CRYPTOCURRENCY VERSUS TRADITIONAL BANKING FEES IN SMALL-VALUE CROSS-BORDER TRANSFERS

Middle Georgia State University

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by

BOBBY BODDIE

B.A., University of Alabama in Birmingham, 2006

M.S., Bellevue University, 2008

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Bobby Boddie, Middle Georgia State University, bobby.boddie@mga.edu

Abstract

This study compares transaction fees in cryptocurrency-based payment networks with those in traditional cross-border banking systems for small-value transfers. Based on qualitative document analysis and publicly available fee tables, this paper assesses the transparency of fees, structural differences of pricing schemes, as well as proportional costs for transfer amounts between USD 200 and USD 500. The study reveals that traditional banking relies largely on flat-fee pricing schedules leading to disproportionately high transaction costs for small-value transfers in comparison with cryptocurrencies which apply congestion-based or protocol fixed fees which are generally lower in proportional terms. By standardizing cost categories across distinct payment architectures, this study contributes to ongoing debates regarding the cost-efficiency and pricing governance of decentralized versus traditional payment systems.

Keywords: Cryptocurrency, Cross-border payments, Banking fees, Small-value transfers, Remittances, Transaction costs

Introduction

Cross-border payment systems allow customers worldwide to conduct financial transactions. Without this system, global marketing commerce would be limited (Guo & Wang, 2024). Historically, this service has been provided by Traditional banking institutions. They provide cross-border payment services to customers via wire transfers and remittance services (Botta & Nadeau, 2022). Although widely used, traditional banking systems have been characterized as slow, costly, and lacking transparency (Choi et al., 2017). Small businesses and individuals see the greatest impact of these inefficiencies, experiencing remittance fees between 7-10% of the transaction's value (He, 2021). Consumers frustrated with this system have embraced cryptocurrency as an alternative method for reducing costs and improving settlement times (Sajter, 2022).

Cryptocurrency is seen as a significant innovation with its ability to offer peer-to-peer transactions by utilizing blockchain networks that can reduce or eliminate transaction fees (Ahluwalia et al., 2020). Unlike complex traditional systems, peer-to-peer transactions eliminate the need for intermediaries, which could reduce costs and offer almost real-time settlement via blockchain networks (Adil & Fadi, 2022). Digital currency offers speed and transparency, while reducing cost and increasing availability (Cocco et al., 2017). This system can reduce pressure placed on small-value cross-border transfers that are heavily burdened by costly transaction fees (Saiedi et al., 2021).

Although cryptocurrencies have seen a rise in adoption and discussion (Gowda & Chakravorty, 2021), there has been no empirical data to verify these claims. Much of the existing literature has focused on the emergence of technology and regulations; very little has examined direct comparisons between traditional banking cross-border payments and cryptocurrency-based payments, particularly for small-value transactions. This study will focus on low-value transactions to determine whether cryptocurrency has

measurable cost benefits and to establish empirical evidence to support ongoing discussions regarding the economic impact of blockchain-based payment technology.

Traditional banking cross-border transfer systems often apply fixed fees, intermediary charges, and currency conversion costs that may be relatively high for small-value transactions (Gowda & Chakravorty, 2021). While cryptocurrencies are frequently put forward as a potentially less expensive solution for international payments (Islam et al., 2023), research to date has predominantly studied either the technological or market implications of cryptocurrencies rather than conducting direct, consumer-level fee comparisons. Specifically lacking in the literature is a standardized empirical study that compares cryptocurrency transaction fees to those applied by traditional banking cross-border transfer systems for small-value transactions. The absence of such focused research limits consumers, policymakers, and financial institutions' ability to consider the cost-efficiency implications of cross-border payment methods among acceptable alternatives. This research outcome is to address this gap by analyzing publicly available data.

The purpose of this study is to compare small-value cross-border transaction fees using publicly available data, examining cryptocurrency blockchain-based payment systems alongside traditional banking transfer systems. Standardized comparison metrics are used to assess the cost efficiency of both payment methods. By specifically considering consumer-level transaction costs, the researchers' study aims to contribute to the literature, which lacks clear evidence to help consumers, policymakers, and financial institutions assess alternative cross-border payment solutions. The purpose of this research is to answer the following questions:

RQ1: What emerging themes are identified in the literature through thematic analysis regarding cryptocurrency-based payment systems and transaction costs?

