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PECULIARITIES OF DIGITALIZATION OF FINANCIAL SERVICES AMONG COUNTRIES BY INCOME GROUPS: CONCLUSIONS FOR UKRAINE

Oleksii Shpanel-Yukhta[1]

Abstract. The article reveals the features of digitalization in the context of groups of countries by income level. The main channels of digitalization impact on the financial market and economic growth are highlighted. It is established that the combination of digitalization of financial depth and financial inclusion and the effectiveness of monetary policy stimulates economic growth. Comparison of 3 groups of indicators identical in economic value but with different impacts of digitalization (availability of an account – availability of a mobile account, availability of borrowings – availability of mobile borrowings, availability of savings – availability of mobile savings) and the indicator of electronic payments made it possible to generalize that digitalization does not significantly affect the stimulation of credit inclusion, but stimulates the expansion of access to banking operations: opening an account, making/receiving transfers and savings. Given the high level of financial inclusion in high-income countries, digitalization of financial services was also noted before the digitalization of financial services, digitalization only simplifies access to accounts and payments, but does not expand it (in particular, among high-income countries, the share of the population with open accounts in financial institutions is more than 96% in 2021). It is determined that digitalization can partially resolve the problem of low confidence in financial institutions. Thus, for the period from 2017 to 2021, the share of the population with mobile accounts in low-income countries exceeded the share of the population with accounts in formal financial institutions. It was noted that the COVID-19 pandemic and post-pandemic recovery have become an additional incentive to deepen the digitalization of financial services, as they have necessitated the expansion of remote communication channels and customer service for financial institutions. It is emphasized that the growth in the prevalence of electronic payments in the world as a whole is due to their ease of use for cross-border payments on global online trading platforms and the expansion of remote payments in the context of restrictions related to the COVID-19 pandemic. The trends of digitalization of financial services in Ukraine are summarized. The domestic level of prevalence of accounts in financial institutions and electronic payments among the population corresponds to the level of countries with an income level above the average. The need for financial deepening is emphasized, both from the point of view of the banks' resource banking (stimulating the transfer of savings to the financial sector and thus launching the economic cycle) and from the point of view of lending to the real sector. The advantage of digitalization in the conditions of martial law was highlighted, when due to the high level of financial services coverage it was possible to ensure payments – against the background of the complication of the state's financial obligations to citizens and the risks of the country's payment system.

Key words: digitalization, financial services, monetary policy, financial inclusion.

JEL Classification: G20

1. Introduction

Digitalization is one of the key characteristics of the early 21st century and an integral part of most spheres of society. At the same time, the financial sector is one of the drivers of digitalization of economic processes. In general, the digitalization of financial services is the process of digitalizing banking and non-banking products and services for consumers and creating new ways to channel financial flows to businesses and households, deepening financial inclusion. According to experts of the Institute for Management Development, digitalization is one of the foundations for

[1] Institute for Economics and Forecasting,
National Academy of Science of Ukraine, Ukraine *(corresponding author)*
ORCID: https://orcid.org/0000-0001-9674-1337

the formation of economic competitiveness, which provides a higher level of income (IMD, 2022). Furthermore, digitalization is an indicator of a digital nation and is the result of a combination of digital talent, digital regulation and data management, digital attitudes and availability of financial capital (Malpas, 2022). The discussion about the need for digitalization became especially active during the COVID-19 pandemic, as there was a need for:

1. Providing financial services with minimal physical contact of the population.
2. Ensuring the implementation of transfer payments (pensions, scholarships, etc.) with remote service by state and financial institutions.
3. Transformation of the sphere of business services in the conditions of remote work of business.

Some aspects that stimulate digitalization are:

1. Implementation of Payment Service Directive 2 in the EU.
2. Development of digital currencies of central banks.
3. Development of cryptoassets and digital universe as an alternative to the standard financial circulation (Adrian, Mancini-Grifoli 2021).

In addition, in the context of Russia's full-scale invasion of Ukraine, the high level of digitalization of services has made it possible to continuously supply most financial services and new financial assistance programs, including foreign ones, taking into account internal and international migration of the population. Ukrainian experience has shown that the digitalization of financial services is an additional guarantee of the continuity of financial services, including in the face of unforeseen external risks.

