodological consistency is with a public authority. Second, a merchant-specific cap is designed in a way that may create incentives for strategic behaviour. In fact, adjusting the pricing of other means of payment applied to an individual merchant directly influences the digital euro cap for that same merchant. By contrast, a market-wide benchmark is less susceptible to strategic pricing decisions. Even in relatively concentrated markets, influencing the benchmark would require fee adjustments to be applied across a PSP's broader customer base rather than to a single merchant relationship, making targeted interventions significantly less effective and wide interventions too risky in terms, for example, of losing customers to competitors.

A merchant-specific rule may also preserve the degressive price structure of existing merchant pricing, whereby firms with stronger negotiating positions may obtain a relatively low D€ ceiling under the merchant specific rule, while smaller merchants with weaker initial terms would receive correspondingly weaker protection. When applied on top of a common ceiling, its additional protection is therefore concentrated among merchants that already pay below that ceiling. When applied as a stand-alone rule, the problem of replicating the degressive price structure is especially acute in Member States where acceptance charges are already high, since the rule may reproduce both cross-country differences and within-country inequalities rather than provide an external reduction in the benchmark.

Market-wide benchmarks such as the weighted average caps in the Council's and Parliament's proposals perform comparatively well against both criteria. A ceiling based on a euro-area average of fees of a broad basket of comparable means of payment is external to individual merchant contracts. While the ceiling would depend on accurate reporting by PSPs, it will be less materially affected by the strategic pricing decisions of individual firms. In terms of robustness, it would perform well because its calculation would be based on objective parameters that would be defined centrally by the regulator and apply to all. In fact, a key and urgent task of the delegated acts of the Regulation is to specify the basket of comparables, weights, covered fee components, reference period and updating method. Being these criteria specified, the ceiling can be calculated from an agreed market-level dataset rather than reconstructed separately for every merchant.

For merchants to verify whether they are being charged a cap-compliant fee, it is important that the actual MSC charged for digital euro comes in the same format as the MSC cap is published in. Then, it would be very easy for the merchant to identify if it is being charged a cap-compliant fee: it only has to compare two numbers, namely the digital euro MSC cap level, and the digital euro MSC it is being charged. The benchmark is more transparent, reproducible and less dependent on privately held information.

A market-wide cap based on comparable means of payment would apply to all merchants and would bring benefits particularly to small merchants which tend to face weaker bargaining conditions and higher effective charges today. Large merchants may already have negotiated prices below the ceiling, in which case the ceiling would not bind but also not prohibit them from negotiating lower prices with acquirers.

The two criteria are necessary conditions for an administrable and incentive-compatible benchmark; they are not sufficient for assessing the overall desirability of a compensation model. That assessment also depends on the calibration of the cap, its incidence across merchants, and whether the resulting remuneration permits sustainable provision of acquiring and distribution services[10]. The current policy debate on the fee-cap model for the digital euro should also assess how the proposed solutions perform against these issues.

Conclusions

Drawing on established insights from regulatory economics, this note proposed two necessary criteria for an administrable and incentive-compatible fee-cap model. First, the benchmark underlying the cap should be sufficiently exogenous to and robust vis-à-vis the pricing decisions of any party, and compliance with the cap should be verifiable at reasonable cost by the relevant parties.

Applying these criteria to the main options currently discussed in the policy debate on the introduction of the digital euro suggests that market-wide benchmarks perform more favourably against these two criteria than merchant-specific rules. Benchmarks based on aggregated market information are less susceptible to being influenced by individual contractual decisions, can be calculated according to transparent and publicly specified methodologies, and allow compliance to be assessed against a common reference value. By contrast, merchant-specific benchmarks tied to existing contractual conditions risk making the regulatory constraint endogenous to the very pricing decisions it is meant to regulate, while also creating substantial verification challenges.

The analysis also highlights that the choice of benchmark has distributional implications. Merchant-specific rules tend to preserve existing differences in contractual conditions across merchants.[11] Market-wide benchmarks are more likely to strengthen the position of merchants that currently face comparatively weak bargaining conditions. A targeted exclusion of qualifying low-value transactions from the merchant service charge appears to be broadly consistent

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10 The analysis focuses on the design of the merchant-facing MSC benchmark. In the digital-euro compensation model, however, the economic incidence of that benchmark will also depend on the inter-PSP fee and on the allocation of costs and revenues between acquiring and distributing PSPs. A benchmark that lowers the MSC while leaving the inter-PSP fee unchanged may affect acquiring margins even if it performs well against the criteria considered here.

11 When applied on top of a market-wide ceiling, they can provide additional protection to merchants that already pay fees below the common benchmark, by providing certainty that those more favourable conditions are carried over to digital-euro transactions. Nevertheless, these are also the merchants most likely to be able to negotiate fees below the ceiling even without a merchant-specific rule. At the same time, they provide no additional protection to merchants already paying above the common ceiling and retain the complexity and endogeneity associated with merchant-specific benchmarks.

with both design criteria and may constitute a useful complement to a fee-cap regime.

More broadly, the paper suggests that the effectiveness of any compensation model ultimately depends on ensuring that regulatory benchmarks remain robust to strategic adaptation while remaining simple enough to be monitored and enforced. The two criteria considered here are necessary but do not exhaust the assessment of the model: its overall economic effects will also depend on the calibration and bindingness of the cap, its interaction with the inter-PSP fee, and possible dynamic effects, including the risk that a non-binding ceiling becomes a pricing reference in lower-fee markets.] While further work will be required to define the precise calibration of any fee cap and its operational parameters, the criteria proposed in this note provide a useful framework for assessing alternative regulatory designs and their consistency with the policy objectives of the digital euro.

