10 years of BLIK

Changes in payments
and the economy of Poland

March 2025

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Contents

Executive summary

BLIK, payments in Poland and mobile solutions in Europe

- **Versatility, convenience, and security.** BLIK is a universal payment method that allows transactions via mobile phones in online and stationary stores, as well as cash withdrawals and deposits at ATMs and transfers to phone numbers between users. BLIK payments are characterized by speed, convenience, and security associated with the use of one-time codes, especially in the e-commerce environment. The BLIK offering is being expanded with additional services such as recurring and deferred payments and electronic checks. As a solution created in Poland and based on its own settlement and authorization system, BLIK meets the characteristics of a sovereign payment system, aligning with the European Union's strategy for retail payments.
- **Domestic and foreign expansion.** BLIK entered the Polish market in 2015 and has gradually increased its availability and role through cooperation with many companies operating in the payment market in Poland, such as banks, acquirers, and online platforms. This cooperation includes not only the largest players in the market but also smaller entities and increasingly extends beyond the country's borders. Currently, almost all bank customers can use BLIK, and the vast majority of stores accept this payment method. Due to its scale of operations, the National Bank of Poland classifies BLIK as one of the significant retail payment systems. In 2024, BLIK entered the Slovak market and is expected to appear in Romania soon.
- **A common payment method among Poles.** Over the past 10 years, the number of active BLIK users (bank applications with at least one transaction) has increased to 18.5 million in 2024, which is 58 out of 100 people aged 15 and older. By 2023, about half of Poles declared using this payment method. BLIK is most popular among younger individuals, giving it potential for further growth.
- **Impressive growth.** By the end of 2018, the value of BLIK transactions related to consumer spending accounted for 0.7% of total household consumption in Poland. By 2024, this figure has risen to 11%, with all BLIK operations reaching nearly PLN 350 billion. Over the decade, the average annual growth rate exceeded 100% and remained very high even during the service's greater maturity period after 2020. During this time, BLIK transformed from a cash withdrawal tool to a dominant player in the e-commerce payment market. Additionally, the role of P2P (person-to-person) transactions in the system has recently increased significantly.
- **Key role of BLIK in e-commerce.** BLIK payments on the internet amounted to PLN 173 billion in 2024, and a year earlier they accounted for about half of the value of online trade in Poland. BLIK has significantly outpaced other payment methods in this channel for several years. Meanwhile, BLIK's share in payments at physical stores remains limited, although it is steadily increasing. This transaction method is becoming increasingly competitive, partly due to the development of contactless payments.
- **European leader.** Among European mobile payment systems, BLIK recorded the highest number of transactions in 2023, exceeding 1.7 billion, which translates to 47 transactions per capita in Poland. In 2024, the number of BLIK transactions again significantly increased, surpassing 2.4 billion, or an average of 64 payments per capita. Comparing the role of mobile payments in e-commerce in Poland and euro area countries, alongside the Dutch iDEAL, BLIK has the largest share in the domestic e-commerce market. The European payment market is entering a consolidation phase, which poses challenges but also opportunities for further development for the Polish system.

Chart S1.
BLIK's role in Poland and Europe

58
active users
per 100 people aged 15+
at the end of 2024.

11%
household consumption
realized with with BLIK
payments in Q4 2024.

50%
BLIK's share
in the e-commerce market
in Poland in 2023.

2.4 bn
BLIK transactions in 2024.

1
ranked in Europe in terms
of mobile transactions
in 2023.

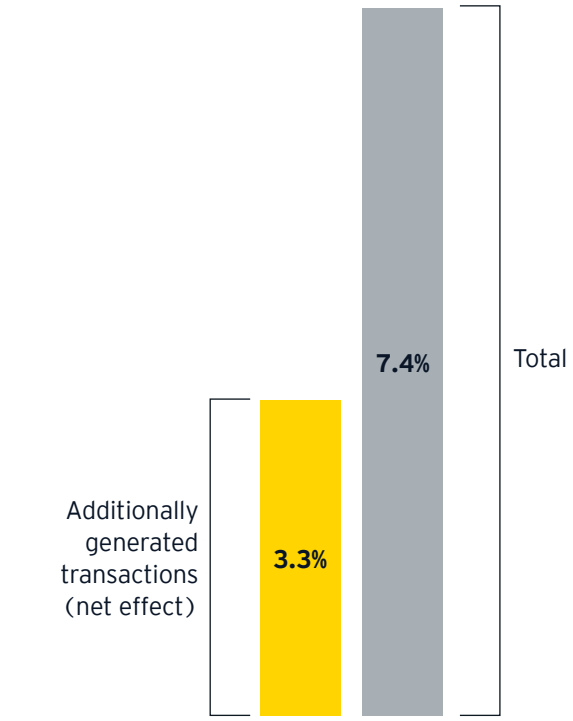
Notes: For the third and fifth numbers, precise statistics allowing calculations for 2024 are not yet available.

Source: EY analysis based on data from the National Bank of Poland, Polski Standard Płatności and others.

BLIK as a creator of the electronic payment market

- **Counterfactual analysis**. From the perspective of BLIK's impact on the economy that we consider further, it is important not only to assess the value of such transactions but also to determine of what part is made up of additionally created cashless payments (i.e., not taken from other providers of such services). To this end, using quantitative methods and data from countries with characteristics as similar as possible to Poland, we estimated the so-called counterfactual situation – a hypothetical state of electronic payments in Poland if BLIK did not exist. We then compared the actual data with the counterfactual situation. In this way, we obtained the so-called net effect of BLIK's operation, i.e., the value of electronic transactions that would not have occurred in the economy without this system.
- **Effects of market creation by BLIK.** Our analysis suggests that in 2023, BLIK generated additional electronic payments worth approximately PLN 65 billion in Poland, corresponding to about 3.3% of household consumption. This is roughly equivalent to what Poles spend on clothing purchases. The share of the created market (net effect) in the value of BLIK transactions related to consumption was 45% in 2023. This indicates that BLIK is not only a preferred method of electronic payments for many users but also significantly drives the development of this market. It is worth noting that despite controlling for key differences between Poland and other similar countries in the analysis, the estimated net effect may also include the impacts of other factors that we could not account for in the study.

Chart S2.
BLIK-related electronic payments in online and physical stores in Poland in 2023 – total and net effect (% of household consumption)



Notes: Data required to provide estimates for 2024 are not yet available.

Source: EY.

The impact of BLIK payments on the Polish economy

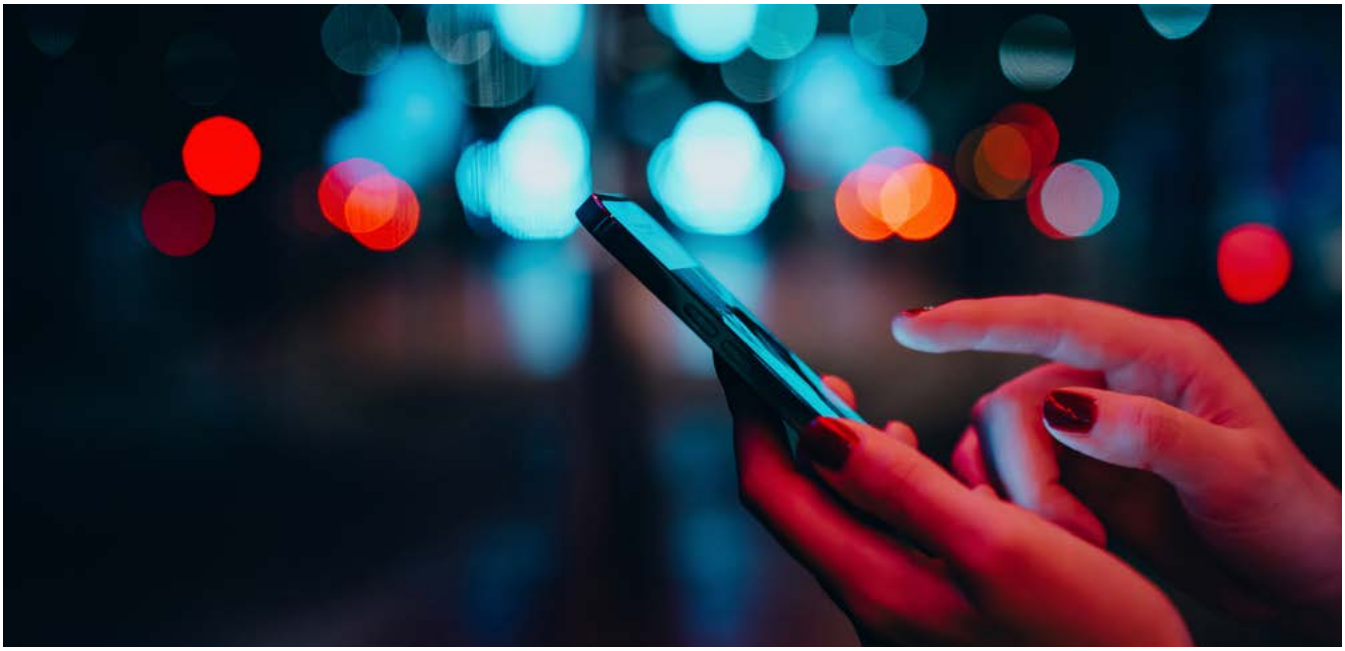
- **Wide impact.** Electronic payments, including BLIK, affect the economy through multiple channels. These include supporting innovation, reducing barriers to business activity, alleviating payment difficulties, ensuring access to markets, and increasing the security, stability, and transparency of transactions.
- **Current results.** EY estimates based on econometric analysis indicate that the use of BLIK payments supported the generation of approximately 1.2% of GDP (PLN 42 billion) in Poland in 2024. This production value translates to about 700 PLN of annual income per person, PLN 15 billion in government revenues (taxes and contributions), and 200,000 jobs. The 1.2% of GDP is roughly equivalent to what Polish consumers spend on accommodation services and organized vacations or what the Polish government allocates to higher education. Using the earlier estimate for 2023, we assume that about 45% of these figures are net effects. For example, if BLIK did not exist, the value of supported production in Poland would be lower by about 0.5% of GDP (PLN 19 billion).
- **Potential effects in the future.** Additionally, the operator's strategy ambitiously aims for more than a twofold increase in the value of BLIK payments by 2027. We estimate that if this is achieved and the Polish economy develops according to available forecasts, the indicated percentage of supported economic activity would rise to 2.1% of GDP. The value of the net effect, although smaller, remains unknown for this type of time perspective.
- **Interpretation of effects.** The presented figures illustrate the total, multichannel impact of BLIK payments on the economy. Due to the correlation between the popularity of various forms of electronic payments, e-commerce, internet development, and related activities in the economy, it is difficult to distinguish their individual contributions. Econometric analysis based on observational data, as in this study, is in our opinion the best available research method. However, it is subject to uncertainty, especially regarding causality. Therefore, the presented estimates should be interpreted cautiously, as they illustrate the possible scale of the analyzed effects and may potentially depend on additional factors.

Chart S3.
Economic effects supported by BLIK payments in 2024

Source: EY.

The effects of e-commerce on the Polish economy and the role of BLIK

- **Channels of e-commerce's impact on the economy.** Taking into account the significant importance of BLIK for online trade in Poland, we take a closer look at this aspect. E-commerce contributes to the transformation of the economy through various mechanisms, such as increasing market reach, stimulating innovation, and reducing operational costs. Payment tools like BLIK play a key role in this process, contributing to increased consumer trust in online shopping and its growing popularity.
- **Cost reduction in the retail sector.** Reducing operational costs is one of the key channels through which e-commerce impacts the economy, and we focus on its analysis due to the availability of data. The shift of retail activities to online market allows for the reduction of many costs, such as rent for retail space or customer service in traditional stores. Through process automation, businesses can better utilize their resources, leading to increased efficiency and profitability. Available data suggest that e-commerce in Poland could have reduced operational costs in the trade sector by about 1.5% by 2023, resulting in annual savings of approximately 2.8 billion PLN. Due to BLIK's significant role in e-commerce, BLIK payments could have supported cost reduction by about 0.74%. We estimate that about 45% of this is net effects that would not have been supported if BLIK did not exist. Additionally, it is worth noting that sometimes the relationship may be reversed – for various reasons, cost-effective companies may more frequently choose to operate in e-commerce.
- **Additional economic impacts.** The reduction of operational costs alone is just a first-order effect that does not reflect the full impact of this process on the structure and development of the economy. Our analysis using a general equilibrium model shows how the reduction of costs in the trade sector can affect various aspects of economic activity because of medium- and long-term changes that become apparent after appropriate adjustments in the economy. The aggregated effect of these changes ultimately leads to an increase in Poland's GDP by about 0.36%, with BLIK transactions potentially supporting about 0.18% of GDP. These effects can be interpreted as a subcategory of the total impact of BLIK on GDP presented earlier. Our analysis also indicates a decrease in the consumer price index (CPI) by about 0.10%, with BLIK itself supporting a decrease in the index by about 0.05%. Again, we estimate that within these broader economic effects, 45% are the net effects of BLIK meaning if BLIK did not operate in the Polish market they would not occur. This illustrates that even a single channel of BLIK's influence, such as facilitating cost reductions for companies engaged in e-commerce, can significantly impact the economy.



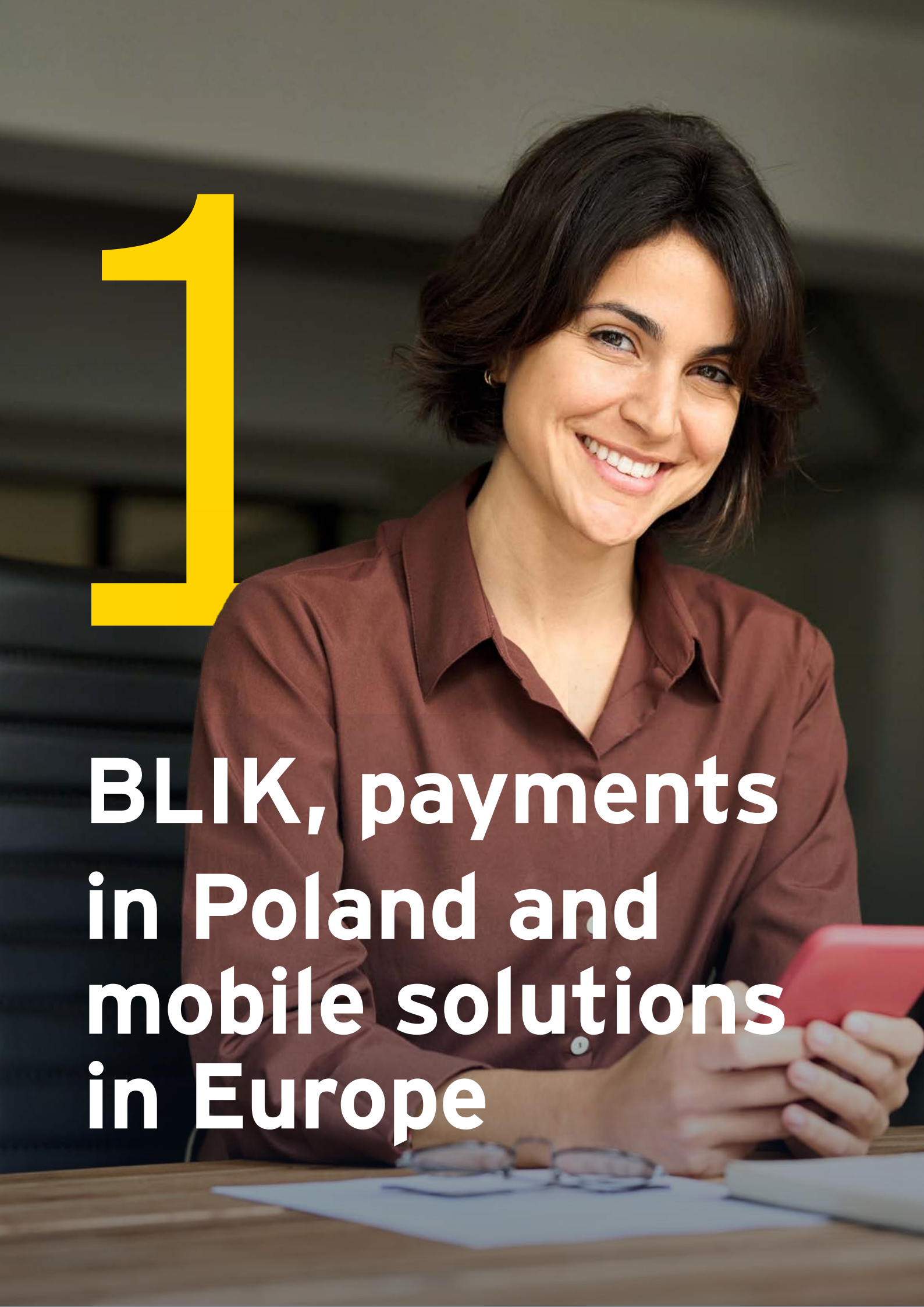
Introduction

Electronic payments are an area where Poland no longer has any significant gaps compared to highly developed countries, and in some aspects, it even surpasses them. Nevertheless, this sector is undergoing dynamic changes, driven by consumer preferences, the ongoing digitization of the economy, particularly in trade, and new payment technologies. In this context, BLIK – the most popular mobile payment system in the country, which celebrates its **10th anniversary** in 2025 plays a vital role. On this occasion, we have prepared a report aimed at presenting the characteristics of BLIK, its significance for the payments market, and its impact on the economy.