Despite the positives of digitalization, one of the key under-researched aspects of digitalization is the nature of its impact on individual financial services depending on the average income level of the country's economy.

2. Theoretical aspects of the relationship between digitalization and financial policy efficiency

According to F. Mishkin, the effectiveness of financial policy directly depends on the level of development of the financial system and financial stability. The ability to withstand external shocks is one of the key features of an effective monetary policy of the central bank (Mishkin, 2002).

In turn, the IMF experts determine that one of the key indicators of the effectiveness of financial policy is its manageability – that is, the speed and adequacy of the market reaction to certain actions of the regulator. In particular, this is an important factor for small open economies. In general, most researchers agree that one of the key characteristics of an effective financial policy is the ability to achieve the set monetary policy objectives. For his part, K. Mathai (Mathai, 2020) from the IMF, considering the effectiveness of financial policy, focuses on the effectiveness of monetary policy as the ability to achieve the goals of economic growth in the long run and, accordingly, price stability in the short run.

Thus, in the long run, an effective financial policy is one of the important factors in ensuring a higher level of income for the population.

Managed achievement of economic policy goals, both long-term and short-term, is based on achieving a certain level of development of the financial system, which is based on:

1. Financial depth/financial deepening is an effective characteristic that demonstrates the saturation of the economy with financial resources, which makes it possible to assess the ability of the financial system to effectively mobilize and redistribute financial resources to achieve sustainable economic development (Shapoval, 2021).
2. Financial inclusion is the process of interaction between financial market entities and consumers of financial services, which through the provision of equal access to financial services ensures the involvement of consumers of financial services in the financial system. At the same time, effective access to credit, savings, payments and insurance from formal service providers implies convenient and affordable provision of services to the customer under conditions of sustainability for the provider (sustainable services), as a result of which clients outside the formal financial system (i.e., the one regulated by law) start using formal financial services rather than informal options. Later, the concept of financial inclusion was subject to different interpretations by financial market participants. Thus, financial inclusion is defined as the process of providing financial services in accordance with the needs of disadvantaged groups (in particular, low-income population) at an affordable price and in a transparent manner (OECD, 2011).
3. Efficiency of monetary policy – the ability of the financial sector and its governing bodies to ensure a sufficient level of availability of financial services, the level of their use and further redistribution of funds through the financial sector in the most efficient way.

Digitalization affects financial development through:

1. Expanding access to financial services by providing remote/digital access to financial services.
2. Financial deepening as a resulting element of simplifying access and the possibility of prompt use/conversion of money into various liquid forms (Kerimov, 2021).

3. Empirical aspects of the impact of digitalization on economic development

The impact of digitalization was assessed by grouping countries by per capita income (according to the World Bank methodology into low-income, lower-middle-income, upper-middle-income and high-income countries, respectively) by indicators:

1. Account availability – as a basic indicator of the availability of the main financial service – opening an account.
2. Electronic payments – as a basic indicator of the use of the main service of economic circulation.
3. Borrowing/lending – as an indicator of credit as a driving force of economic development.
4. Savings/deposits – as an indicator of the financial base of financial institutions for credit and payment transactions.

Figure 1 shows the dynamics of changes in access indicators under the influence of digitalization by income level. The classical indicator for assessing the availability of financial resources is the share of the population with open accounts in financial institutions. During 2017–2021, this indicator reached its maximum peak among high-income countries, as only more than 3% of the population over 15 years old do not have open accounts in financial institutions. Given the presence of financial exclusion (due to physiological, religious and other restrictions), the maximum level of "coverage" with basic financial services can be noted. As a result, opening a digital account (an indicator of the use of mobile money in the last 12 months) is not typical for high-income countries.

For upper-middle income groups, there was the largest increase (more than 10 percentage points) in the share of the population with open accounts in financial institutions and more than 4 times (up to 10%) in the digital indicator. This trend indicates the legalization and simplification of the legal circulation of mobile/virtual money systems in countries with appropriate income levels and the deepening of access to financial services in general.