Review of Literature

Traditional Banking Cross-Border Transfer Fees

Existing literature on cross-border transfers in traditional banking underscores the opacity, inefficiency, and high costs of correspondent banking networks (He, 2021). International wire transfers are processed through multiple financial institutions, which can charge service fees, intermediary fees, and foreign exchange conversion costs (Gowda & Chakravorty, 2021). These fixed and semi-fixed fee structures tend to disproportionately penalize low-value payments as fees constitute a larger fraction of the payment amount (Saiedi et al., 2021). Consequently, people (and small firms) who send or receive low-value international wire payments are observed to face high transaction costs when using traditional banking services

(He, 2021).

Additionally, studies argue that fee transparency is lacking in traditional banking and is a defining characteristic of the industry. In addition to stated transfer fees, consumers may also be charged with hidden costs (e.g., exchange rate markups and receiving bank charges) that are not explicitly provided during the transaction (AllahRakha et al., 2025). This ambiguity makes cost calculations for users difficult when comparing different cross-border remittance methods or services. Although the regulatory aspects and trustworthiness of existing correspondent banking systems allow the process to work reasonably well for

large value payments from the majority population's perspective, existing literature implies an inefficient pricing model for low-value cross-border remittances (Sajter, 2022).

Cryptocurrency Transaction Fees

Research on cryptocurrency transaction fees has primarily revolved around the technical and economic principles underlying blockchain networks (Ahluwalia et al., 2020). For instance, network congestion, block capacity, and fee priorities set by users are found to shape transaction fees among Bitcoin and Ethereum (Stephen & Alex, 2018), implying variable costs rather than fixed costs. Unlike traditional banking fees, cryptocurrency transaction costs are not tied to compensating intermediary institutions, prompting researchers to explore whether this structural difference can reduce overall transaction costs.

More recent studies have examined stablecoins, highlighting their potential as payment instruments due to price stability and relatively low transaction fees (Hayashi & Routh, 2025). Certain studies assume that stable coins backed by efficient blockchain networks are predictable and low-fee cross-border alternative payment methods (APMs). However, most research studies still focus on network latency, scalability, or security instead of cost outcomes at the consumer level (Sajter, 2022). Consequently, empirical evaluations comparing the user-to-user transactional costs between cryptocurrency and traditional bank-based APMs, mainly for small-sized values, remain relatively limited (Sajter, 2022).

Comparative Studies and Identified Research Gap

While the literature contains numerous insights into traditional banking cross-border transfer fees and the technical features of cryptocurrency transactions, these two bodies of literature tend to develop in isolation from one another. Comparative discussions are usually observed in industry reports or policy-oriented papers, which rarely provide standardized methodologies or peer-reviewed empirical standards. Most comparative analyses emphasized either transaction speed, financial inclusion, or system efficiency while neglecting consumer-level fee comparisons (Sajter, 2022; Sievers et al., 2024).

As a result, there is limited comparable academic research on the standardized empirical comparison of cryptocurrency transaction fees and traditional banking cross-border transfer fees for small-value transactions. This lack of insight does not provide consumers, policymakers, and businesses with sufficient evidence to evaluate the cost efficiency of alternative solutions for cross-border trade

(Ahluwalia et al., 2020). By providing such scientific comparisons, this will broaden the horizon on the cross-border cost picture for both conventional and new payment systems, from the perspective of small retail customers.

These structural differences can be more systematically understood using transaction cost economics, which highlights how institutional arrangements design the costs of exchange. Drawing on Williamson (1985), hierarchical intermediation is a feature of legacy-banking systems in which multiple intermediaries are involved in processing and settlement, thereby increasing coordination and monitoring costs. In contrast, blockchain-based systems replace centralized intermediation with protocol-driven validation, thereby shifting the cost of transactions from administrative pricing to algorithmic fee markets. Thus, pricing differentials should not be seen as coincidental but rather as evidence for embedded governance structures of competing payment architectures.

Methodology

This study employs qualitative research design, as its purpose is to gain an in-depth understanding of how cryptocurrency transaction fees are compared with traditional banking cross-border transfer fees for small-value transactions (Creswell, 2016). Qualitative research design is most appropriate because the intention is to explore and understand general information about fee structures, pricing mechanisms, and transparency practices related to the provision of payment services across different payment systems, rather than generate statistically reliable or generalizable numerical results (Braun & Clarke, 2013).