The report covers **four key topics**. In the first chapter, we present basic information about BLIK, showing its role in the retail payment market in Poland and in comparison to other mobile solutions in Europe. The second chapter analyzes the extent to which the development of BLIK creates the market for electronic transactions (rather than merely replacing other transaction methods), which is associated with additional economic benefits. The third chapter describes the wide range of economic and social channels through which electronic transactions impact the economy and estimates the aggregated impact of BLIK payments on the Polish economy. In the final, fourth chapter, we focus on the currently crucial sector for BLIK, e-commerce, analyzing its impact on the economy, including the part supported by BLIK.

The report is supplemented by **technical appendices** available on the website related to its publication and can also be requested from the authors of the study. They contain details regarding the advanced quantitative methods applied, the data utilized, and the assumptions made.

The study was **conducted by the EY Economic Analysis Team**, consisting of Marek Rozkrut, Michał Kowalczuk, Piotr Dybka, Maciej Łopusiński, Stanisław Bartha, and Anna Komisarska, **commissioned by Polski Standard Płatności, the owner of BLIK**. The report fits into the broader history of the team's studies on various aspects of electronic payments, conducted in many countries around the world.



1

BLIK, payments in Poland and mobile solutions in Europe

In the first chapter, we present basic information about BLIK payments and highlight BLIK's role in the retail payment market in Poland, as well as in comparison to existing solutions abroad. First, we introduce the services offered within the system and how they operate. Next, we briefly outline the history of BLIK. The following sections contain key statistics illustrating the development of BLIK and its market share. In particular, we show the evolution of the number of BLIK users and their demographic characteristics, the development of the acceptance network, and the value of BLIK transactions across different channels, also in comparison with other payment instruments. In the last part of the chapter, we compare BLIK with mobile solutions in other European countries.

1.1. Basics of operation

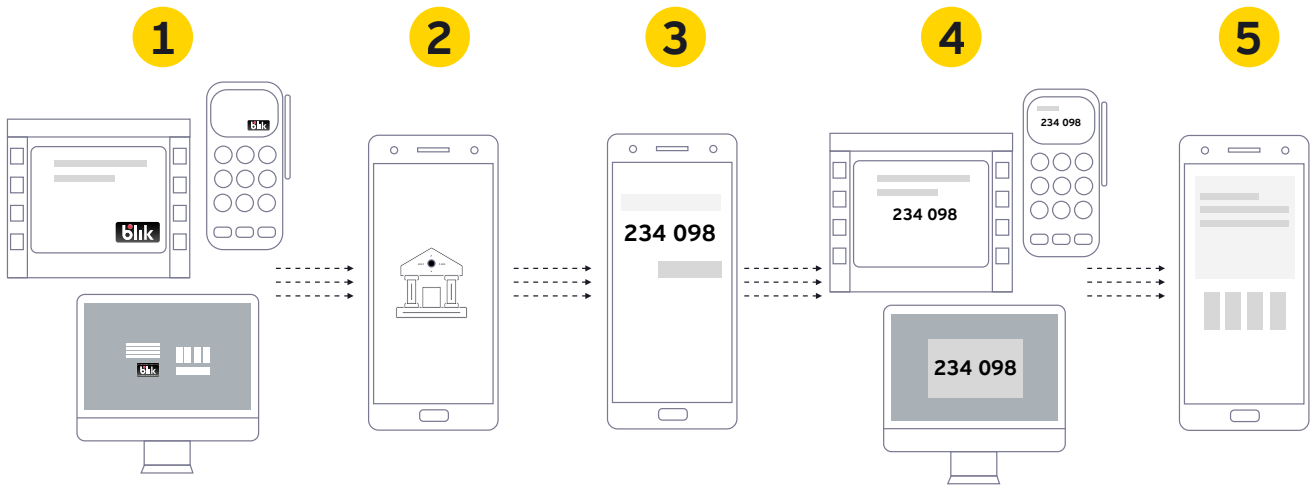
BLIK is the most popular mobile payment system in Poland, owned by Polski Standard Płatności (PSP). BLIK operates in **four basic channels**, allowing users to conduct transactions and manage money in:

1. Physical stores,
2. Web,
3. ATMs, and
4. Person-to-person (P2P) transactions.

To use BLIK, one needs a bank account in one of the banks participating in the system and the bank's mobile application installed on the phone. The system is based on a one-time 6-digit code generated in the banking application with each payment, used to confirm and execute the transaction. In addition, BLIK enables contactless payments based on NFC technology.

In transactions at physical and online stores, and at ATMs, the **operation scheme** is the same. First, the user must declare a BLIK payment at the point of sale (see figure 1). The second and third steps involve logging into the banking application on the phone and generating the 6-digit BLIK code. The received code must then be entered on the device executing the transaction (POS terminal, website, ATM). The entire process concludes with the acceptance of the payment on the phone (step 5). In contrast, P2P payments do not require code generation, as they are conducted solely using the application, and only the phone number of the BLIK user to whom the payment is addressed is needed. Such transactions are then settled through the instant payment system Express Elixir.

Figure 1.
The course of a BLIK transaction



Source: EY based on information from Polski Standard Płatności.

BLIK allows for **simple and fast payments**. On the internet, BLIK payments do not require logging into the bank's website (in the case of trusted stores and browsers, even the code is not needed) or providing a series of information in forms, and the payment is accepted through the phone, making the entire process faster and more convenient. In transactions at physical stores and ATMs, there is no need for a payment card or wallet to carry out transactions with BLIK, which many people may see as an advantage, although a phone with internet access and the bank's application is still necessary. Moreover, contactless payments introduced in 2021 have significantly accelerated the payment process in physical stores. Meanwhile, transfers to a phone number, i.e., P2P transactions, operate based on the phone number assigned to the bank account. This is easier to remember (or select in the app from the contact list) than the long IBAN number required for traditional transfers. It is also worth mentioning the aspect of security, which is guaranteed by the final step of the transaction, namely the approval of the payment in the application.[1]

New services include deferred payments – BLIK Pay Later – available to users from 2024. BLIK Pay Later allows user to make an online purchase up to 4,000 PLN, with the payment deferred for up to 30 days. In addition, at the end of 2024, the BLIK Recurring Payments service was expanded. This allows the user to set a date and amount for regular payments without needing to authorize the code each time, which was not possible before. Furthermore, the availability of this service will significantly increase in 2025 as more banks implement it. A lesser-known product is the BLIK Check, which is a one-time, 9-digit code secured with a 4-digit password and issued for a specific amount. With the check, one can withdraw cash from an ATM or pay in selected physical and online stores, and to use it, only the 9-digit code and password are needed. It is used to transfer money offline for distributing rewards, paying employee benefits, or providing funds to a child or someone who does not have a mobile application.

BLIK and the retail payments strategy for the European Union

In 2020, the European Commission developed a strategy for EU retail payments. It emphasizes the key importance of a sovereign European payment system based on an integrated instant payment system, which reduces vulnerability to external threats and increases the autonomy of payment solutions in the EU. The strategy aims to support initiatives in EU countries regarding cashless payments, which, as intra-EU solutions, guarantee greater security for the payment system in times of crisis.

Moreover, the Commission seeks to reduce further market fragmentation, which hinders cross-border operations. A similar tone was adopted in the Eurosystem's (the central banks of the euro area) strategy for 2024, which aims to create a pan-European solution encompassing payments at physical points of sale, mobile payments, and e-commerce.

The Commission's vision is that:

- Citizens and businesses in Europe benefit from a broad and diverse range of high-quality payment solutions, supported by a competitive and innovative payments market and based on safe, efficient and accessible infrastructures.
- Competitive home-grown and pan-European payment solutions are available, supporting Europe's economic and financial sovereignty.

BLIK aligns well with the European Commission's strategy. It is an innovative and competitive payment system that originated in Poland and is expanding its operations to other European countries (Slovakia and Romania). Additionally, BLIK has its own settlement and authorization system, which gives it independence from foreign entities processing transaction data.

1 Although there are scams based on BLIK code fraud, in which a system user voluntarily shares the code under the influence of scammers and then approves the transaction.

1.2. History of development

BLIK entered the Polish market in February 2015 as part of a **joint initiative** undertaken by six key banks: PKO Bank Polski, Alior Bank, Bank Millennium, ING Bank Śląski, Bank Zachodni WBK (now Santander Bank Polska), and mBank. The collaboration between the banks aimed to build a common standard for mobile payments and was established back in 2013. The first step was the creation of Polski Standard Płatności (PSP), which received permission from the National Bank of Poland (NBP) to operate in Poland as the BLIK mobile payment system. To enable contactless payments at POS, in 2020, Mastercard also became a shareholder of PSP, providing access to the necessary technology. Currently, 21 banks and over 42 payment agents participate in the system, holding more than 90% of the market share.[2] In 2024, BLIK entered the Slovak market, and it will soon appear in Romania, where it received authorization from the National Bank of Romania (BNR) to operate in 2024. The NBP classifies BLIK as one of the **significant retail payment systems**. More details from the history of BLIK are shown in figure 2.

Due to its achievements and character, BLIK receives national and international recognition. BLIK was awarded the EFMA award for the greatest **innovation** in the retail payment market. Additionally, a study by KANTAR shows that the **BLIK brand** is strong, particularly in terms of recognition and uniqueness.[3] The media presence of BLIK is further evidenced by the title of Top Brand, which has been awarded four times so far (2020, 2021, 2023, and 2024), a prize given to brands that have been most frequently mentioned in the press and online.

Currently, the system includes:

21
banks and over

42
acquirers, holding more than

90%
of market share.

2 Based on information from Polski Standard Płatności.

3 KANTAR (2024), Badanie kondycji marki Q3 2024. Raport kwartalny z pomiaru ciągłego przygotowany dla BLIKA (in Polish).

Figure 2.

History of BLIK's development, 2015–2024

2015

- On February 9, BLIK enters the Polish market.
- BLIK mobile payments available online, in physical stores, and at ATMs. 1 million users within six months.
- International EFMA award – BLIK as the best innovation in payments on the market.

2016

- BLIK's availability in e-commerce approaches 100%.
- The P2P payment service – transfers to a phone number – is introduced.
- The first production implementation of the OneClick model, allowing transactions without re-entering the BLIK code.
- Getin Bank (now Velobank) joins the group of banks issuing BLIK.

2017

- The National Bank of Poland issues the first decision in Poland allowing PSP to operate a non-card payment scheme.
- Implementation of BLIK on Allegro.pl, the largest online trading platform in Poland.
- BLIK available at BGŻ BNP Paribas Bank and banks affiliated with BSP Bank group.

2018

- BLIK can be used for payments in all stores of the two largest discount chains in Poland, Biedronka and LIDL.
- More banks join the system, providing access to BLIK for 90% of mobile banking users. Customers of Bank Pekao S.A. and Credit Agricole can now use BLIK.

2019

- Mastercard becomes the strategic partner of PSP.
- PPRO becomes the first international partner of BLIK in e-commerce.
- SGB Bank group introduces BLIK payments.

2020

- A new BLIK feature is introduced – a request for a transfer to a phone number, available in some banking apps.
- BLIK joins European Mobile Payment Systems Association (EMSPA).
- Adyen, an international intermediary in electronic payments online, makes BLIK available to global e-commerce platforms. BLIK can be used for payments in the App Store.
- BLIK available for customers of Nest Bank and Bank Pocztowy.

2021

- The 6 largest banks provide the ability to make contactless payments with BLIK on a mass scale in physical stores in Poland and worldwide.
- On May 9, the billionth transaction is completed.
- BLIK is available for customers of BOŚ Bank, Citi Handlowy, and Bank Spółdzielczy w Brodnicy.

2022

- PSP receives approval from UOKIK (Office for Competition and Consumer Protection) for the introduction of the deferred payment service – BLIK Pay Later. Initial tests take place in the same year.
- Acquisition of 100% of shares of the Slovak company VIAMO – a provider of P2P payment services and payments for businesses. Work begins on operations in Romania.
- BLIK is available on the Stripe platform and for customers of Bank Spółdzielczy Rzemiosła w Krakowie.

2023

- The NBP classifies BLIK as one of the 'significant retail payment systems'.
- BLIK receives approval from the National Bank of Slovakia to acquire the VIAMO payment platform, now BLIK SK a.s.
- The establishment of BLIK Romania S.A.
- BLIK is listed among CNBC's 200 most important fintechs in the world.
- BLIK is available for customers of Krakowski Bank Spółdzielczy.

2024

- The BLIK Pay Later service debuts in two banks.
- The first BLIK transaction takes place in Slovakia – the service is made available at Tatra Banka.
- BLIK Romania obtains authorization from the National Bank of Romania to operate in the country.

Source: Polski Standard Płatności.