The low level of trust in financial institutions, geographical problems with the availability of financial institutions for opening accounts, complicated opening procedures are the main reasons for the lower level of financial inclusion in the respective countries and the dynamic development of mobile payments. For example, one of the successful central bank digital currency projects was launched in Nigeria. In October 2021, Nigeria launched Africa's first digital currency eNaira. During the launch, the Governor of the Central Bank of Nigeria announced that 500 million eNaira (USD 1.2 million) had already been generated. As of December 2021, over 600 thousand eNaira wallets have been created and over 35 thousand transactions have been conducted. Currently, 90% of transactions are between people and businesses. eNaira is expected to help Nigeria achieve its goal of increasing financial inclusion

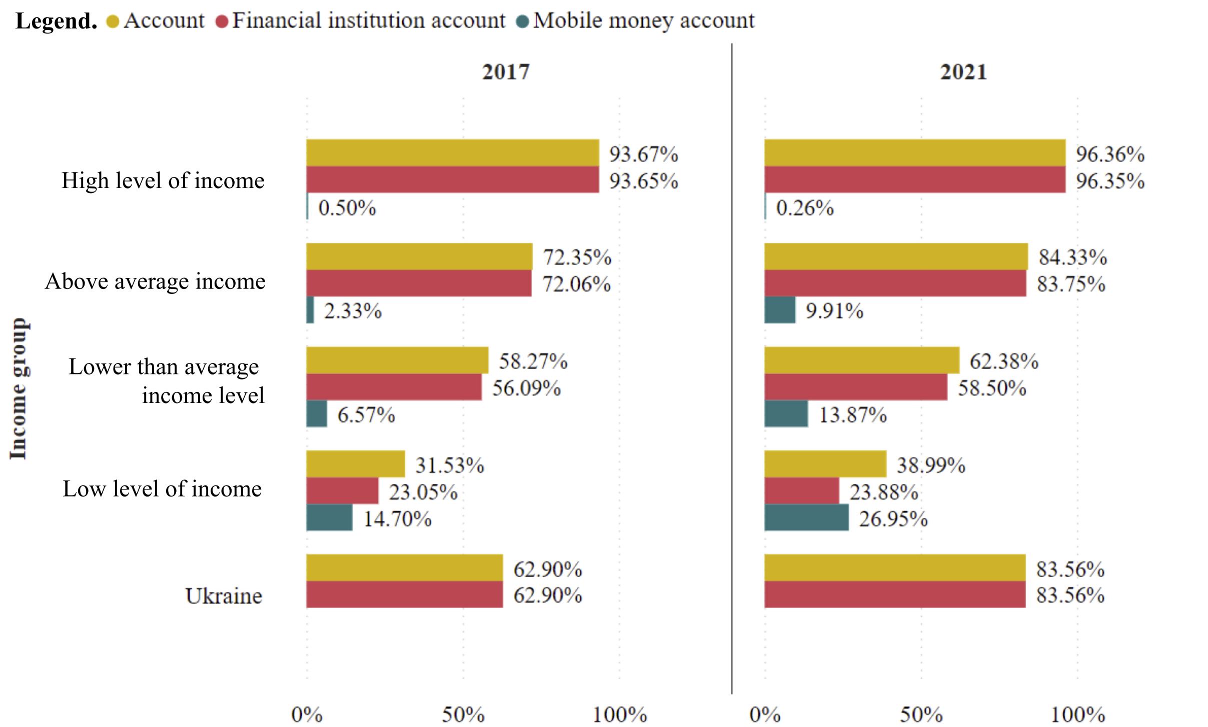

Figure 1. Dynamics of accessibility indicators by groups of countries according to income level, %

Source: compiled by the author based on (Global Findex Database, 2022)

from 64% to 95%. A well managed eNaira is projected to accumulate $29 billion to GDP over the next ten years (Atlantic Council, 2022).

As for Ukraine, the prevalence of accounts corresponds to the level of higher income groups. A significant increase (by 20) in the share of the population with open accounts in financial institutions is due to the general digitalization of the population, the expansion of electronic channels of communication between banks and customers, and the linking of money transfers, social and wage payments in the private sector to bank accounts.

Given the data in Figure 2, the growth of e-payments is typical for all income groups both in 2017 and 2021. The level of financial inclusion in Ukraine corresponds to the level of countries with above-average income.

