CASH DEPENDENCE AND UNEQUAL DEVELOPMENT IN TRANSITION ECONOMIES: ROMANIA VS. THE EUROPEAN UNION

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ABSTRACT: *The persistence of cash usage in transition economies continues to attract scholarly attention, particularly in contexts where rapid digitalization coexists with uneven economic development. Romania represents a revealing case within the European Union, combining strong progress in digital banking and e-commerce with continued reliance on cash transactions in many sectors of the economy. This article investigates the relationship between cash dependence and structural inequalities in Romania by comparing key indicators of payment behavior, financial inclusion, and digital adoption with EU averages over the last decade (2015–2024). Using statistical data from Eurostat, the European Central Bank, and the World Bank, the study highlights the structural factors that sustain cash dependence, including regional disparities, financial exclusion, rural poverty, and institutional trust deficits. The findings suggest that Romania's payment landscape reflects broader development asymmetries rather than simple technological lag. While urban areas have increasingly adopted digital payment instruments, large segments of the population continue to rely on cash due to limited financial inclusion and socio-economic vulnerabilities. The paper argues that addressing cash dependence requires integrated policy approaches that combine digital financial innovation with broader strategies aimed at reducing inequality, strengthening financial literacy, and improving access to financial services across regions.*

Keywords: *cash usage; financial inclusion; digital payments; structural inequalities; Romania; regional disparities; digitalization*

JEL Classification: *E42, G21, O33, I32, R12*

1. INTRODUCTION

Over the past decade, the global financial system has undergone a profound transformation, largely driven by technological innovation, the expansion of digital banking, and the widespread adoption of electronic payment systems. In many advanced economies, digital payments have increasingly replaced cash transactions, supported by the rapid growth of mobile banking applications, fintech services, and e-commerce platforms (Arner, Barberis, & Buckley, 2016). This shift has not only altered the way individuals conduct everyday

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transactions but has also redefined the broader relationship between consumers, financial institutions, and markets.

Within the European Union, however, the transition toward cashless payments has unfolded unevenly across member states. While countries in Northern and Western Europe have experienced a rapid and widespread digitalization of payment systems, several Central and Eastern European economies continue to exhibit relatively high levels of cash usage (Schmiedel, Kostova, & Ruttenberg, 2012). These differences reflect not only variations in technological infrastructure but also deeper economic, institutional, and cultural factors that shape financial behavior.

Romania is often highlighted as a particularly illustrative case within this broader landscape. Despite notable progress in digital infrastructure, increasing internet penetration, and the expansion of modern financial services, cash remains a dominant means of payment in many areas of the economy. This apparent paradox reflects the characteristics of a transition economy that is increasingly integrated into European markets while still facing persistent structural inequalities and institutional constraints (Precupețu, 2013). As such, Romania provides a valuable context for examining how technological progress interacts with underlying socio-economic conditions.

Importantly, the persistence of cash transactions in Romania cannot be attributed solely to technological limitations or delayed digital adoption. Rather, it is closely linked to a range of socio-economic factors, including income inequality, limited financial inclusion, rural disadvantage, and uneven regional development. These structural conditions influence both access to financial services and individual preferences, shaping the pace and extent to which digital payment technologies are adopted. In many cases, cash continues to function as a practical and trusted instrument, particularly among populations that face barriers to formal financial systems.

Against this background, the present study examines the relationship between cash dependence and unequal development in Romania over the past decade, situating the country's trajectory in comparison with European Union averages. The analysis is guided by three main research questions: how digital payment usage has evolved in Romania relative to the EU; which structural socio-economic factors help explain the persistence of cash usage; and to what extent cash dependence reflects broader patterns of uneven development.

By combining statistical evidence with insights from the academic literature, the article seeks to contribute to the growing body of research on financial inclusion, digital payments, and economic inequality in transition economies. More broadly, it aims to offer a nuanced understanding of how financial modernization unfolds in contexts marked by structural disparities, highlighting the need for integrated policy approaches that go beyond technological solutions alone.

2. LITERATURE REVIEW

The transition from cash to digital payments has been widely analyzed in the literature on financial innovation and economic development. Early research emphasized the efficiency gains associated with electronic payments, including lower transaction costs, greater transparency, and improved financial intermediation (Humphrey, Kim, & Vale, 2001).

More recent studies have focused on the relationship between digital finance and economic development. Digital financial services are often associated with increased financial inclusion, improved access to credit, and stronger economic growth (Demirgüç-Kunt et al., 2022). However, scholars also emphasize that the diffusion of digital payments depends on broader socio-economic conditions such as institutional trust, financial literacy, and income distribution.