1.3. Users and their preferences

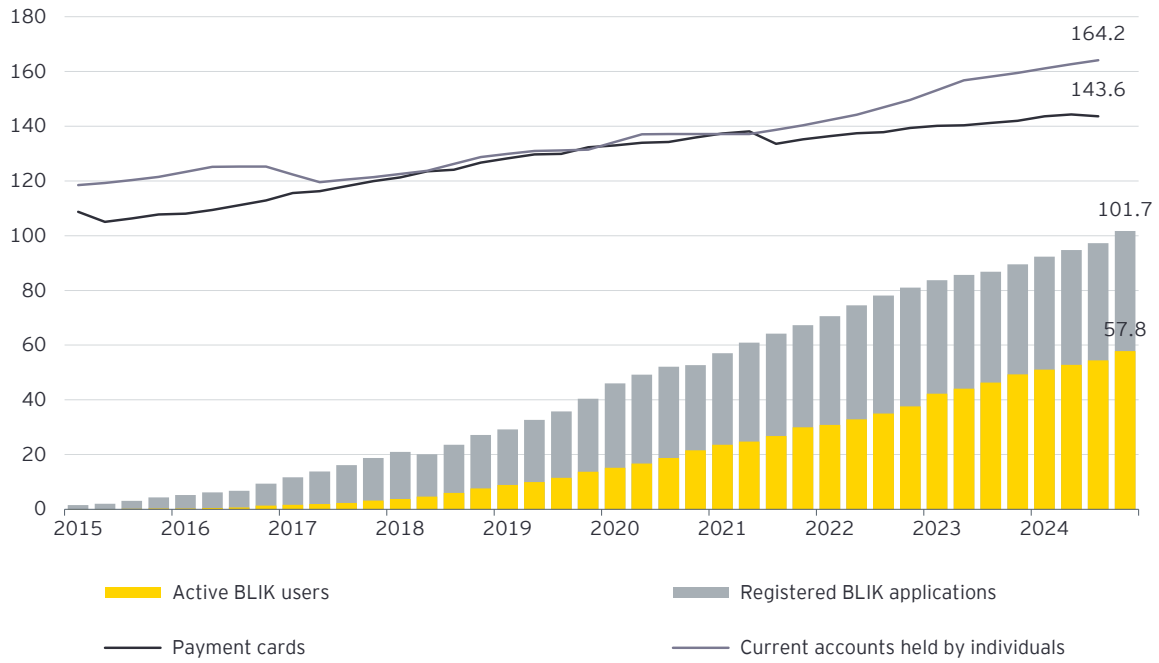
The popularity of cashless payments in Poland has been steadily increasing for years. This trend is made possible by the high and still growing level of banking among Poles, which refers to the widespread use of banking products. Between 2015 and 2024, the number of current accounts held by individuals per 100 people aged 15 and over increased from 119 to 164 (see chart 1), and in 2023, approximately 92% of Poles had a bank account,[4] gaining access to cashless money and payment instruments such as payment cards and bank transfers. At the same time, the ongoing digitization of financial services has allowed for the dynamic development of mobile banking, which surpassed 23 million users in Poland in 2024.[5]

The development of mobile banking enabled the emergence of BLIK, which has registered impressive growth since its launch. First, let's take a look at the "hard" data reported by the payments market participants in Poland.

They are the most precise, but uncorrected for the fact that a given person may have multiple banking applications, payment cards, or accounts. Over the past 10 years, the number of active BLIK **users** has increased to 18.5 million, which translates to about 58 users per 100 people aged 15 and over by the end of 2024. This is an increase of 17% compared to the previous year, illustrating the continuously high dynamics of the system's growth. The number of registered applications is significantly higher, reaching 102 per 100 Poles over the age of 15, indicating additional potential for growth even in the short term. Furthermore, the dynamic development of mobile banking overall means that BLIK's potential is expanding further. It is also worth noting that some consumers may install a banking app because of BLIK, and in such cases, BLIK payments drive mobile banking.

Chart 1.

Evolution of the number of BLIK users, payment cards, and selected banking products in Poland per 100 people aged 15 and over



Notes: Quarterly data. Time series for the population and the number of current accounts were obtained by interpolating annual and semi-annual data, respectively. Active BLIK users are defined as banking applications with at least one BLIK transaction completed in the last month. Until 2023, the number of active users does not include the P2P channel.

Source: Polski Standard Płatności, National Bank of Poland, Polish Bank Association, Statistics Poland, EY analysis.

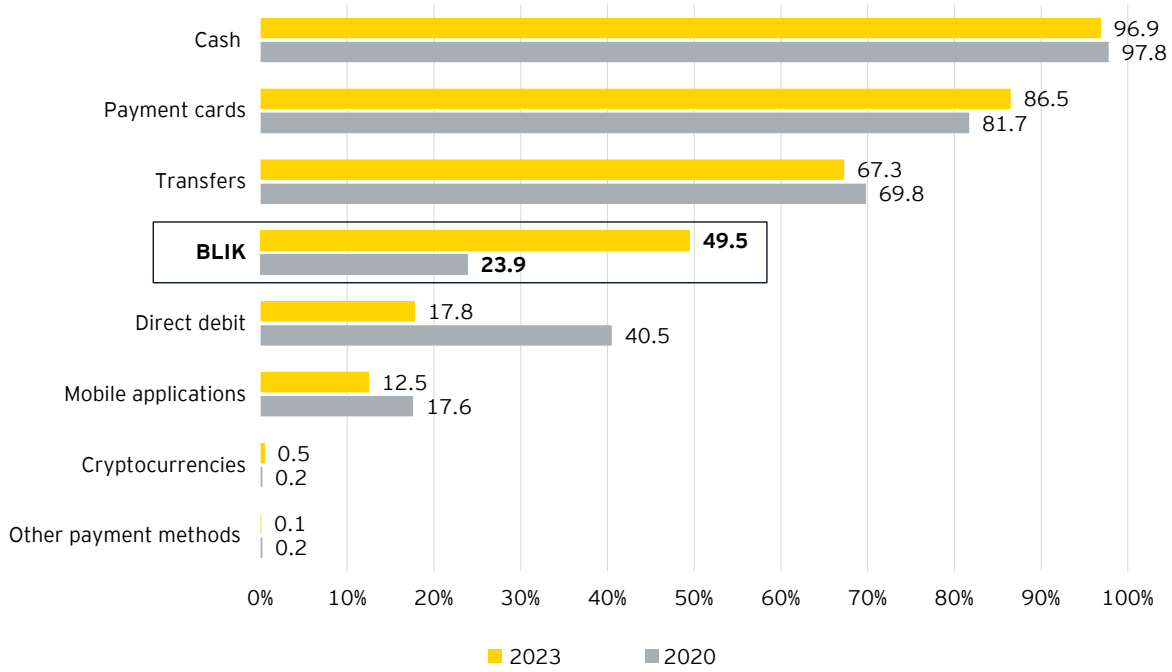
4 NBP (2024), Zwyczaje płatnicze Polaków w 2023 r. (in Polish).

5 Polish Bank Association (2024), Raport NetB@nk, III kwartał 2024 r. (in Polish) The data may overestimate the number of users due to double counting of individuals who have accounts in multiple banks.

Survey data show that in recent years, the payment habits of Poles have undergone a significant change, largely due to the increasing role of BLIK. Between 2020 and 2023, the percentage of people who used BLIK payments more than doubled, from 24% to 50% (see chart 2). At the same time the percentage of people using direct debit and, to a lesser extent, mobile applications decreased significantly. Additionally, a 2024 Gemius study[6] shows that for as many as 51% of people shopping online, BLIK is the most frequently chosen form of making transaction (instant transfers came second, with a significantly lower result of 22%). These changes in consumer behavior demonstrate that in a short period, BLIK has become an exceptionally popular payment method and has gained a significant market share in payments, both by displacing other payment instruments and by creating the electronic payment market (our estimate of the role of these two effects is included in chapter 2).

Chart 2.

Usage of payment methods in the last 12 months in Poland in 2020 and 2023 (% of people)



Notes: Mobile applications include Google Pay, Apple Pay, Garmin Pay, Fitbit Pay, SkyCash.

Source: NBP (2024), Zwyczaje płatnicze Polaków w 2023 r., survey.

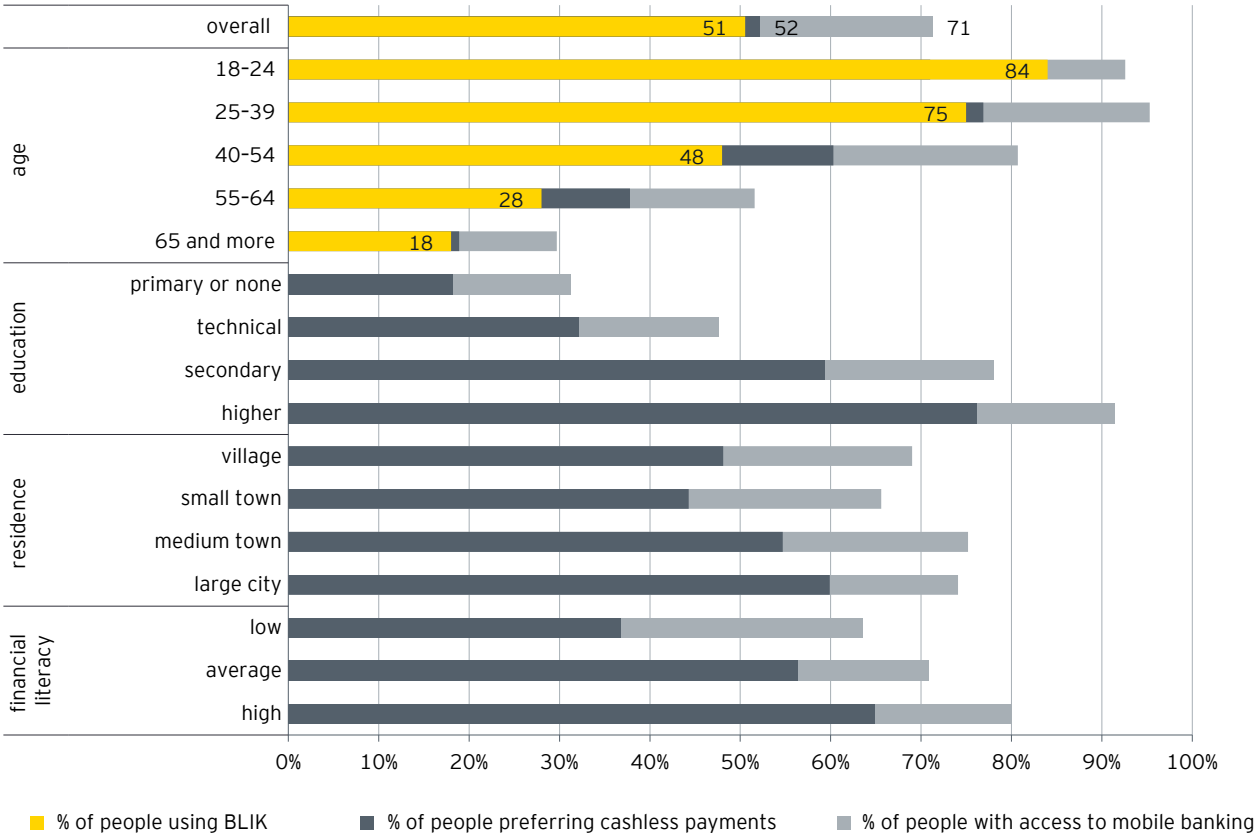
Aggregated indicators for the entire population, however, do not show the differences between demographic groups. Survey studies show that the greatest variation in the use of modern payment and banking instruments occurs due to **age and education**. For example, among Poles aged 18–24, as many as 84% use BLIK, and over 90% have access to mobile banking, while in the highest age category, these shares drop to 18% and 30%, respectively (see chart 3). Although there is a lack of more precise and publicly available data on BLIK users' characteristics other than age, it can be expected that the structure of education, residence, and financial knowledge is similar to that of individuals who prefer cashless payments and have a banking app.

In this case, BLIK payments are most popular among individuals with higher education, living in large cities, and possessing high financial knowledge. It is worth noting that in almost every demographic group, except for Poles over the age of 65 and those with the lowest education, more than half of the individuals use mobile banking. The prevalence of this technology allows BLIK to relatively easily reach a wide range of consumers. Furthermore, the popularity among younger and better-educated generations, whose role in the market and economy will continue to grow, provides potential for further growth.

6 Gemius, Polskie Badania Internetu i IAB Polska, E-commerce w Polsce 2024 (in Polish).

Chart 3.

Individuals using BLIK, preferring cashless payments, and having access to mobile banking in Poland in 2023 by demographic characteristics (% of people)

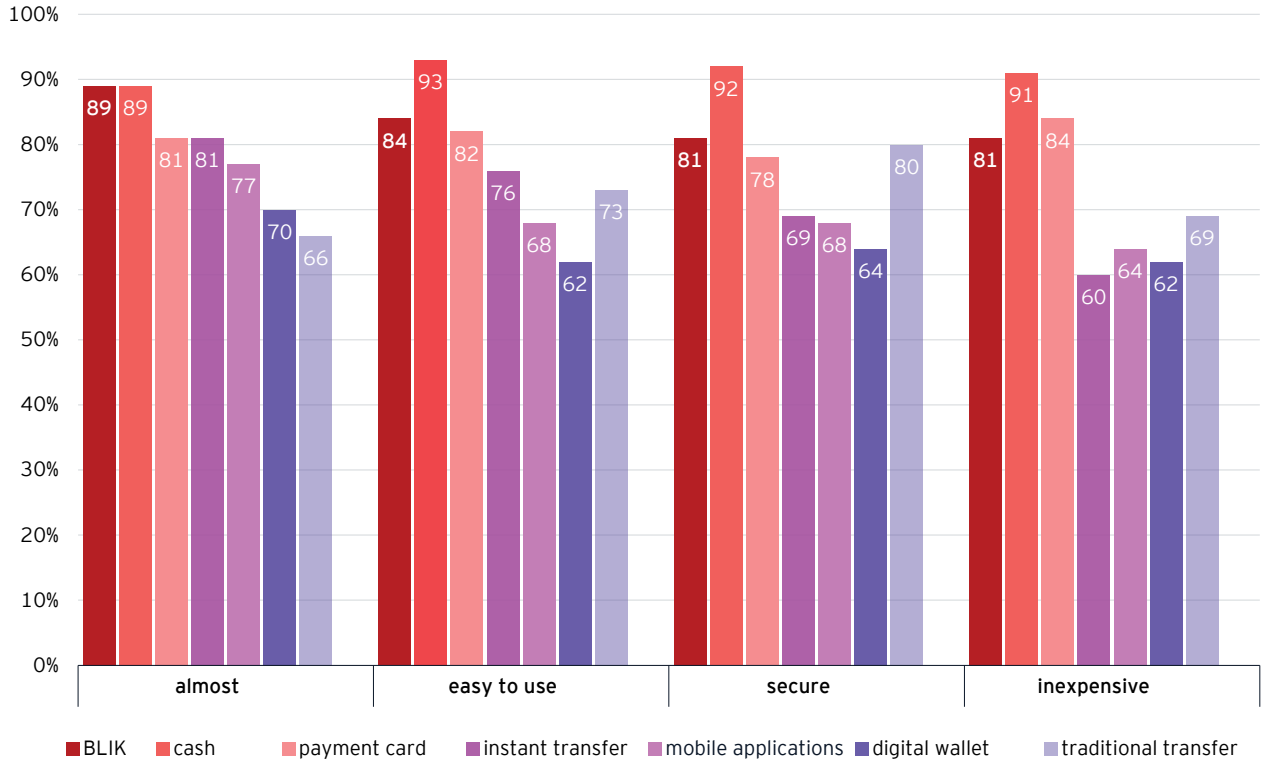


Notes: The overall percentage of people using BLIK includes individuals aged 18–75.
Source: NBP (2024), Zwyczaje płatnicze Polaków w 2023 r., survey; Cashless poland Foundation and Polasik Research, Polscy konsumenci 2023 coraz bardziej mobilni, part of the report Zwyczaje płatnicze a rozwój sieci akceptacji kart w Polsce. Badanie konsumenckie 2023; Statistics Poland; EY analysis.

BLIK payments are considered by the majority of consumers to be **fast, easy to use, secure, and inexpensive**. Between 77% and 89% of individuals agree with this statement, depending on whether the transaction is made in a physical store or online (see charts 4 and 5). The perception of BLIK is slightly more positive in e-commerce. Compared to other payment methods, in the physical channel, BLIK is viewed less favorably than cards and cash, but better than mobile applications. In the online channel, the picture is more nuanced. Above all, BLIK payments in e-commerce, along with cash, are regarded as the fastest payment methods, which undoubtedly contributes to BLIK's popularity in e-commerce. In terms of security and ease of use, BLIK payments online are second only to cash, which is used rather sporadically in this channel. However, regarding cost perception, BLIK is considered more expensive than cash and cards, but clearly cheaper than other payment methods such as transfers, mobile applications, or digital wallets. At the same time, consumer perception may differ from practice for various reasons; for example, cash payments online often involve additional fees and require payment upon delivery, extending the order fulfillment time. Finally, it is worth mentioning a study by KANTAR conducted for BLIK, which indicates that among the reasons BLIK is recommended, speed and convenience are the most frequently cited.