The dynamics of digital payments depends on:

1. Expansion of infrastructure and simplification of regulation of electronic payments.

2. Extension of e-commerce segment and online sales, especially in the context of COVID-19.

3. Growth of trade on international online platforms (AliExpress, Alibaba, Ebay, Amazon, etc.) and simplification/acceleration of cross-border payments through the use of electronic payments and acceleration of goods delivery.

More than 50% of the world's population (Figure 3) borrow money in one form or another. However, while in high-income countries up to 80% of borrowings are made through financial institutions, in low-income countries only 22% of borrowings are made through financial institutions. One of the main ones is higher requirements for borrowers at lower income levels, lower levels of guaranteed income in lower income countries and as a result inability to obtain loans from financial institutions. Although digitalization has a smaller impact on lending volumes as it cannot solve these basic problems, it is a critical factor in the lending process as:

1. It reduces the cost of scoring a client through the introduction of automated solutions.

2. it reduces the cost of attracting customers by spreading aggregators of financial offers (Shapoval & Shpanel-Yukhta, 2021).

One of the key aspects of the functioning of financial institutions is the ability to raise funds for their further use (Figure 4). While overall savings, including savings in financial institutions, have increased among high-income and upper-middle-income countries, they have declined among lower-middle-income and low-income countries. This trend is caused by:

1. The COVID-19 pandemic, which for the population of poorer countries has led to the process of erosion of savings in the context of the economic downturn.

2. Stimulating fiscal measures of developed countries and measures to support the population, which had a positive impact on the propensity to save.

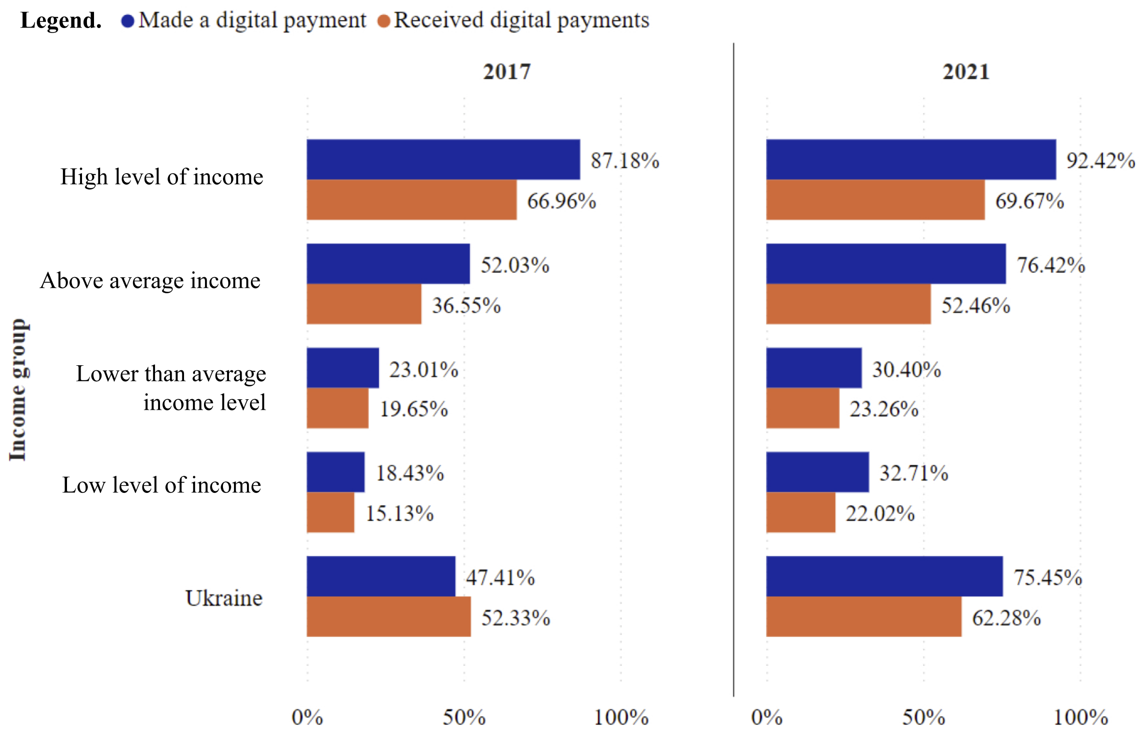

Figure 2. Dynamics of digital payments by country groups according to income level, %