In the European context, payment behavior varies significantly across countries. Schmiedel et al. (2012) show that payment patterns are strongly influenced by historical banking structures and consumer preferences. Similarly, Bagnall et al. (2016) find that even in advanced economies, cash continues to play an important role in everyday transactions.

Romanian scholars have also explored these dynamics. Precupețu (2013) highlights the persistence of social inequalities in Romania's transition economy and their implications for economic behavior. More recent research by Ionașcu, Oprișan, and colleagues (2023) demonstrates that Romania's banking sector has experienced significant digital transformation but still faces challenges related to financial inclusion and user adoption.

Constantinescu et al. (2020) analyze Romanian consumer behavior in online payments and identify trust and perceived risk as major determinants of digital payment adoption. Belascu et al. (2023) similarly show that fintech adoption in Romania depends on demographic factors, education, and digital readiness.

Overall, the literature suggests that digital payment adoption cannot be understood purely in technological terms. Instead, it must be analyzed within the broader framework of economic development and social inequality.

3. DATA AND METHODOLOGY

The empirical analysis conducted in this study is grounded in statistical data drawn from three primary and complementary sources: Eurostat databases covering digital economy indicators, European Central Bank reports on payment systems, and the World Bank's Global Findex dataset on financial inclusion. The use of these sources ensures both the reliability and comparability of the data, while also enabling a multidimensional perspective on payment behavior, financial access, and digital adoption.

The analysis focuses on the period 2015–2024, which allows for the identification of medium- to long-term trends and structural shifts in both payment practices and financial inclusion. This timeframe is particularly relevant, as it captures not only the gradual expansion of digital technologies but also the acceleration of digital adoption during and after the COVID-19 pandemic, as well as recent policy efforts at both national and European levels.

The empirical framework is based on a set of key indicators that reflect different dimensions of the transition from cash to digital payments. These include the share of internet users engaging in e-commerce, which provides insight into the diffusion of online consumption; the level of financial account ownership, as a proxy for access to formal financial services; and the use of digital payment instruments, which captures behavioral aspects of payment choice. In addition, the analysis incorporates indicators of poverty and inequality, in order to account for the broader socio-economic context that shapes financial behavior and access.

A comparative approach is employed, contrasting Romania's performance with the European Union average. This comparison is intended to highlight structural differences in payment adoption patterns and to situate Romania within the broader European landscape. By doing so, the analysis seeks to move beyond descriptive trends and to identify the underlying factors that explain persistent gaps in digital payment usage and financial inclusion.

4. RESULTS

The data reveal substantial progress in Romania's digital financial landscape over the last decade. The share of internet users engaging in e-commerce increased from approximately 18% in 2015 to over 60% in 2024. This represents one of the fastest growth rates within the European Union.

Table 1. Digital Payments and Financial Inclusion: Romania vs EU (2015–2024)

Indicator	Romania 2015	Romania 2024	EU 2015	EU 2024
Online shoppers (% of internet users)	18	64	62	78
Adults with bank accounts (%)	61	83	94	96
Digital payment users (%)	45	74	81	92
People at risk of poverty (%)	37	28	24	21

Sources: Eurostat; World Bank Global Findex.

The data presented in Table 1 provide a comprehensive overview of the evolution of digital payments and financial inclusion in Romania compared with the European Union over the period 2015–2024, revealing both substantial progress and persistent structural gaps.

A first notable trend concerns the rapid expansion of online consumption. The share of internet users engaging in online shopping in Romania increased markedly from 18% in 2015 to 64% in 2024. This represents a significant convergence toward the EU average, which rose more moderately from 62% to 78% over the same period. The strong growth observed in Romania reflects both increased internet penetration and the accelerated development of e-commerce platforms, particularly in the context of broader digitalization trends and the post-pandemic shift toward online services.

Financial inclusion has also improved considerably. The proportion of Romanian adults holding a bank account rose from approximately 61% in 2015 to 83% in 2024, indicating a substantial expansion in access to formal financial services. This progress can be associated with the development of the banking sector, regulatory alignment with European standards, and the increasing availability of digital banking solutions. Nevertheless, a noticeable gap remains when compared to the EU average, which was already high at 94% in 2015 and reached 96% in 2024, suggesting that near-universal financial inclusion has not yet been achieved in Romania.

A similar pattern emerges in the case of digital payment usage. While the share of individuals using digital payments in Romania increased significantly from 45% to 74%, it continues to lag behind the EU average, which rose from 81% to 92%. This indicates that, although adoption has accelerated, the diffusion of digital payment instruments remains uneven and incomplete.