Chart 4.

Perception of payments in the online channel in Poland in 2023 (% of people)

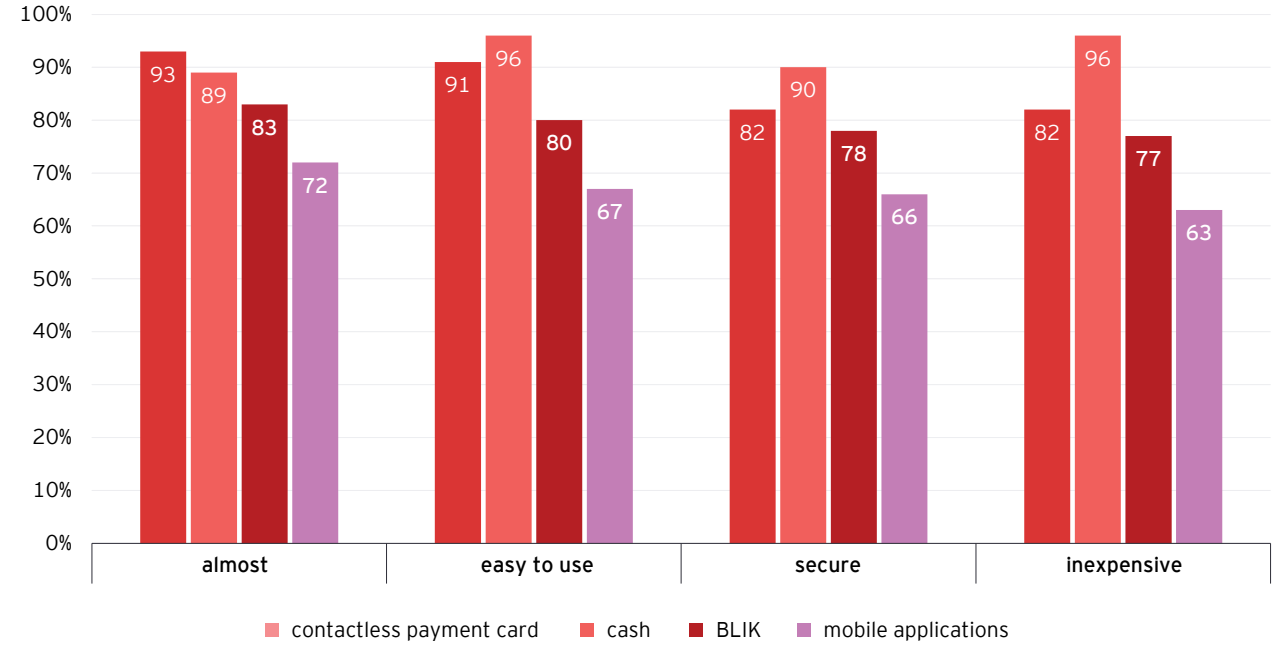


Notes: The percentage of people using a given payment method who agree that it is fast, easy to use, secure, or inexpensive. Mobile applications include: Google Pay, Apple Pay, Garmin Pay, Fitbit Pay. Card payments and traditional transfers refer to situations where the consumer must manually provide the data, while an instant transfer is initiated through the store (pay-by-link). Digital wallets include, among others, Visa Click to Pay, Masterpass, and PayPal.

Source: NBP (2024), Zwyczaje płatnicze Polaków w 2023 r., survey.

Chart 5.

Perception of payments in the stationary (offline) channel in Poland in 2023 (% of people)



Notes: See chart 4.

Source: NBP (2024), Zwyczaje płatnicze Polaków w 2023 r., survey.

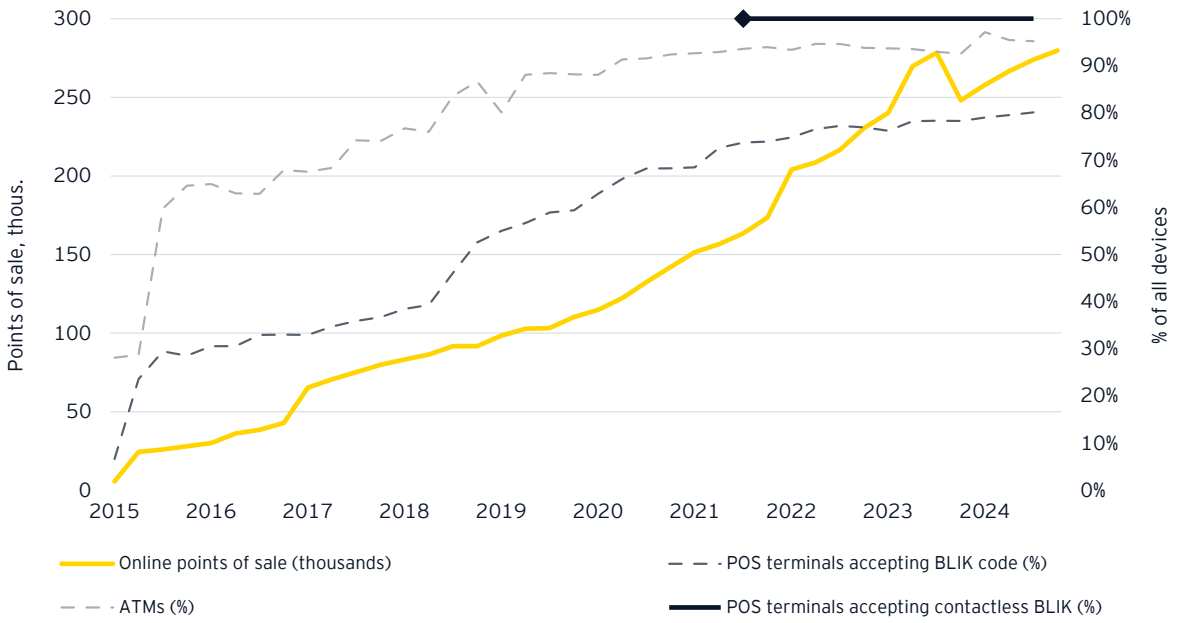
1.4. Acceptance network

The number of institutions participating in the BLIK payment scheme is steadily increasing. When BLIK entered the market in 2015, this payment method was offered by 6 banks, with a market share of approx. 47% (by the value of deposits), and 6 acquirers, most of which were ATM operators. Currently, the system includes 21 banks, responsible for virtually the entire market, and over 40 acquirers, mainly operating in e-commerce, including international players such as Adyen, Stripe, PPRO or PayU.

Cooperation with key financial institutions has provided BLIK with a relatively well-developed **acceptance network** from the very beginning.

Over the next 10 years, BLIK has been successful, becoming a widely adopted payment method (see chart 6), in some respects even surpassing the payment card acceptance network (table 1). BLIK recorded particularly rapid success in e-commerce, where the acceptance network grew very dynamically, currently amounting to approximately 280 thousand points, which is significantly higher compared to the payment card acceptance network. In the second half of 2024, 80% of POS terminals accepted BLIK code payments, while contactless transactions are accepted on all devices compatible with Mastercard's contactless technology, i.e. practically 100% of terminals in Poland,[7] as well as millions of devices around the world. In addition, 95% of ATMs in the country supported BLIK transactions.

Chart 6.
Evolution of the BLIK payment acceptance network in Poland



Source: Polski Standard Płatności; National Bank of Poland.

7 Currently, contactless payments with BLIK are available on phones with the Android operating system. For iOS phones, work is underway to introduce such functionality.

Table 1.

The number of POS terminals, ATMs and online points of sale accepting BLIK payments and payment cards in Poland, as at the end of Q3 2024

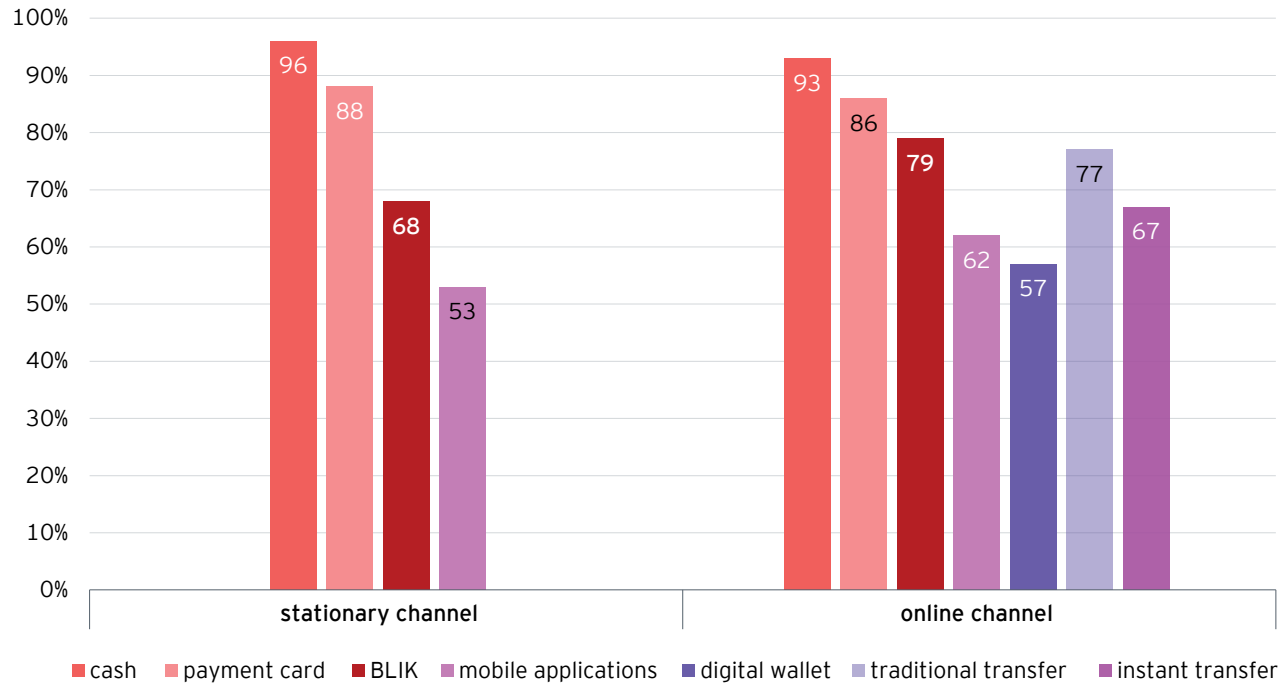
	POS terminals	ATMs	Online points of sale
BLIK	1 093 684	19 936	274 014
payment cards	1 364 163	20 939	98 747

Source: Polski Standard Płatności; National Bank of Poland.

Although hard data indicates a well-developed BLIK payment acceptance network, consumers are less convinced of this. In their opinion, only 79% of online points of sale accept BLIK (see chart 7), noticeably less than cash and payment cards, which may be surprising given the dominant role of BLIK in this channel and the negligible number of cash transactions. On the other hand, in the eyes of consumers, the acceptability of BLIK in the stationary channel reaches 68% and is relatively consistent with hard data.

Chart 7.

Accepting BLIK and other payment methods in physical and online channels in Poland in 2023 according to consumers (% of people)



Notes: The percentage of people agreeing that a payment method is accepted. Explanation of the different payment methods in the notes to chart 4 of the previous section.

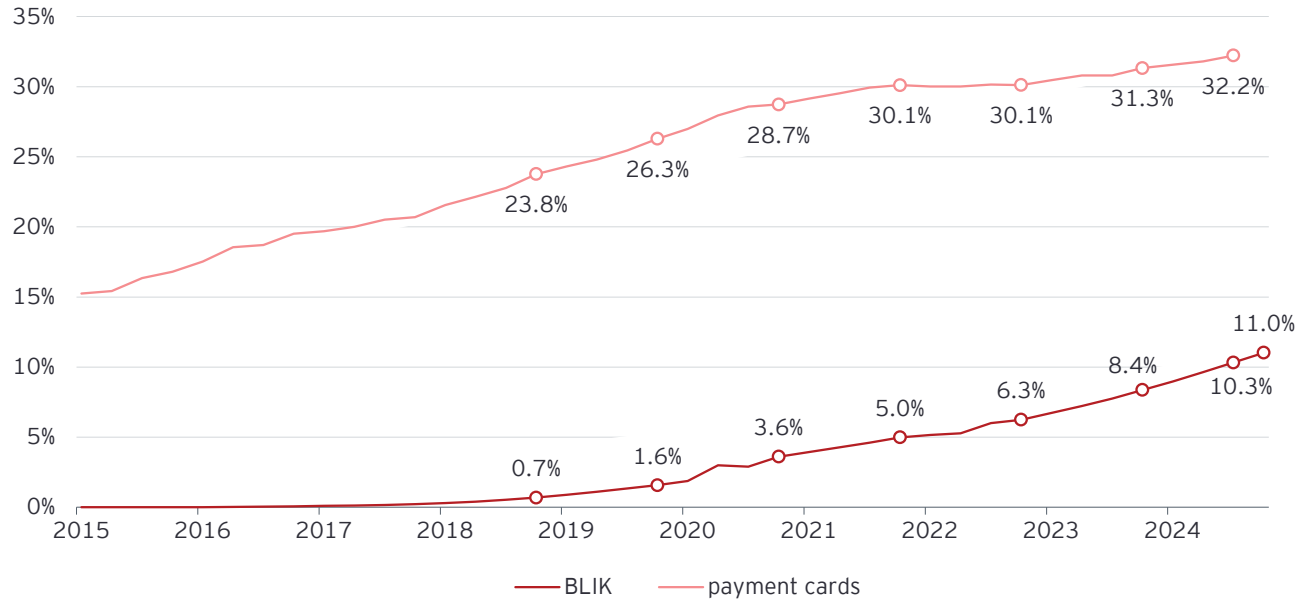
Source: NBP (2024), Zwyczaje płatnicze Polaków w 2023 r., survey.

1.5. Transactions

Starting from 2018, **BLIK payments** have been growing at an incredibly fast pace, as illustrated in chart 8. At the end of 2018, the value of BLIK transactions related to consumer spending corresponded to 0.7% of final consumption of households in Poland. In the following years, this share grew dynamically, reaching 11% in Q4 2024.[8] This is roughly the same percentage as the total spending on utilities (electricity, gas, water) and fuel in an average Polish household budget. Thanks to its exceptional growth dynamics, BLIK is steadily closing the gap to card payments, which accounted for 32.2% of consumer spending in a similar period. Moreover, considering that the vast majority of card payments in Poland are processed by two global organizations with similar market shares, the scale of BLIK payments is comparable to them.

Chart 8.

Evolution of the value of BLIK and payment card transactions in relation to household consumption in Poland (%)



Notes: BLIK transactions include payments in physical and online stores (excluding P2P), and for card transactions, the value of cashless card transactions made domestically has been adopted. Such BLIK and card transactions are predominantly consumer expenditures of individuals, so household consumption is the most appropriate point of reference. The last quarter for BLIK estimated using the Oxford Economics forecast for household consumption. Seasonally adjusted data.