Source: compiled by the author based on (Global Findex Database, 2022)

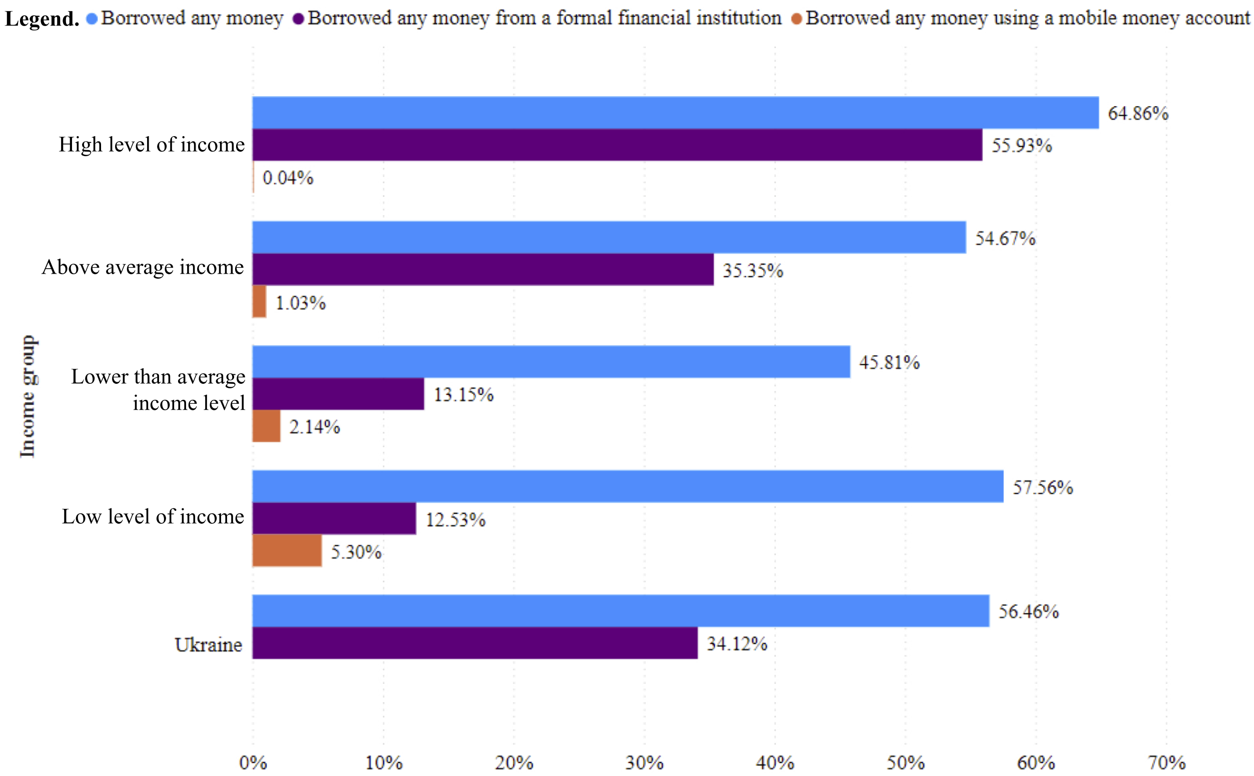

Figure 3. Dynamics of lending by groups of countries according to income level, %

Source: compiled by the author based on (Global Findex Database, 2022)