The study employs a document-based qualitative analysis (Bowen, 2009) in which the existing literature on pricing issues associated with cross-border transfers is analyzed alongside relevant policy documents and publicly available periodic fee determinations.

The advantage of analyzing qualitative data from authoritative sources lies in the ability of this approach to facilitate identification of re-occurring patterns, major themes, and logical interpretations related to variations in the structuring and communication of transaction fees between different providers (Morgan, 2022) while also aiding understanding regarding contextual factors that in terms of institution-specific practices (e.g., differences between banks) or network specificities may help explain why some fee types dominate in certain settings other than others (Prior, 2003).

Data Sources

The data was obtained through two primary avenues: the first was peer-reviewed academic literature addressing cross-border payments as well as fees related to cryptocurrency transaction processing; the second was the availability of publicly available transaction processing fees (transaction size or amount charged) contained within institutional publications and analyzed by various entities such as blockchain analysis companies. All sources included in this analysis were those that provided transparent, verifiable and consumer-relevant fee data on the subject matter.

Search Strategy

A systematic search approach was used to identify relevant literature. Electronic searches were conducted using the following academic databases: Google Scholar, EBSCO, ScienceDirect, IEEE Xplore, and ProQuest. Institutional and policy literature was captured through purposive Internet searching of official organization websites.

Search terms were constructed by combining keywords and Boolean operators:

“Cross-border payments,” “wire transfers,” “remittances,” and “small-value transfers” coupled with “transaction fees,” “payment costs,” “processing fees” and one of either “cryptocurrency,” “blockchain”, or “stablecoins.”

Publication dates were restricted from 2017 through 2026 to maintain contemporary relevance.

Eligibility Criteria

Only sources that contained verifiable consumer-level transaction fees for either traditional cross-border banking activities or cryptocurrency systems from recognized academic or institutional publications were included. Sources were excluded if method was not clearly stated, focused on speculation, or contained only opinion (or non-verifiable) assessments of transaction fees.

Fee Measurement and Standardization Procedure

Transaction fees are measured and compared with uniform methodologies across payment systems to standardize how transaction fees are defined. Transaction costs are defined as the total cost incurred by the user to facilitate cross-border transactions. Examples of transaction costs incurred in traditional (non-cryptocurrency) payment systems include bank wire fees, intermediary fees, and foreign exchange mark-ups. Examples of transaction costs incurred in cryptocurrency (decentralized) payment systems include users paying for miners and gas fees associated with the processing of their transactions.

Data Extraction

For each payment method, multiple fee values were collected from different sources; when sources provided fee values for the same item, values were compared to find ranges that were similar. In the case of extreme outliners that were not supported by multiple sources, those values were excluded.

Temporal Standardization

As fees are influenced by network congestion and volatility, fee data were collected in an observation window (January–March 2026). Consequently, the reported values are the average fee conditions observed during this period and are not a peak or an outlier spike.

Aggregation Approach

Fee values are presented as indicative ranges rather than point estimates and reflect commonly observed values across sources. Median values within observed ranges were used for interpretation requiring central tendency to minimize possible distortion from extremely high or low observations. All reported fee ranges represent median-supported indicative ranges, derived from multiple consistent observations within the defined time window, rather than arithmetic averages or single-point estimates.

Currency Standardization

All fee values reported were converted to the US dollar (USD) to make the fees from each country comparable to one another.

Proportional Cost Calculation

To make a meaningful comparison to the payment methods, details about each of the systems were represented in two different ways; absolute dollar amounts and the proportional cost of a payment system relative to the size of each transaction, based on two standard transactions representing small payments ($200, and $500). Each of the payment systems proportional cost percentage is then calculated by dividing the fees charged to transact by the total value of the funds in transfer.

Analytical Approach

The study used qualitative thematic analysis and descriptive numerical comparisons to understand the transaction fees and costs of different payment systems as well as the transparency of each system's fee structure. The qualitative data allowed for a comparison of the transaction fees and costs associated with each type of payment system without using statistical analyses. The themes were further refined and clarified in terms of consistency across the various types of payment systems.