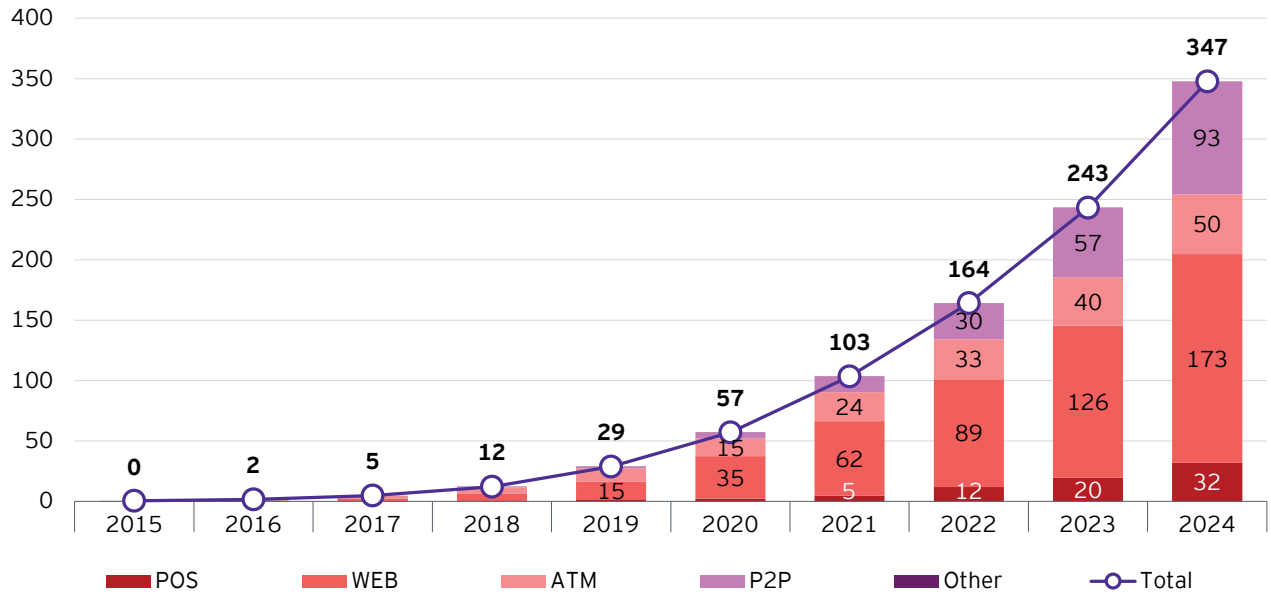
Source: Polski Standard Płatności; National Bank of Poland, Eurostat, Oxford Economics, EY analysis.

If we look at **all channels**, in 2021, BLIK operations for the first time exceeded the value of PLN 100 billion, and in 2024, they reached as much as PLN 347 billion (see chart 9). Over the past 10 years, the average annual growth has been over 100% and has remained very high even during the period of greater service maturity, that is, after 2020. Online payments play by far the largest role, amounting to PLN 173 billion in 2024. P2P transactions (PLN 93 billion) are in second place, overtaking the value of ATM operations in 2023 and gradually increasing their advantage. In contrast, payments in physical stores amount to only PLN 32 billion, although if current growth dynamics is maintained, their role will increase.

8 With P2P payments, only part of which is related to consumption, it would be 16.3%.

Chart 9.

Evolution of BLIK transaction values by channel, 2015–2024 (PLN billion)



Notes: POS = transactions at physical points of sale, WEB = transactions on the internet, ATM = transactions at ATMs, P2P = transactions between BLIK users (transfers to a phone number).

Source: Polski Standard Płatności.

The structure of BLIK transactions divided by channels over the last 10 years well illustrates the evolution that this payment system has undergone (see chart 10). In the first three years of operation, the main function of BLIK was the ability to perform transactions at ATMs (mainly cash withdrawals). However, in a short time, the popularity of BLIK payments online skyrocketed, becoming the most important channel. At its peak, online payments accounted for 62% of the total value of all BLIK operations, and in 2024, this figure was 50%. At the same time, a steady increase in transactions between users can be observed (27% in 2024), along with a previously timid rise in the role of POS payments (9%).

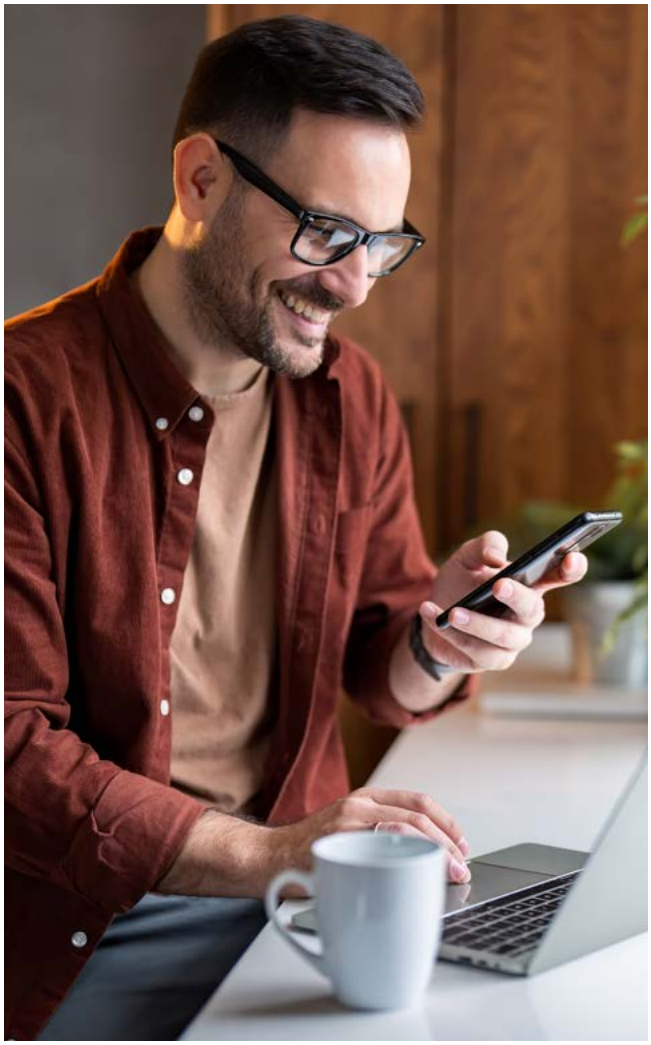
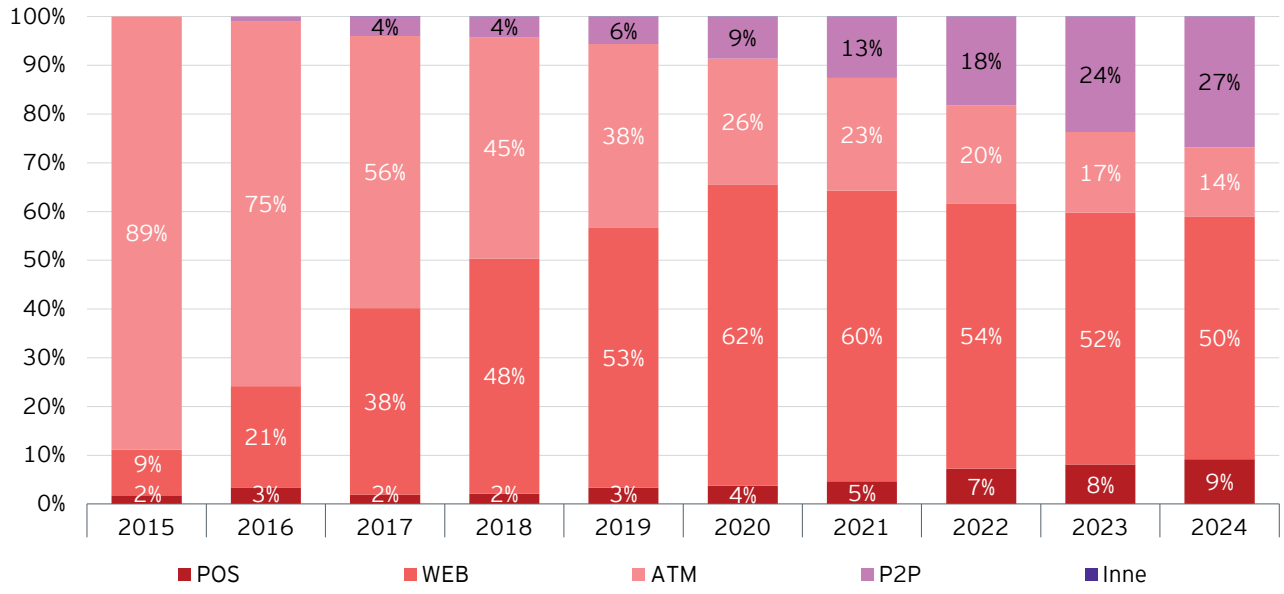


Chart 10.

Structure of BLIK transactions by channel, 2015–2024 (%)



Notes: See notes to chart 9.

Source: Polski Standard Płatności.

Online channel

BLIK dominates in payments on the Polish **internet**. According to estimates based on transactional data,[9] the value of e-commerce in Poland amounted to approx. PLN 250 billion in 2023, with half of the sales paid for using BLIK (see chart 11). Moreover, BLIK has outclassed other payment methods for several years, surpassing payment cards in 2019 and transfers (traditional, pay-by-link, and within open banking) in 2022.

In addition, trade and online services show a strong upward trend, thanks in part to the development of the information society, changing consumer habits, and increasingly better payment infrastructure. In 2015, only 37% of Poles shopped online, while in 2024, this figure had risen to 67%.[10] The frequency of such transactions is also increasing.[11]

The relationship between e-commerce and BLIK is bidirectional. On one hand, thanks to the expansion of online trade, BLIK is becoming an increasingly common payment method. On the other hand, the development of e-commerce is also somewhat driven by BLIK, which, as a convenient payment method, simplifies the order fulfillment process online, attracting more consumers to e-stores (this impact is measured in chapter 2). As a result, this synergy fosters the growth of the e-commerce market, and BLIK plays an increasingly important role in the retail payment system in Poland.

The use of BLIK payments varies between the types of products ordered and the stores offering them. In the case of the most popular shopping category in e-commerce, namely clothing and footwear,[12] BLIK is the payment method in 64 out of 100 transactions (see chart 12). In contrast, when purchasing electronic equipment and household appliances, significantly fewer people (34%) choose BLIK, which can be explained in part by the higher age of buyers of such products.

9 Transaction data reported by NBP includes (1) BLIK payments online, (2) card transactions 'card not present' in Poland, and (3) transfers in the e-commerce environment on the Polish market.

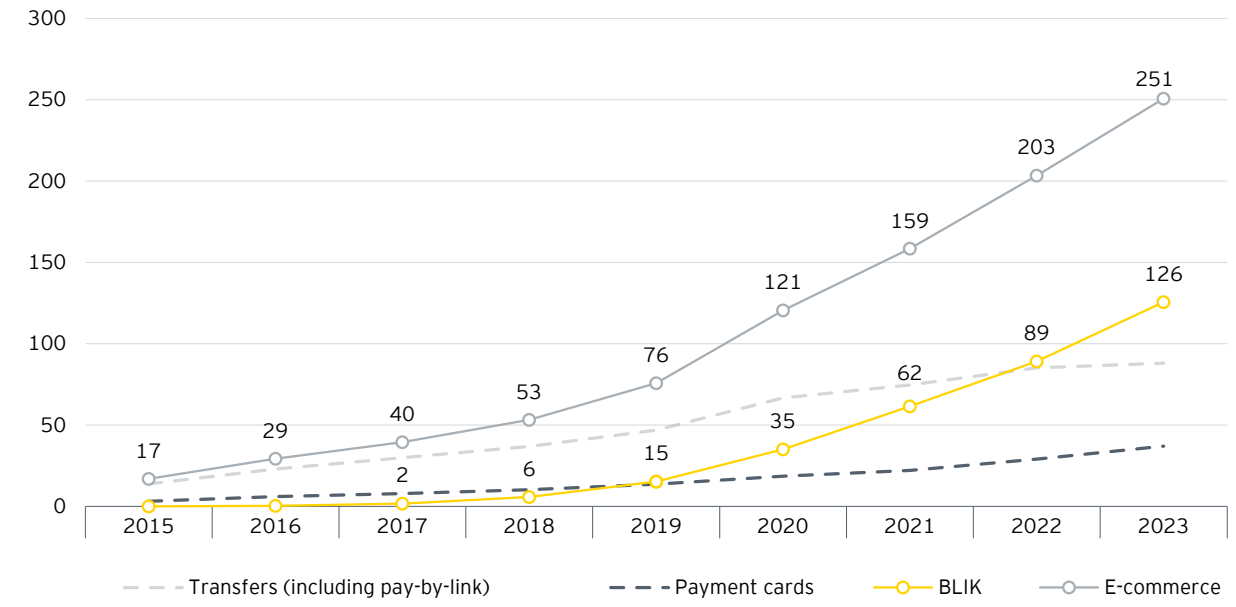
10 Statistics Poland (2024), Information society in Poland in 2024.

11 In 2020, 32% of Poles regularly (on average once a month or more) shopped online, in 2023 their number increased to 38% (Eurostat).

12 77% of people shopping online, which is nearly 11 million, purchase clothing or footwear online. The next most popular shopping categories, although significantly less so, are cosmetics and personal care products (40%), transportation services (28%), and tickets for cultural and sporting events (25%). Statistics Poland, Information society in Poland in 2024.

Chart 11.

Value of the e-commerce market in Poland by payment instruments (PLN billion)

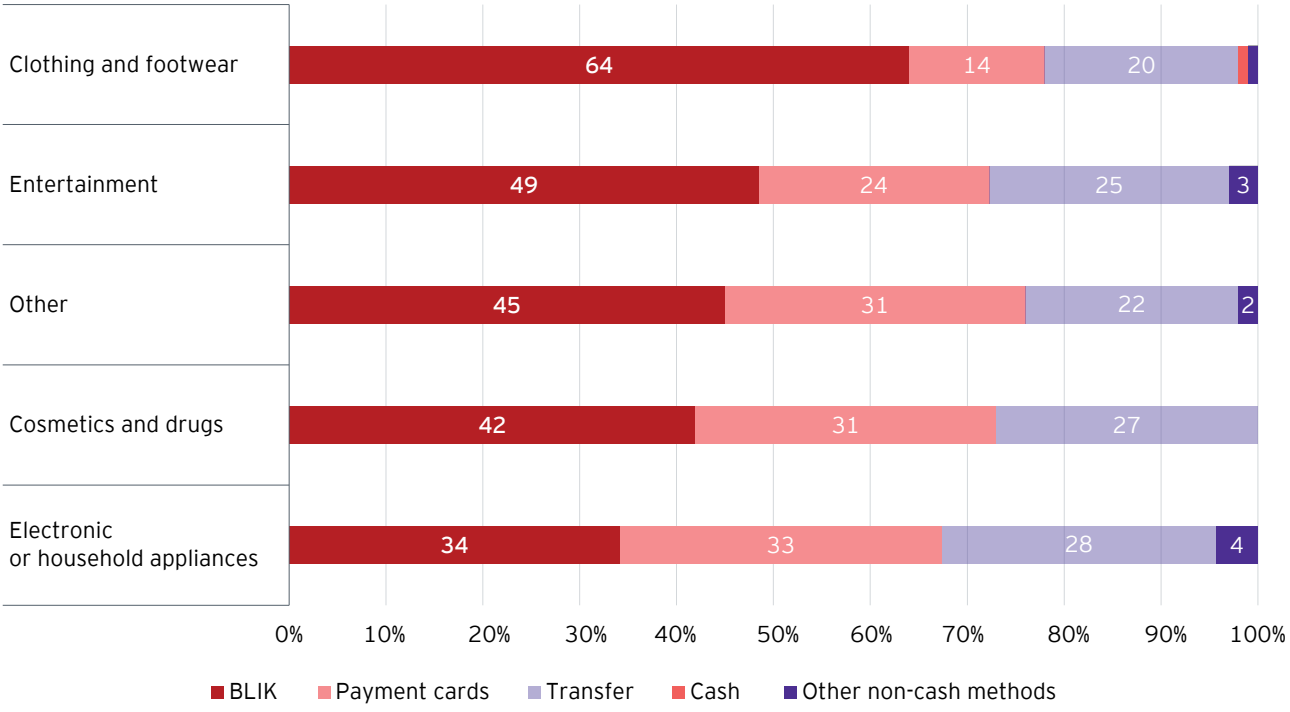


Notes: E-commerce measured as the sum of BLIK transactions, card transactions and transfers in the e-commerce environment.