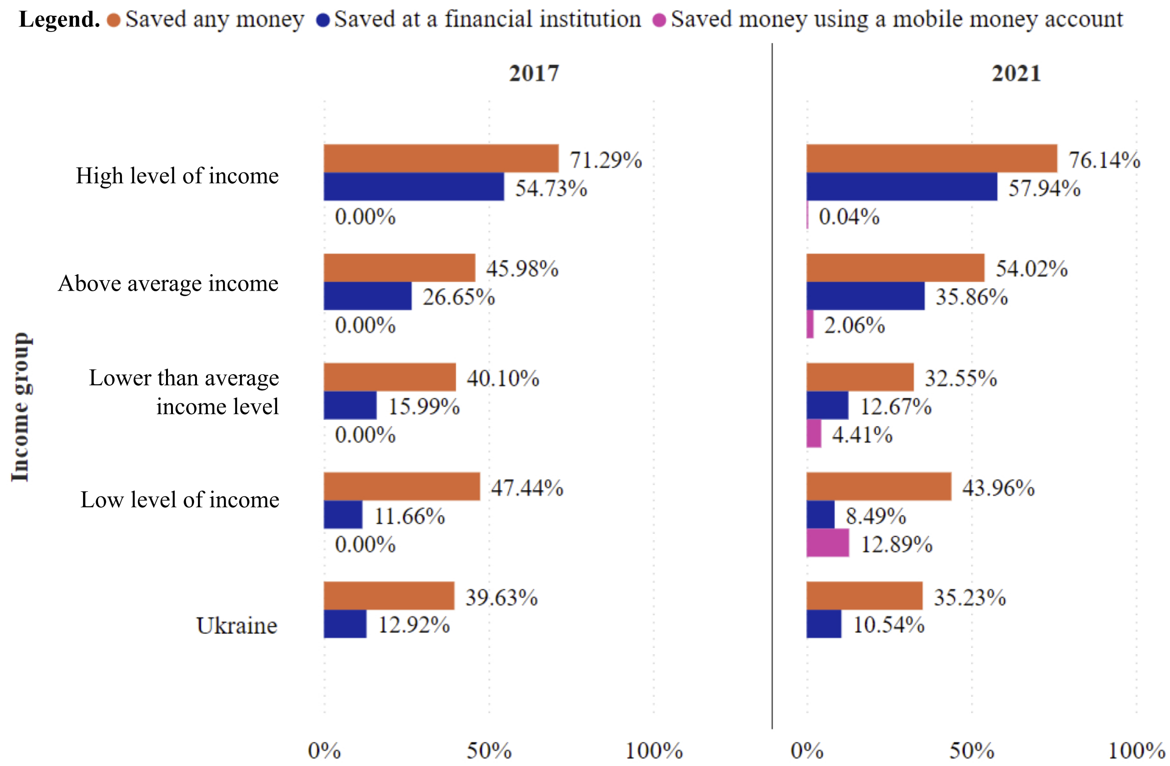

Figure 4. Savings dynamics by country groups by income level, %

Source: compiled by the author based on (Global Findex Database, 2022)

The spread of electronic money among low-income countries, where the population has become more trusting than financial institutions.

It should be noted that a slight decrease in both savings and savings in financial institutions of Ukraine is explained by the fact that:

1. In 2017–2019, the consequences of the significant contraction of the banking sector after the events of 2014 were still felt.
2. COVID-19 has affected the real income of the population and reduced the potential for saving money.
3. The maximum amount of deposit reimbursement was not changed: it remained at the level of UAH 200 thousand even after a significant devaluation of the hryvnia since 2014 – only under martial law in 2022 it was increased to UAH 600 thousand, and without any limitations on the amount.

4. Conclusions

The analyzed trends in the digitalization of financial services have shown that the level of income is one of the determining factors of digitalization in certain segments of the financial market.

1. Within the framework of financial inclusion, in order to ensure the accessibility of the population to financial services and products, digitalization ensures the inclusion of an additional percentage of the population in the use of financial services.
2. Digitalization does not affect the volume and spread of lending through financial intermediaries, but primarily affects the structure of lending.
3. Raising funds through digital assets is a promising direction for the development of deposit relations and, accordingly, improving bank funding. The level of trust in virtual institutions is higher than in formal financial institutions in low-income countries. At the same time, savings institutions are underdeveloped in high-income countries and may provide additional liquidity reserves in the future.
4. In terms of accessibility and use of payments, the level of financial inclusion in Ukraine corresponds to the level of upper-middle-income countries.
5. In terms of lending and savings, the level of financial inclusion in Ukraine is typical of the lower middle income group. That is, electronic funds are a potential for liquidity formation, which can be further used to increase financial depth.

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