Reliability and Reproducibility Measures

The study's transparency/reproducibility are ensured by; 1) using publicly available (verifiable) data, 2) sufficiently documenting how the authors arrived at their selection and search criteria, and 3) employing standardized methods for measuring fees and comparing those fees. All these

demonstrate how another researcher could use the same data set and methods to replicate this study.

Limitations of Methodology

The data presented in this research comes primarily from supplementary data sources with varying degrees of reporting standards and methodology.

Due to the nature of cryptocurrency fees, which are time sensitive, fees used for a transaction can change after the initial observation period. Transaction fees are the only factor being evaluated in this analysis; therefore, there are no other costs included (e.g., exchange fees, liquidity constraints, usability).

The numeric comparisons provided in this report are descriptive and suggestive only, but there are no statistical generalizations made about these forms of cryptocurrency.

Results

This study compares consumer-level transaction fees between traditional banking and cryptocurrency-based payment systems. Traditional banking fees for domestic wire transfers range between $25 and $35, while international wire transfers go from $40 to over $75. These fees do not vary with transaction value or any other factors. Cryptocurrency transaction costs depend on the network. Bitcoin fees range from $1 to $5, Ethereum fees from $0.50 to $2; and stablecoin transactions on Layer-2 networks from $0.30 to $1.50; High-throughput blockchain networks report fees below $0.05. As shown in Table 2, proportional costs for traditional banking vary between 12.5% and 37.5% for the $200 transfers, and between 5% and 15% for the $500 transfers. Cryptocurrency-based systems stay below 2.5% across observed conditions. Table 1. Differences in the organization′s fee structure focusing on systems: fixed, multilevel and network type.

Table 1

Standardized Fee Structures for Traditional Banking and Cryptocurrency Payment Systems (Small-Value Transfers)

Payment Method	Pricing Structure	Typical Fee Range (USD)	Proportional Cost Range (%)	Primary Public Source
Domestic Bank Wire (U.S.)	Fixed outgoing fee	$25–$35	12.5%–17.5%	World Bank (2025)
International Bank Wire (SWIFT)	Fixed + intermediary + FX markup	$40–$75+	20%–37.5%	World Bank (2025); bank disclosures
Bitcoin (BTC)	Variable network fee	$1–$5	0.5%–2.5%	Blockchain.com. (2026). Bitcoin transaction fees
Ethereum (ETH)	Variable gas fee	$0.50–$2	0.25%–1%	Etherscan. (2026). Ethereum gas tracker

Table 1 continues

Payment Method	Pricing Structure	Typical Fee Range (USD)	Proportional Cost Range (%)	Primary Public Source
Stablecoins (Layer-2 networks)	Low fixed/variable network fee	$0.30–$1.50	0.15%–0.75%	Arbitrum, Optimism documentation
High throughput blockchains	Minimal protocol fee	<$0.01–$0.05	<0.03%	Protocol documentation

Note. Fee ranges represent indicative values derived from multiple consistent observations within the defined time window (January–March 2026). Traditional bank fees were derived from two sources: The World Bank (2024) and other published bank fees. The values were adjusted to US dollars, and the percentages reflect a $200 transfer.

Table 2

Consumer-Level Transfer Cost Comparison for Standardized Small-Value Transactions ($200 and $500)

Payment Method	Cost at $200 (USD / %)	Cost at $500 (USD / %)	Fee Structure Type
Domestic Bank Wire	$25–$35 (12.5%–17.5%)	$25–$35 (5%–7%)	Fixed
International Bank Wire	$40–$75+ (20%–37.5%)	$40–$75+ (8%–15%)	Multi-layered
Bitcoin (BTC)	$1–$5 (0.5%–2.5%)	$1–$5 (0.2%–1%)	Variable
Ethereum (ETH)	$0.50–$2 (0.25%–1%)	$0.50–$2 (0.1%–0.4%)	Variable
Stablecoins (Layer-2)	$0.30–$1.50 (0.15%–0.75%)	$0.30–$1.50 (0.06%–0.3%)	Low-variable
Low-fee networks	<$0.01–$0.05 (<0.03%)	<$0.01–$0.05 (<0.01%)	Minimal

Note. Costs are based on standardized $200 and $500 transfers. Values represent indicative ranges from January–March 2026 and exclude exchange-related costs. Percentages are calculated as fee divided by transaction value.