Source: Polski Standard Płatności; National Bank of Poland.

Chart 12.

Share of BLIK transactions and other payment instruments by online transaction category in 2023 (%)



Source: NBP (2024), Zwyczaje płatnicze Polaków w 2023 r., diary survey.

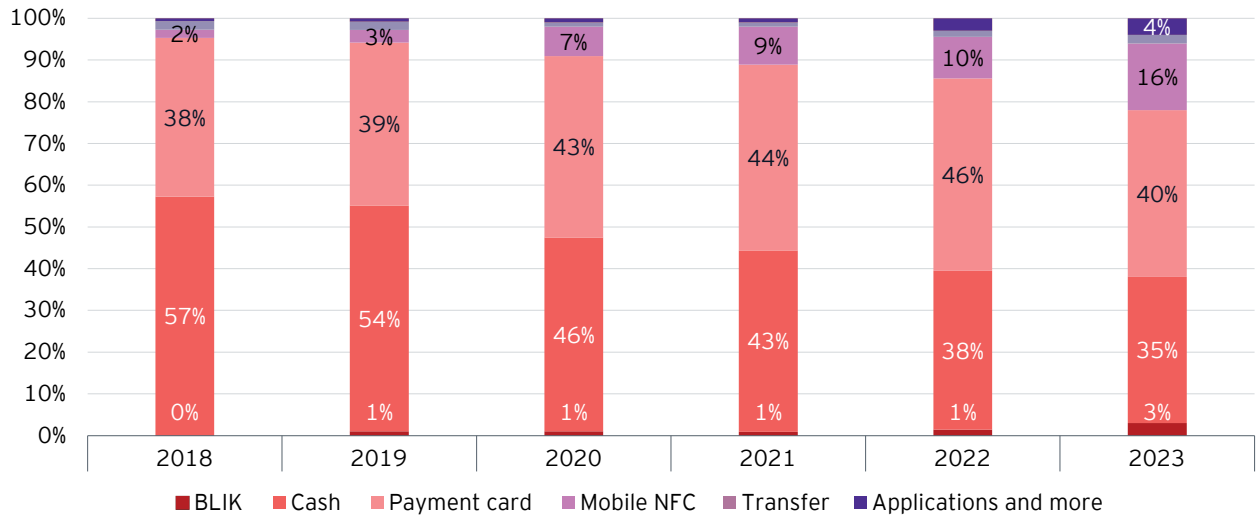
Stationary channel

Compared to e-commerce, BLIK's role in physical retail and service outlets is small. In 2023, consumers paid with BLIK in 3 transactions out of 100, while cards were used in 40% of payments, cash accounted for 35%, and mobile NFC payments made up 16% (see chart 13). BLIK's small share is likely due to the (historical) advantage of cards and mobile NFC in terms of convenience and speed of payment at POS.

At the same time, it is worth noting that the introduction of contactless BLIK payments in mid-2021 significantly contributed to the accelerated growth in popularity of this method in brick-and-mortar stores. As a result, BLIK's share in this channel, although modest for now, is increasing, and this method is becoming increasingly competitive.

Chart 13.

Share of payment methods in the number of transactions at retail and service outlets (%)



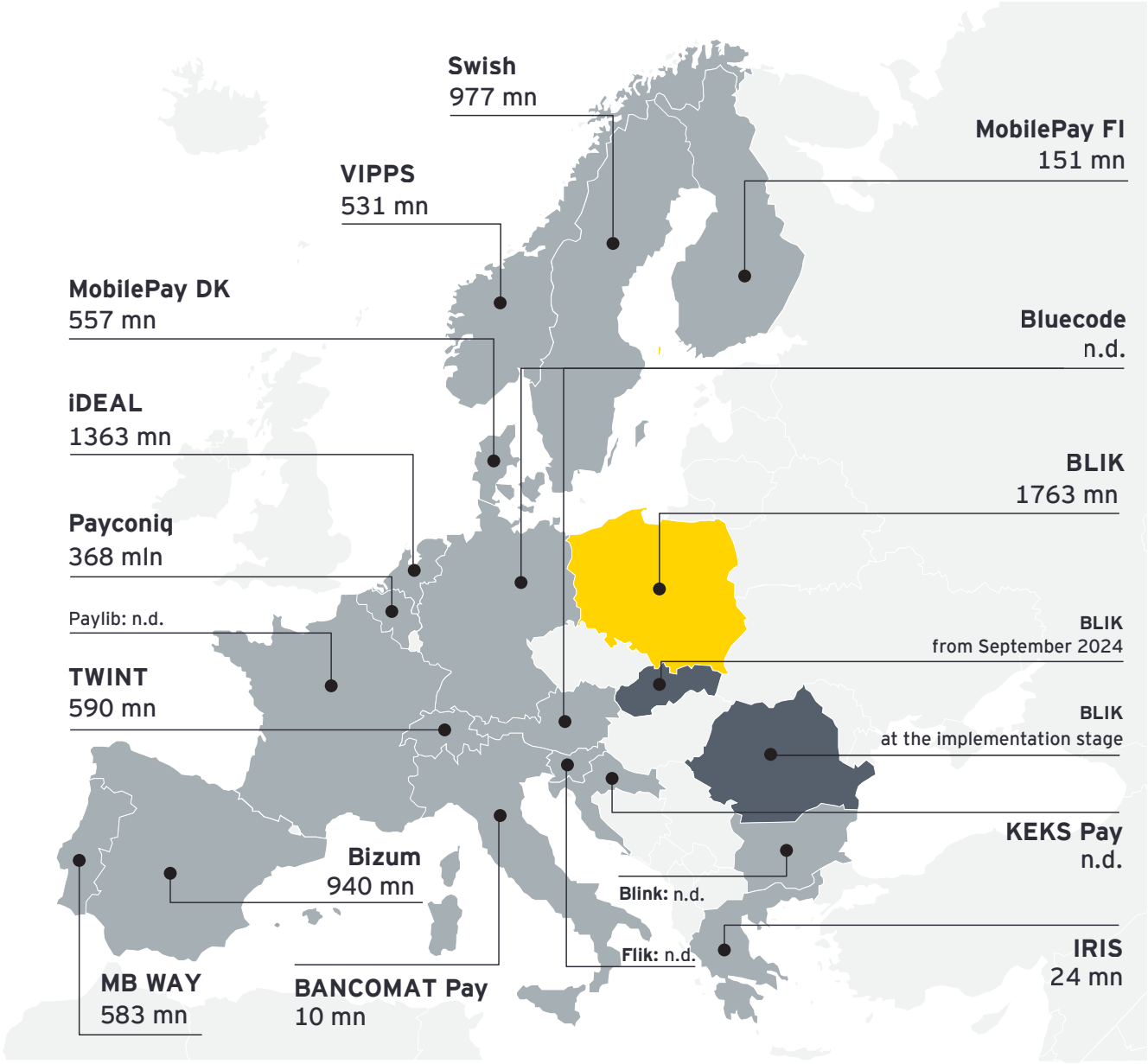
Source: Polasik Research (2024), Zwyczaje płatnicze a rozwój sieci akceptacji kart w Polsce. Badanie konsumenckie 2023.

1.6. Comparison with mobile solutions in Europe

There are already quite a few mobile payment systems in Europe. Most of these payment innovations emerged around the same time as BLIK, during the wave of smartphones replacing non-touch phones between 2012 and 2017. These modern solutions were primarily designed for online payments and quick, convenient transfers between users. Of all European systems, BLIK stands out with the **highest number of transactions** in 2023, exceeding 1.7 billion transactions in Poland (and in 2024, it reached as much as 2.4 billion), as illustrated in figure 3. Besides BLIK, only the Dutch iDEAL achieved a transaction volume above 1 billion. Following that, with over 900 million transactions, are Sweden's Swish and Spain's Bizum. It is also worth noting that in recent years, projects with names similar to BLIK have emerged in Central and Eastern Europe, such as Flik (Slovenia), Blink (Bulgaria), and Qvik (Hungary), indicating the leading position of the Polish solution in the region.

Figure 3.

The largest mobile payment systems in Europe in 2023 along with the number of transactions conducted



Note: Paylib has been withdrawn and, starting from January 2025, makes a part of the Wero system operating in France, Germany, and Belgium.

Source: Polski Standard Płatności based on reports by mobile payment system operators, EY.

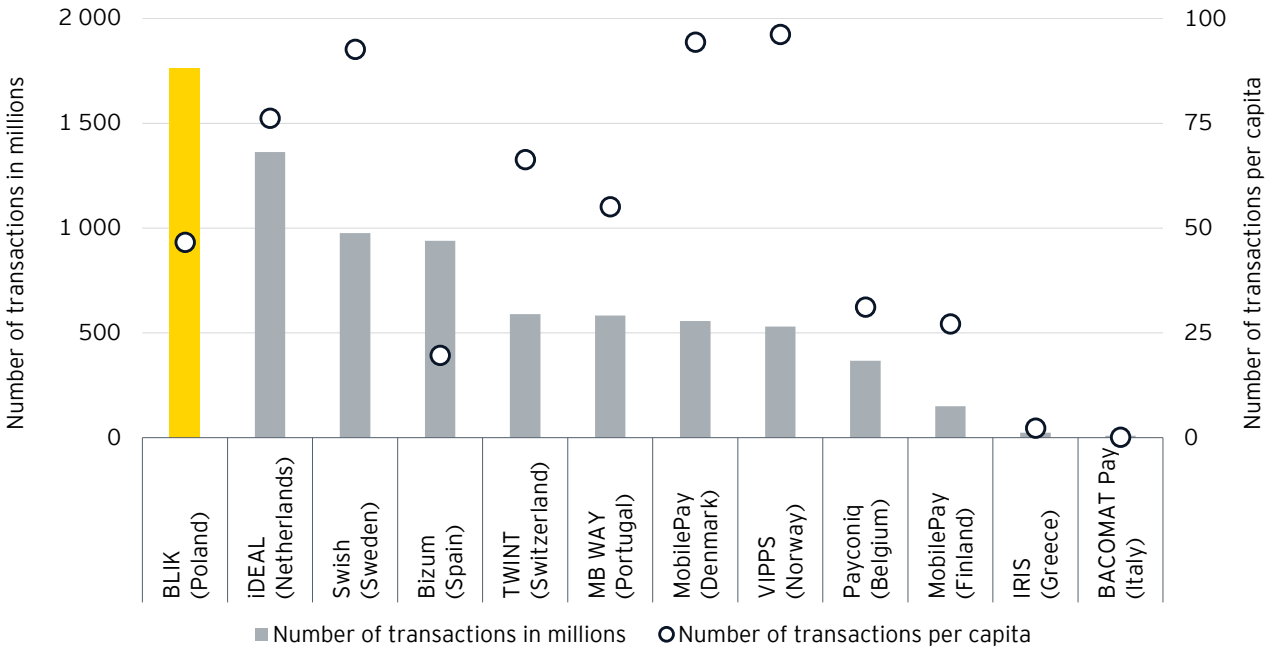
In terms of **the intensity of mobile payments**, Scandinavian countries along with the Netherlands lead the way. In these countries, modern payment methods of this type have been very popular among consumers for years. In 2023, over 90 such transactions per person were recorded in Norway, Denmark, and Sweden (VIPPS, MobilePay, Swish), and over 70 transactions per capita in the Netherlands (iDEAL), as shown in chart 14. Poland's BLIK, on the other hand, reports a solid value of 47 transactions per person per year (in 2024, this will be around 64 transactions), which is slightly less than the MB WAY operating in Portugal. At the same time, it should be noted that in the Scandinavian countries a significant role (50–60% of all transactions) is often played by non-commercial P2P transactions, while in BLIK, transfers between users account for about 25% of all transactions.

In this context, it is also worth mentioning significant non-European solutions such as PIX and UPI, operating respectively in Brazil and India. In particular, PIX stands out for its high usage intensity, as there are approximately 192 PIX transactions per capita in Brazil.

Alongside P2P transactions, the main function of mobile payments is the ability to pay for **orders online**. Compared to the euro area, in Poland, modern e-payment solutions on the internet, such as BLIK, play a much greater role, facilitating about 51% of transactions in 2023.[13] In the euro area, a large share of such payment methods was recorded only in the Netherlands (76% of online transactions) and Germany (46%), while in other countries, the popularity of such payment methods is relatively low (see chart 15).

Chart 14.

Number of transactions in millions and per capita in selected systems and countries in 2023



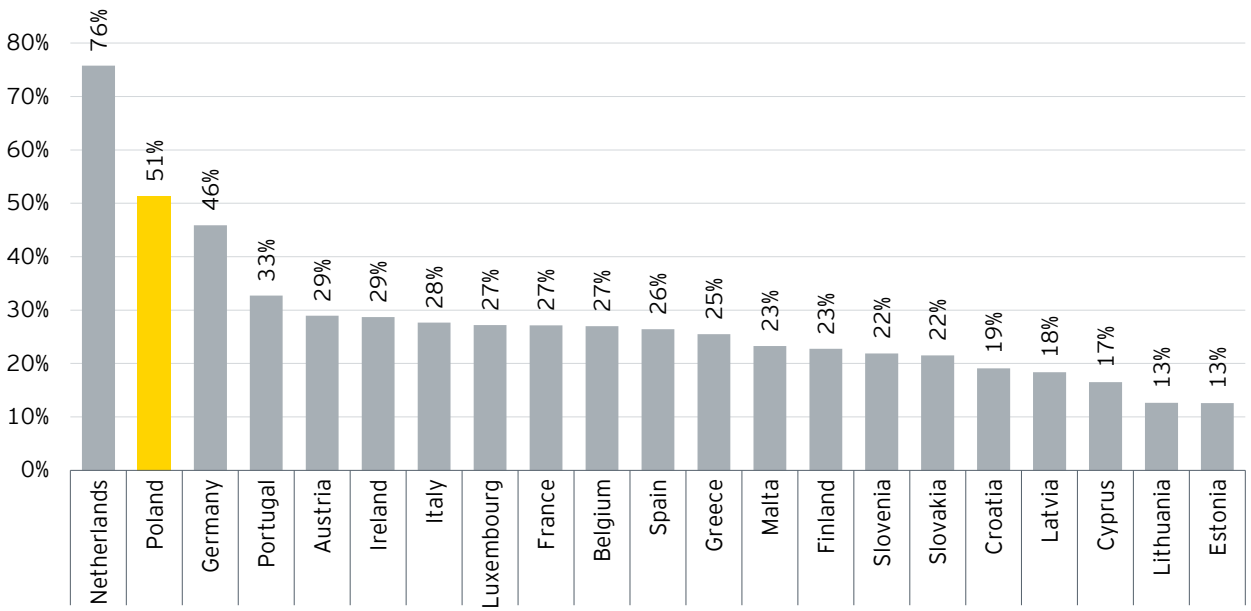
Notes: The number of transactions per capita equals to transactions in a given payment system divided by the population of the country in which it operates.

Source: Polski Standard Płatności, EY.

13 Given BLIK's dynamic growth (see section 1.5), it can be expected that its role will grow in 2024.

Chart 15.

Share of modern e-payment solutions (such as BLIK) in online transactions in Poland and the euro area (%)



Notes: Modern e-payment solutions include payment wallets, PayPal and other mobile apps, e.g. iDEAL in the case of the Netherlands. For euro area countries, consumer responses from autumn 2023 and spring 2024. For Poland, the survey was conducted in autumn 2023.

Source: ECB (2024), Study on the payment attitudes of consumers in the euro area (SPACE); NBP (2024), Zwyczaje płatnicze Polaków w 2023 r.