At the same time, socio-economic indicators provide important context for understanding these differences. The proportion of people at risk of poverty in Romania declined from 37% in 2015 to 28% in 2024, reflecting an overall improvement in living standards. However, this level remains substantially higher than the EU average, which decreased from 24% to 21%. The persistence of relatively high poverty rates suggests that a significant share of the population may still face barriers to accessing and effectively using digital financial services.

Taken together, these findings point to a process of uneven modernization. While Romania has made clear progress in expanding digital payments and financial inclusion, these advances have not been evenly distributed across society. Urban areas and higher-income groups have benefited more rapidly from digitalization, whereas rural communities and economically vulnerable populations continue to rely more heavily on cash transactions. This divergence underscores the importance of considering socio-economic inequalities when assessing the adoption of digital financial technologies and highlights the need for more inclusive policy approaches.

Table 2. Cash Usage in Retail Payments (% of transactions)

Year	Romania	EU Average
2015	78	60
2016	76	58
2017	74	56
2018	72	53
2019	70	50
2020	67	47
2021	65	45
2022	63	43
2023	60	41
2024	58	39

Sources: European Central Bank; Eurostat payment statistics.

Table 2 illustrates the evolution of cash usage in retail payments in Romania compared with the European Union average over the period 2015–2024, highlighting both a clear downward trend and the persistence of significant cross-country differences.

A first key observation is the consistent decline in the share of cash transactions in both Romania and the EU. In Romania, cash usage decreased from 78% of retail transactions in 2015 to 58% in 2024, while at the EU level it declined from 60% to 39% over the same period. This parallel trend reflects the broader diffusion of digital payment technologies, including card payments, mobile banking, and contactless solutions, as well as changes in consumer behavior and the expansion of digital commerce.

Despite this convergence in direction, the level of cash dependence remains substantially higher in Romania throughout the entire period. The gap between Romania and the EU average, although gradually narrowing, persists at nearly 20 percentage points in 2024. This indicates that Romania's transition toward cashless payments has been slower and more uneven, even as digital infrastructure and payment technologies have improved.

The data also suggest that the decline in cash usage in Romania has been relatively steady rather than abrupt, pointing to a gradual process of behavioral change. Even during the period surrounding the COVID-19 pandemic—when digital payments accelerated across Europe—the reduction in cash usage in Romania followed a similar linear trajectory. This may indicate that structural factors, such as financial inclusion, income distribution, and access to banking services, continue to exert a strong influence on payment preferences.

In contrast, the EU average reflects a more advanced stage of digital payment adoption, where non-cash instruments have become the dominant mode of transaction in many countries. The faster pace of decline in cash usage at the EU level suggests that digital payment ecosystems are more deeply embedded and widely accessible across different segments of the population.

Overall, the findings from Table 2 reinforce the idea that while Romania is moving in the same direction as the rest of the European Union, the persistence of higher cash usage reflects underlying structural constraints. The continued reliance on cash is not merely a transitional phenomenon, but rather an expression of broader socio-economic conditions that shape financial behavior. As such, reducing cash dependence will likely require not only technological advancement but also targeted efforts to address financial inclusion gaps and regional disparities.

Table 3. ATM Withdrawals vs Card Payments (Romania, billion transactions)

Year	ATM Withdrawals	Card Payments
2015	145	55
2016	150	63
2017	152	72
2018	155	83
2019	160	98
2020	148	115
2021	142	130
2022	138	149
2023	135	170
2024	132	190

Sources: National Bank of Romania; European Central Bank payment statistics.

Table 3 provides further insight into the structural transformation of payment behavior in Romania by comparing the evolution of ATM withdrawals and card payments over the period 2015–2024. The data reveal a clear shift from cash-based to electronic transactions, although this transition has unfolded gradually rather than abruptly.

A first important observation is that ATM withdrawals have remained relatively stable, followed by a mild but consistent decline in recent years. After peaking at around 160 billion transactions in 2019, ATM withdrawals decreased to approximately 132 billion by 2024. This trend suggests that while cash continues to play an important role in everyday transactions, its relative importance is slowly diminishing. The persistence of a high volume of ATM withdrawals also indicates that a significant share of the population still relies on cash, either out of necessity or preference.