ASSESSING THE EXEMPTION OF LOW VALUE PAYMENTS FROM THE MSC

As argued in Section 2, economies of scale that operate at various layers of the payment services market make payment acceptance costs more burdensome for micro and small merchants than for larger retailers. Hence, even a limited per-transaction fee could represent a comparatively significant share of the value generated by sales of smaller firms.

A tailored exemption for transactions below a given threshold could favour the inclusion of micro and small merchants and promote adoption, while performing well against the two criteria considered in this paper.

In fact, a transaction-value threshold can be defined independently of PSP pricing decisions and be verified directly from payment records, so that the feature performs well in terms of exogeneity and verifiability. The benefit to each merchant would depend on its transaction mix rather than on merchant size alone.

Its robustness would depend on implementation. For example, in line with the objective of promoting the cost-efficient acceptance of the digital euro by merchants, particularly micro and small enterprises, the exemption could be linked to the number of employees and/or the annual turnover of a merchant.

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APPENDIX

Table A1 – Benchmark design, bindingness and mechanical protection

Model	Benchmark mechanics	Exogeneity and robustness	Verifiability	Implications for merchants	Overall assessment
Panel A - Benchmark designs					
Euro-area market-wide cap	Sets a common ceiling from a weighted euro-area basket of comparable digital-payment charges.	The broad benchmark is external to individual merchant contracts and difficult for one PSP to move materially. Robustness depends on a comprehensive fee perimeter and consistent aggregation.	Strong if the basket, weights, covered fee components, reference period and update method are specified in advance and can be independently recalculated.	More likely to bind in high-fee Member States and for merchants with weaker initial terms. It may be non-binding for large merchants or in low-fee markets and cannot mechanically raise existing charges.	Sound general benchmark, but potentially loose where prevailing national charges are below the euro-area average.
Merchant-specific rule	Sets each merchant's ceiling at the price of the cheapest comparable means it already accepts.	Weak. The benchmark is tied to the merchant's contract and may be influenced by benchmark manipulation.	Weak. Compliance checks require granular reconstruction of merchant-specific fees, rebates, volumes, periods and bundled services.	Reflects existing cross-country and within-country differences. Large merchants with favourable terms receive lower ceilings; smaller merchants with weaker bargains receive less protection.	Weakest model: endogenous, costly to verify and least effective for merchants with the poorest initial outside options.
Panel B – Such feature could be combined with each and every option in Panel A					
Low-value exclusion	Sets the merchant service charge to zero for qualifying transactions below a clearly defined value threshold. It can be combined with any benchmark.	The trigger is strong because transaction value is independent of PSP pricing. Robustness depends on preventing charges attributable to qualifying transactions from being relabeled.	Strong if the threshold, measurement point, covered transactions, refunds, reversals, split payments and charge perimeter are specified and observable.	Direct benefit depends on each merchant's share of qualifying transactions, not merchant size alone. It is greatest where fixed or minimum components weigh heavily on low-value sales.	Desirable cross-cutting complement, conditional on a comprehensive charge perimeter and safeguards against direct circumvention and indirect recovery.

Note: A cap is a maximum permitted charge, not a mandated tariff. A ceiling above a merchant's current effective price is non-binding and does not mechanically increase that price.

Table A2 – Dynamic incentives and possible response channels

Model	Main dynamic channel	Condition	Distributional exposure	Mitigation and residual risk
Panel A – Benchmark designs				
Euro-area market-wide cap	Where the cap is binding, the digital euro strengthens merchants' outside option and may pressure comparable acceptance charges downward.	Downward pressure requires the ceiling to undercut existing effective charges.	Small merchants may benefit most where weak bargaining leaves them above the cap. Large merchants with existing discounts may see little change.	Use a broad, representative basket and monitor whether the ceiling becomes a pricing reference. A lower national benchmark can reduce the residual risk in low-fee markets.
Merchant specific rule	The D€ ceiling moves with each merchant's benchmark, creating incentives to raise, reclassify or rebundle that price.	The channel operates whenever the benchmark can be influenced by the PSP or other suppliers whose charges determine the NWO benchmark.	Small merchants are more exposed because weaker bargaining limits resistance to repricing. Existing cross-country and within-country inequalities remain embedded in the ceiling.	Detailed reporting and audit rights may improve detection but cannot make the benchmark external. Residual manipulation and compliance costs remain high.
Panel B – Such feature could be combined with each and every option in Panel A				
Low-value exclusion	PSPs may try to recover foregone revenue through non-qualifying D€ transactions, recurring or ancillary charges, bundles, or prices for other services.	Direct circumvention arises when charges attributable to qualifying transactions are relabeled. Broader rebalancing may occur after introduction but lacks a pre-existing D€ tariff as a counterfactual.	Impact depends mainly on merchants' share of qualifying transactions. Merchants with weaker bargaining may be less able to resist adjustments elsewhere, but merchant size does not determine the direct benefit.	Define a comprehensive charge perimeter and anti-circumvention rules. A market-wide cap limits recovery through non-qualifying D€ transactions; broader rebalancing should be monitored as a market response, not presumed to be a violation.

Note: The table identifies incentives and possible response channels, not quantitative predictions. Their direction and magnitude depend on bindingness, competition, contract structure and merchants' ability to switch or bargain.
Note: For the low-value exclusion, direct circumvention and broader rebalancing should be distinguished. Broader rebalancing cannot be assessed against a pre-existing D€ tariff and is not automatically a regulatory violation.

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