BLIK is a member of EMPSA

The European Mobile Payment Systems Association (EMPSA) was established to standardize and integrate mobile payment systems in European countries, enabling their users to make seamless mobile payments across Europe. In addition to the Polish BLIK, the group includes ten mobile payment systems from countries such as Belgium (Bancontact Payconiq), Germany and Austria (Bluecode), Denmark, Finland, and Norway (VIPPS MobilePay), Portugal (SIBS/MB WAY), Spain (Bizum), Sweden (Swish), Switzerland (TWINT), Italy (BANCOMAT), Bulgaria (BORICA), and Greece (DIAS). The organization brings together over 90 million mobile payment users, more than one million merchant acceptance points, and hundreds of European banks, processing several billion transactions annually.

As part of the EuroPA project, interoperability between the BANCOMAT, Bizum, and MB WAY services was introduced in November 2024, and the Italian, Spanish, and Portuguese markets are set to be widely integrated in 2025, enabling cross-border payments between these three systems. The interoperability based on instant SEPA transactions and cooperation between financial institutions from member countries aligns with the Eurosystem's strategy. Ultimately, EuroPA aims to integrate additional mobile payment systems to create a pan-European payment network.

Another association of this type is the European Payments Initiative (EPI), under which banks from France, Germany, and Belgium launched Wero in 2024, a digital wallet allowing for quick P2P transactions. Plans include the introduction of additional functionalities, such as online payments, and in the coming years, the Dutch iDEAL is expected to be integrated into the system. The European Central Bank has expressed approval for the initiative to create a pan-European payment system, encouraging further development.

The mobile payment market in Europe is highly fragmented, and most payment systems are strongly rooted in domestic markets, posing a major barrier to expansion. However, in the report European Mobile Payments Market 2024,[14] the authors indicate that the industry is beginning to enter a maturity phase, where well-developed systems with high penetration are trying to expand their operations into new markets. The report concludes that by 2030, three scenarios are possible:

1. **Emergence of a single European solution** initiated by a market leader, which will receive support from EU institutions,
2. **Regional clusters** formed as a result of the expansion and consolidation of the strongest companies in the region, based on the harmonization of technologies and interoperability between the associated systems,
3. **Further fragmentation** that does not allow for the emergence of transnational payment systems, with numerous local solutions dominating the market.

In this context, BLIK is focusing its activities on the markets of Central and Eastern Europe, aspiring to become the leading mobile payment solution in the region and a significant system on a European scale. On the other hand, the vision of a single pan-European system may pose a significant challenge for BLIK. The development of a common solution for all of Europe could mean the dominance of one major player capable of establishing its position in the key European markets and expanding its services to other countries. The current lack of interoperability between BLIK and other European systems may pose a challenge for BLIK's international competitiveness in the future, although it should be emphasized that efforts are underway to introduce interoperability between BLIK in Poland and Slovakia, as well as among other associated systems within EMPSA.

14 Arkwright (2024). European Mobile Payments Report 2024. Status quo of the industry landscape, success factors and future scenarios.

2

BLIK as a creator of the electronic payments market

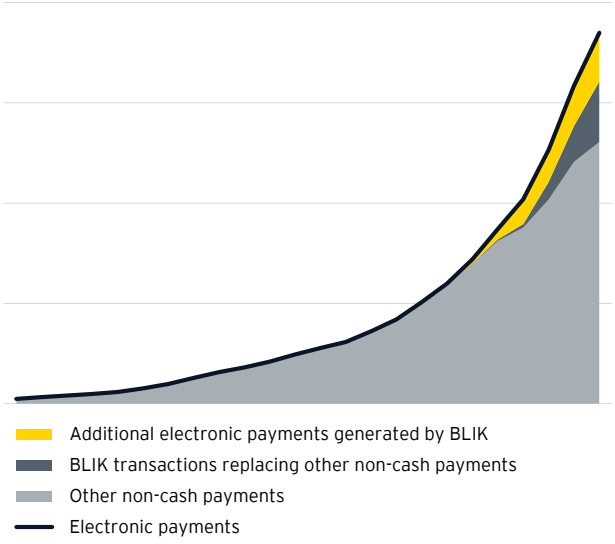
From the perspective of BLIK's impact on the economy, which will be further discussed in this study, it is important not only to consider the value of such transactions but also to answer the question of what portion of cashless payments are additionally created (i.e., not taken from other providers of such services). To this end, we use the so-called counterfactual analysis and the Synthetic Control method, the concept of which is presented in the first section of this chapter. We then show the estimated effects of BLIK's creation of electronic payments using these methods.

2.1. Counterfactual analysis – what if...

In this part of the report, we examine the extent to which BLIK contributes to the development of electronic payments in Poland. Thanks to its advantages, BLIK attracts many new consumers who previously did not use cashless payments or did so infrequently, increasing the popularity of electronic payments in Poland. On the other hand, some BLIK transactions are associated with displacing other cashless forms of payment. In this context, BLIK transactions can be divided into **two categories**, as illustrated in figure 4:

- Transactions that expand the electronic payment market (yellow area),
- Transactions that replace other non-cash forms of payment (dark grey area).

Figure 4.
An illustrative example of BLIK's impact on electronic payments



Notes: The size of the areas does not correspond to the actual values of electronic payments or their types.

Source: EY

The purpose of this chapter is to estimate the additional electronic payments generated by BLIK (yellow area), which we define as the net effect. Such estimates can be obtained by applying the so-called counterfactual analysis, which involves comparing the actual state with its alternative (counterfactual) version. In this case, the **counterfactual analysis** seeks to answer the question of *how electronic payments in Poland would have developed if the BLIK payment system had not existed*.

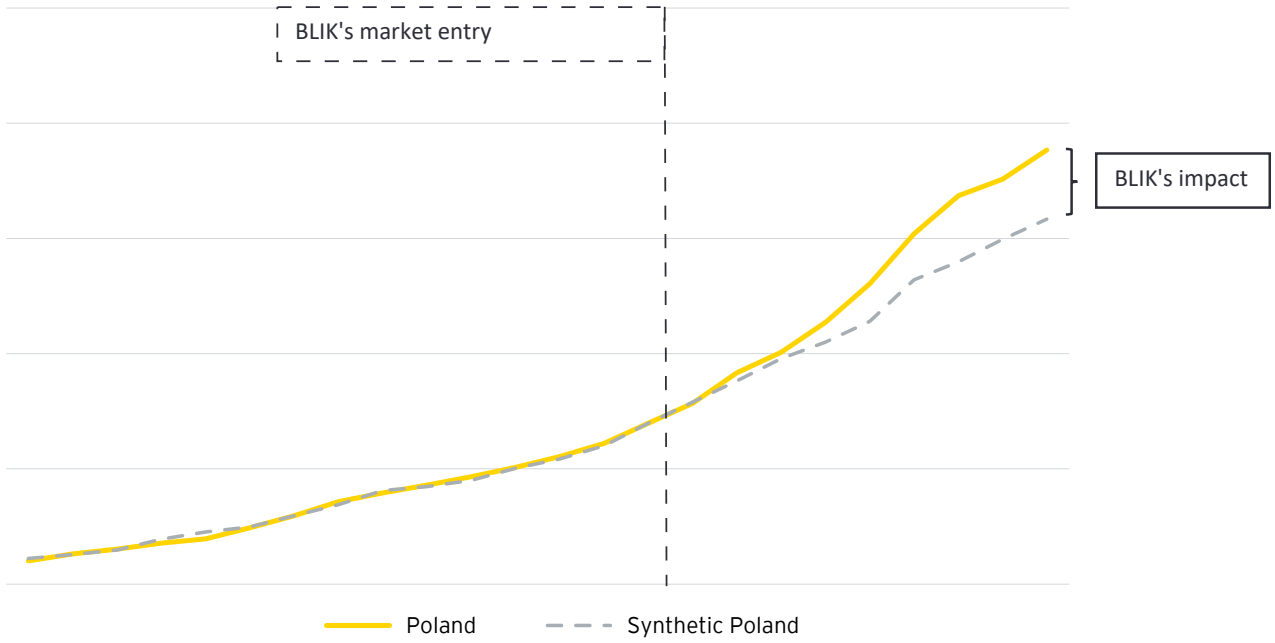
We start the counterfactual analysis by estimating the alternative path of electronic payments in Poland. For this purpose, we use the econometric method of **Synthetic Control**,[15] which involves constructing a synthetic unit (in this case, Poland) by combining several other units (countries) with similar characteristics. In other words, a synthetic Poland is created based on several countries, where electronic payments develop as if BLIK did not exist. This approach is illustrated in figure 5, which shows an example level of electronic payments in Poland (solid line) and its synthetic counterpart (dashed line). Until the emergence of BLIK in the market, both lines behave almost identically, indicating a good fit of the model. In the subsequent period, the lines begin to diverge, and the sought-after impact of BLIK is the space between the two lines. The most important advantages of the Synthetic Control method include the transparency and objectivity of the method, the lack of extrapolation, the transparency of counterfactual values and the simplicity of interpretation.[16]

15 Guido Imbens, laureate of the Bank of Sweden's Alfred Nobel Prize in Economic Sciences, has identified Synthetic Control as one of the most important innovations in the literature on policy evaluation in recent years. Athey, S., & Imbens, G. W. (2017). The State of Applied Econometrics: Causality and Policy Evaluation. The Journal of Economic Perspectives, 31(2), 3-32. https://doi.org/10.1257/jep.31.2.3.

16 Abadie, A. (2021). Using Synthetic Controls: Feasibility, Data Requirements, and Methodological Aspects. Journal of Economic Literature, 59(2), 391-425. https://doi.org/10.1257/jel.20191450,

Figure 5.

An illustrative example of electronic payment development paths in Poland and synthetic Poland



Notes: See figure 4

Source: EY.

First, it is necessary to define the so-called **donor pool**, i.e. a group of countries from which the algorithm will select a few best „donors" for synthetic Poland. In this analysis, we limited the collection of donors to 16 European countries that do not have a mobile payment system similar to BLIK or where its role is marginal (see figure 3 in chapter 1). Next, we selected the specification of the econometric model in which electronic payments[17] are explained by socio-economic variables related to areas such as the economy, payment infrastructure, information society, demographics, and public institutions.[18] For this model, the algorithm identified five countries whose combined characteristics were most similar to those of Poland: Hungary (39% contribution to synthetic Poland), Latvia (36%), Bulgaria (12%), Albania (7%), and Greece (6%). As countries at a similar stage of economic and social development, they provide a good point of reference for Poland.

In the case of Poland, the raw results from Synthetic Control require **additional adjustment**. This is necessary because, in addition to BLIK, we identified another significant factor influencing electronic payments in Poland (which is absent in other countries). This factor is the activity of the Cashless Poland Foundation (FPB), which has been engaged since 2018 in improving the acceptance network for cashless payments in retail trade and service points across the country, significantly contributing to the development of cashless payments. Therefore, we adjust the preliminary result from Synthetic Control by the estimated impact of FPB, thus obtaining the final impact of BLIK on electronic payments in Poland in 2023. Finally, it should be noted that the applied approach may also capture other effects resulting from differences between Poland and the donor countries that our study was unable to account for. More details regarding our analysis method can be found in the technical appendices.

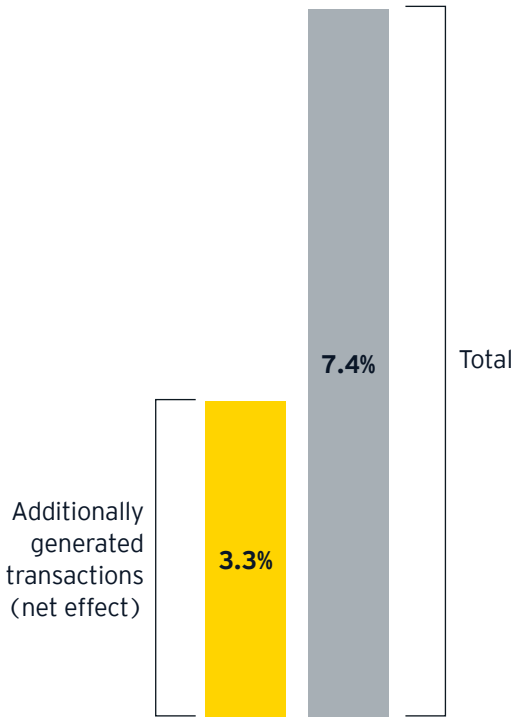
17 In our study, we approximate electronic payments with card payments in the country due to the lack of precise and comparable data on other payment methods. In the case of Poland, we also include BLIK transactions in the POS and WEB channels. For comparability between countries and years, these values are divided by the value of final household consumption.

18 We analyzed over 20 variables and more than 1000 different specifications. Ultimately, we selected the model that provided the best synthetic measure of electronic payments in Poland. It includes the following variables: GDP per capita, financial development index, % of the population using the internet, % of the population enrolled in higher education, and the rule of law index. In our selection, we primarily focused on the accuracy of predictions based on the RMSPE (Root Mean Square Prediction Error) measure of fit.

2.2. Market creation effects

A counterfactual analysis indicates a significant impact of BLIK on the development of electronic payments in Poland. In 2023. **BLIK generated additional electronic payments worth approx. PLN 65 billion, corresponding to about 3.3% of household consumption** (see chart 16). This is roughly the amount that Poles spend on clothing purchases. We estimate that if BLIK did not exist, electronic payments in Poland in 2023 would be 8.8% lower. Among BLIK transactions related to consumer spending, amounting to PLN 145 billion (7.4% of household consumption), nearly half (45%) constituted the net effect.

Chart 16.
Electronic payments related to BLIK in online and physical stores in Poland in 2023 – total and net effect (% of household consumption)



Notes: Data enabling estimates for 2024 are not yet available.

Source: EY.

In 2023, BLIK generated additional electronic payments in Poland worth

PLN 65 billion

which corresponded to

3.3%

of household consumption.

If BLIK did not exist, electronic payments in Poland in 2023 would be lower by

8.8%

Among BLIK transactions related to consumer spending

45%

was the net effect of BLIK's existence.

3

The impact of BLIK payments on the Polish economy

In this chapter, we look at the impact of BLIK on the economy. We start with a broad overview of the impact of different types of cashless transactions, based on the available research and information. First, we summarize the types of effects and channels through which of electronic payments impact the economy and society, focusing on those related to BLIK. We then present the different channels of this influence, illustrating them with specific examples. We also indicate additional social benefits and highlight existing challenges and risks associated with such transactions. Finally, we move on to quantitative analysis, presenting the foundations of our approach in this area and our estimates of the impact of BLIK payments on the Polish economy.