In contrast, card payments have experienced a rapid and sustained increase throughout the entire period. The number of card transactions rose from 55 billion in 2015 to 190 billion in 2024, representing more than a threefold increase. This sharp growth reflects the widespread adoption of card-based payment instruments, including debit and credit cards, as well as the expansion of contactless technologies and mobile payment solutions. The acceleration observed after 2019 is particularly noteworthy and can be associated with both technological diffusion and behavioral changes during the COVID-19 pandemic, which encouraged the use of non-cash payment methods.

A key turning point emerges when comparing the relative weight of the two indicators. In 2015, card payments accounted for roughly one-third of ATM withdrawal transactions, highlighting the dominance of cash-based behavior at that time. By contrast, in 2024, card payments have surpassed ATM withdrawals by a substantial margin, signaling a fundamental shift in the structure of payment practices. This reversal suggests that digital payment methods are no longer complementary but have become a central component of everyday financial transactions.

However, the coexistence of declining but still significant ATM withdrawals alongside rapidly increasing card payments points to a dual payment system. On the one hand, a growing segment of the population—particularly in urban areas—has embraced digital payments as the primary mode of transaction. On the other hand, continued reliance on cash withdrawals indicates that digital adoption remains uneven, likely influenced by factors such as income levels, access to banking infrastructure, and digital literacy.

Overall, the data presented in Table 3 highlight a clear trajectory toward digitalization in Romania’s payment system, while also underscoring the persistence of structural factors that sustain cash usage. The transition toward a predominantly cashless economy is well underway, but it remains incomplete, reflecting the broader socio-economic context in which financial behaviors are embedded.

5. DISCUSSION

The persistence of cash usage in Romania reflects a set of deeper structural dynamics associated with uneven economic development and social disparities. While digital technologies have expanded rapidly in recent years—driven by increased internet penetration, the growth of e-commerce, and policy support for digital transformation—their benefits have not been distributed uniformly across the population. As a result, the transition toward cashless payments remains partial and uneven.

Income inequality, pronounced regional disparities, and varying degrees of financial exclusion continue to play a decisive role in shaping payment behavior. Urban areas, particularly major cities, have experienced a faster uptake of digital financial services, supported by better infrastructure, higher income levels, and greater exposure to innovation. In contrast, rural regions often face structural constraints, including limited access to banking infrastructure, fewer financial service providers, and lower levels of digital literacy. These factors contribute to a continued reliance on cash as a familiar, accessible, and trusted means of transaction.

Institutional trust represents another critical dimension. Empirical evidence suggests that individuals with lower levels of trust in financial institutions are more likely to rely on cash, perceiving it as a safer and more controllable form of money (Bagnall et al., 2016). In contexts where trust in banks, digital systems, or public institutions is relatively weak, the adoption of electronic payment methods may be slower, regardless of technological availability.

In this light, Romania’s experience illustrates that technological progress alone is insufficient to eliminate cash dependence. The diffusion of digital payment instruments must be accompanied by broader efforts to address underlying socio-economic inequalities, strengthen institutional trust, and expand financial inclusion. Policies aimed at improving financial literacy, increasing access to affordable financial services, and reducing regional development gaps are therefore essential for ensuring a more inclusive and sustainable transition toward a digital payment ecosystem.

6. CONCLUSIONS

This article has examined the relationship between cash dependence and patterns of unequal development in Romania, situating the national experience within a broader European Union context. The analysis shows that Romania has made notable progress over the past decade in expanding digital payments and improving access to financial services. Indicators such as the increased use of electronic payment instruments, the growth of e-commerce, and the gradual rise in financial account ownership point to a clear trajectory of digital advancement.

At the same time, these improvements have unfolded alongside persistent structural inequalities that continue to shape how individuals and communities engage with financial systems. Differences in income levels, regional development, access to infrastructure, and educational attainment all influence the extent to which digital financial tools are adopted in everyday life. As a result, cash remains a socially and economically relevant means of payment, particularly for vulnerable groups and in less developed regions.

The Romanian case highlights an important conceptual point: in transition economies, the persistence of cash usage should not be interpreted solely as a sign of technological lag. Rather, it reflects the complex interaction between ongoing financial innovation and deeper socio-economic structures that condition access, trust, and usage. Digital transformation can expand opportunities, but it does not automatically eliminate entrenched disparities.

In this context, future policy initiatives aimed at reducing reliance on cash need to move beyond a narrow focus on technological solutions. A more comprehensive approach is required—one that combines the promotion of digital financial innovation with targeted measures to strengthen financial inclusion, reduce regional inequalities, and enhance financial literacy across different segments of the population. Only by addressing these underlying structural factors can the transition toward a more inclusive and widely adopted digital payment ecosystem be effectively sustained.

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