Discussion

This study weighs how cryptocurrency transaction costs compare with traditional banking cross-border transfer fees for small-value transactions and uncovers the components underlying these deviations. The results of this qualitative, document-based research employing consumer-level data unequivocally answer both research questions.

They reveal that cryptocurrency systems in general offer lower-cost transaction opportunities for small value transfers relative to those mediated by traditional banks. Thus, the initial proposition is supported, showing that fixed fees affect small-value transactions more disproportionately than large-value transactions. As size was held constant, and exchange-associated costs were excluded from the analysis, these differences reflect price structure distinctions rather than idiosyncratic divergences.

The second research question is addressed via differences in fee composition. Traditional banking systems impose multi-layered fees — service charges, intermediary fees, and foreign exchange markups —

indicative of a centralized, institution-based setup. In contrast, cryptocurrency systems have a single network validation fee that adjusts with network conditions but is divorced from transaction value.

These results illustrate that transaction costs are a product of architectural design. Traditional systems impose fixed costs throughout a hierarchical institutional structure, while decentralized networks impose usage-related fees. However, these gains are contingent: cryptocurrency fees may increase during times of high network utilization; the analysis ignores exchange-related and usability frictions. Meanwhile bank-provided exchange services may not fully reflect indirect costs.

Overall, the study found that lower transaction costs in cryptocurrency systems result from differences in pricing and governance related to the underlying technology, rather than the technology itself, thus highlighting the relevance of system design for small-value cross-border payments.

Implications of Findings

The thematic analysis identified several emerging themes within the literature regarding cryptocurrency-based payment systems and transaction costs. The first theme highlighted the cost efficiency of cryptocurrency networks, particularly for cross-border and small-value transactions. A second theme emphasized the role of decentralization in reducing intermediary fees and processing delays compared to traditional banking systems. Another recurring theme involved transparency and accessibility, where blockchain-based systems provided greater visibility and financial inclusion for users. Finally, the literature also revealed concerns related to regulatory uncertainty, volatility, and adoption barriers, which may affect the long-term scalability and acceptance of cryptocurrency payment systems.

Conclusion

This study concludes that the literature consistently identifies emerging themes related to the cost efficiency, decentralization, transparency, and accessibility of cryptocurrency-based payment systems. The thematic analysis further reveals that cryptocurrency networks generally offer lower transaction costs than traditional banking systems, particularly in cross-border transactions. However, the literature also highlights ongoing challenges involving regulation, volatility, security concerns, and user adoption. Overall, the findings suggest that while cryptocurrency payment systems demonstrate significant structural advantages in transaction processing and cost reduction, further research is needed to evaluate their long-term sustainability and integration within global financial systems.

Limitations of the Study

There are many limitations that must be considered. First, the study relied only upon secondary sources of data and publicly available statistics, which differ in their methodology, sources, scope and standards of reporting and so the cost estimates provided are indicative (rather than precise sources of information). Second, the transaction fees associated with cryptocurrencies are impacted by several temporal variables such as congestion on the network, which limits the generalizability of the reported levels of costs at specific intervals of time. Thirdly, non-fee type of criteria such as volatility of exchanges, liquidity limitations, usability and legal compliance cost criteria were not accounted for within this analysis; therefore, non-fee related variables may have an influence on the selection of payment method. Finally, there were no

statistical tests performed and no causal inferences drawn from the results due to the qualitative quality of synthesis.

Recommendations for Future Research

Future studies should perform transaction-by-transaction empirical analyses regarding both traditional banking and cryptocurrency-based methods of payment, that have been created with equal amounts of money (i.e., the same dollar value), within the same geographic location (or payment corridor), and at the same time (i.e., within a specific time). In addition, longitudinal studies may investigate whether the relationship between fee dynamics and changes in network congestion, regulatory issues, or institutional blockchain technology adoption have affected this relationship over time.

In addition, studies examining different aspects of consumer behavior and various barriers to adopting payment methods (such as trust, usability, and regulatory issues) will further complement the studies evaluating payment fees associated with digital payments. Finally, studying stablecoins and central bank digital currencies (CBDC) as a means of comparison will offer valuable insights into how new digital payments could change the price structure of low-value cross-border transactions, as the role of intermediaries diminishes with the increasing popularity of these types of digital payments and the disintermediation of payment networks.

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