3.1. Types of effects and channels of influence

Electronic payments (including BLIK) positively affect the economy in two areas and through various channels. These include primarily:

- **Effects of the use of electronic payments by various entities** resulting from, among others: supporting innovation, reducing barriers to activity, ensuring access to finance and markets, reducing payment difficulties and increasing the security, stability and transparency of payments (discussed further in detail and estimated in total for BLIK payments in this study).
- **The operational effects of the electronic payment industry**, including the value of services produced, jobs generated, taxes paid by the industry itself, and the associated impact generated by industry suppliers and their employees (discussed further but not separately included in the quantitative part of this study).[19]

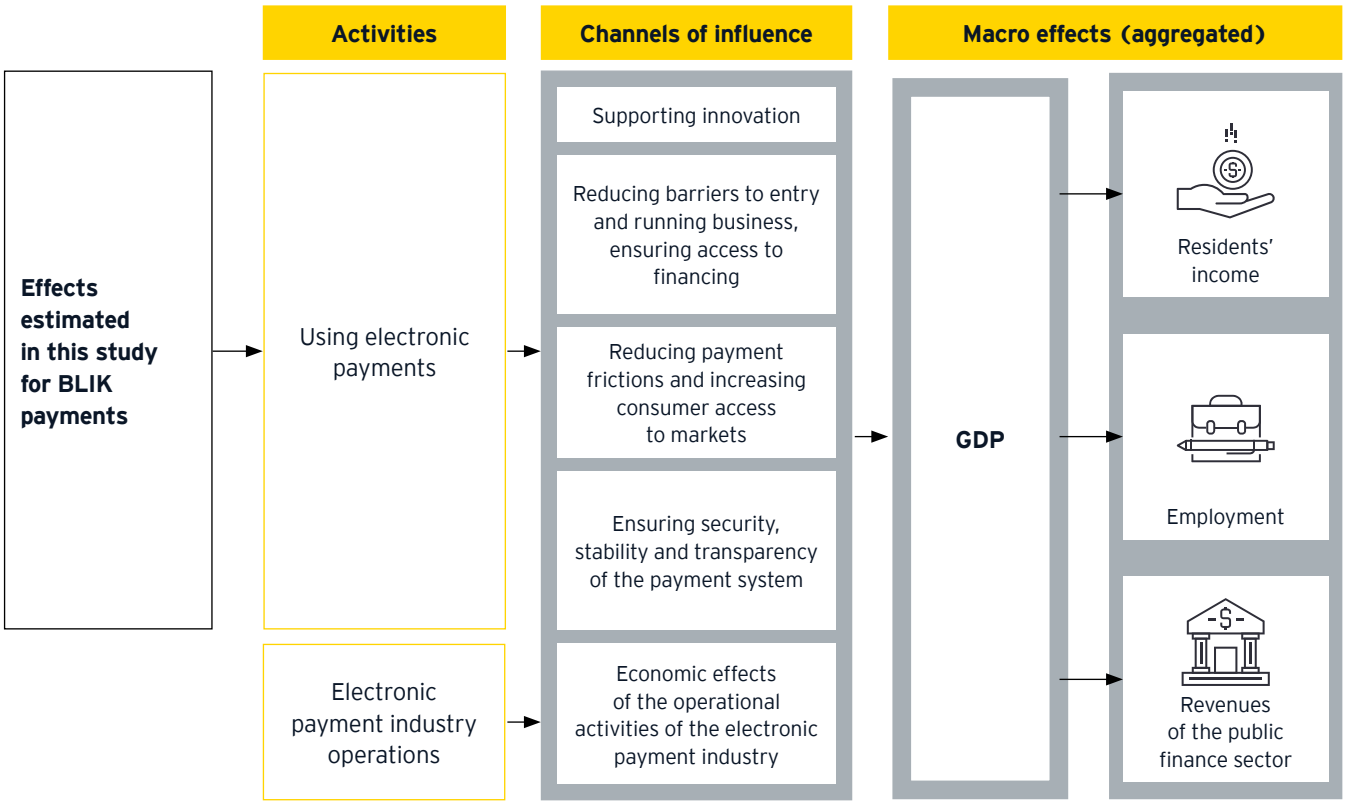
The use of electronic payments supports the increase in efficiency in the economy, and consequently, the volume of production (GDP), income of residents, employment and revenues of the public finance sector (taxes and social security contributions). Digital transactions can also contribute to additional social benefits, such as reducing the environmental footprint of payments.

The highlighted areas, main channels of influence and macroeconomic effects of electronic payments are illustrated in Figure 6. More detailed subchannels of influence and related effects of a micro and mesoeconomic nature (i.e. at the level of individual entities and sectors of the economy) are presented in Figure 7, and their description and examples are provided in Section 3.2.

19 A different methodology is used to estimate the effects of the industry's operations. In the case of most countries, these effects are significantly lower than the effects of using electronic payments by various entities, and at the same time require the collection of very detailed data. However, the approach used to analyze the effects of electronic payments, due to its macroeconomic nature, may also to some extent include effects on the operational activities of the industry.

Figure 6.

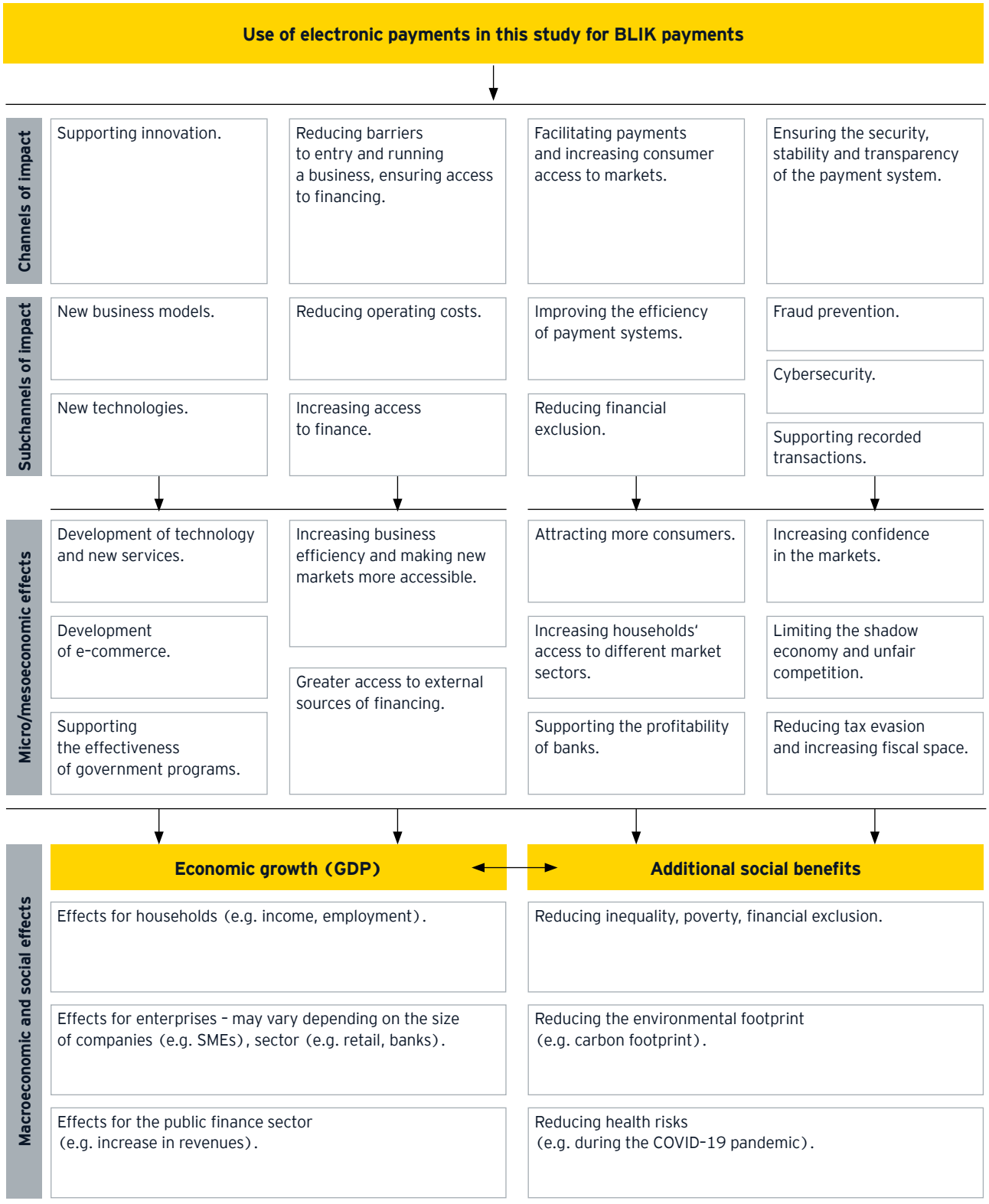
Areas and main channels of impact of electronic payments on the economy



Source: EY.

Figure 7.

Detailed map of the impact of electronic payments on the economy and society



Source: EY.

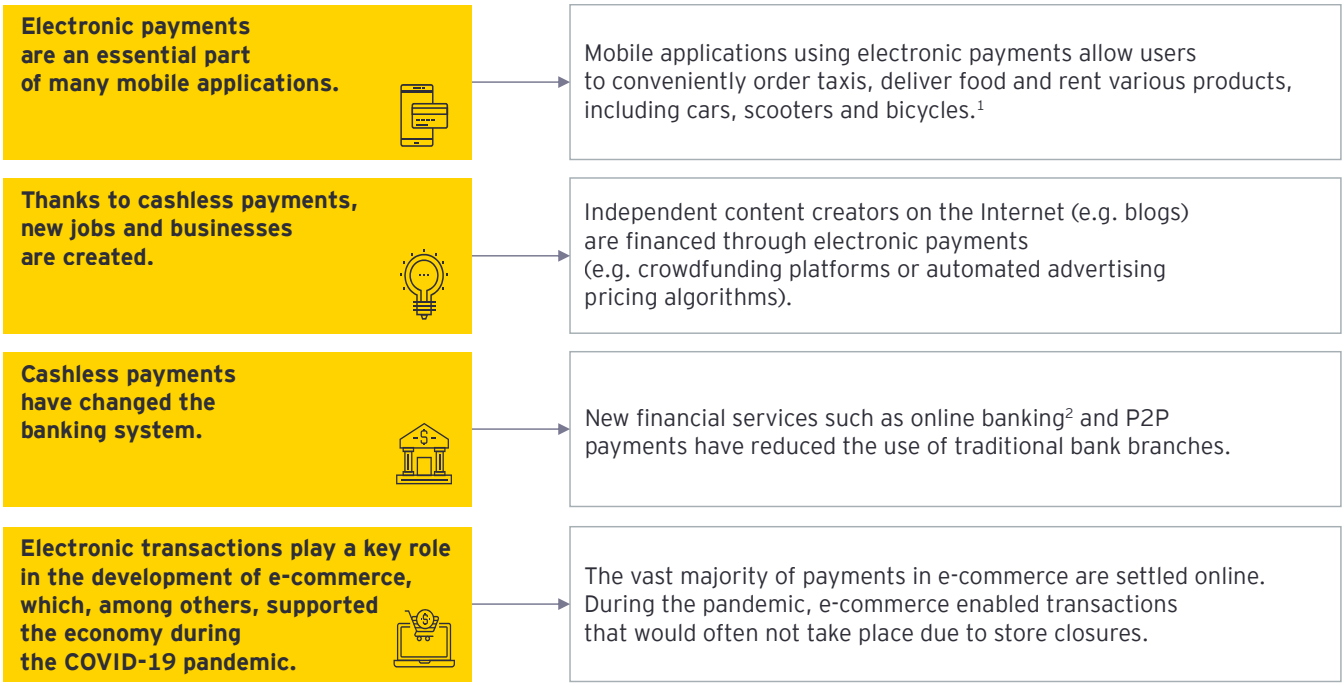
3.2. Key aspects and examples of impact channels

Supporting innovation

Additional innovations result primarily from the creation of new technologies and business models, the development of which is possible or significantly dependent on electronic payments. This results in **economic and social effects related, for example, to the development of e-commerce**.

Innovations in the payments market **are changing business models and creating new services**, examples of which are shown in Figure 8.

Figure 8.
Examples of the effects of electronic payments in the area of innovation



1 https://www.pyszne.pl/; https://panekcs.pl/en/step-by-step; https://www.li.me/locations [online, accessed: 05.11.2024]

2 https://www.paymentoptions.com/the-evolution-of-digital-payments-a-cashless-revolution-2 [online, accessed: 05.11.2024]

Source: EY.

Reducing barriers to entry and running business, ensuring access to financing

Lowering barriers to entry and doing business and ensuring access to finance has an impact on the economy and society primarily by reducing operating costs of companies and enabling access to external funds. This leads to **economic effects related to, for example, improving the efficiency of companies and the availability of markets, as well as expanding their investment opportunities**.

Cashless payments can increase the efficiency of businesses and improve their access to markets because:

- **They reduce barriers to entry for** businesses through the use of online sales (e-commerce), which can be easier than starting a business in a traditional form.
- **They can generate lower so-called social and private costs per transaction** if they are sufficiently popular in the country, thus freeing up resources and funds that can be spent on economic activity.[20]
- **They are helpful in disputes**, as transactions paid in cash can later be challenged if there is not enough evidence that the payment actually occurred.
- **They reduce the risk of theft**, which is particularly important for small businesses.[21]
- **They enable deferral of payments**, which can improve financial liquidity for both companies and households, if used wisely.

Facilitating payments and increasing consumer access to the market

Cashless transactions significantly improve the efficiency of payments, reduce financial exclusion and support trade. With technological development, electronic payments are becoming faster and more convenient. As a result, they take less time than cash payments and create new opportunities for consumers (e.g., in terms of financing). This translates into economic effects related to, for example, **improving the accessibility of markets for consumers, and from the perspective of companies – attracting new buyers**.

Electronic payments attract new consumers and affect their spending in many ways:

- **Modern electronic payments are not slower than cash payments.** For example, a study[22] found that contactless payments were as fast as cash from the consumer's point of view.
- **The speed of transactions is crucial for consumers.** This is one of the most important factors when choosing a payment method,[23] as shorter payment times reduce queues and payment costs.
- **They provide consumers with access to all funds or a line of credit** (as opposed to for cash payments limited by banknotes and coins available in the wallet).

20 Junius, K., Devigne, L., Honkkila, J., Jonker, N., Kajdi, L., Kimmerl, J., Korella, L., Matos, R., Menzl, N., Przenajkowska, K., Reijerink, J., Rocco, G., & Russe, C. (2022). Costs of Retail Payments – An Overview of Recent National Studies in Europe (ECB Occasional Paper Series No. 294). European Central Bank. https://doi.org/10.2866/3482.

21 https://abbeysecurity.co.uk/cost-crime-small-businesses/ [online, accessed: 06.11.2024].

22 Polasik, M., Górka, J., Wilczewski, G., Kunkowski, J., Przenajkowska, K., & Tetkowska, N. (2013). Time Efficiency of Point-Of-Sale Payment Methods: Empirical Results for Cash, Cards and Mobile Payments. In Lecture Notes in Business Information Processing (pp. 306-320). https://doi.org/10.1007/978-3-642-40654-6_19 [online, accessed: 05.02.2025].

23 Kantar Public (2022). Study on new digital payment methods.

- **In the case of payments on credit, they give sellers confidence that the payment will be made**, which is guaranteed by appropriate procedure.
- **Cashless payments are a key enabler of online commerce.** As a result, consumers have access to a more diverse selection of goods and services, including foreign ones.[24]
- **Electronic payments are also linked to travel and tourism expenses.**[25] Compared to cash, electronic payments are more convenient for international travelers, e.g. by providing currency exchange services and reducing the risk of theft.

The aspect of market accessibility for consumers is also important:

- **Residents from remote areas and people with limited access to brick-and-mortar stores gain the opportunity to use new markets and save time for product search** thanks to electronic payments in e-commerce.[26]
- **E-commerce can drive down retail prices** by increasing competition from the online channel. 63% of regular e-consumers say that online shopping helps them save money.[27]
- **Electronic payments increase the availability of external sources of funding and contribute to the increased use of financial services.** By increasing access to financial products, including credit products, they facilitate the opening and expansion of business activities, investment in education or health, and surviving particularly difficult financial periods.

Electronic transactions also improve the financial situation of banks by charging fees directly and allowing other services to be sold to their users.

Security, stability and transparency of the payment system

The security, stability and transparency of payments affect the economy and society through specific subchannels. These include, among others, fraud prevention, cybersecurity, payment security mechanisms, and increasing the number of transactions recorded. They lead to positive economic effects related to, for example, **increasing confidence in the markets and reducing the shadow economy**. Cashless payments ensure a smooth transfer of funds from one party to another, enabling a greater number of transactions. The reasons that make **electronic payments often safer for both parties to the transaction** include:

- **Reduced risk of theft** – carrying less cash reduces the likelihood of theft (by about 11–15% according to a study conducted in China[28 29]).
- **Easier enforcement of guarantees/complaints** – payment history can be used to file a claim.
- **Limiting fraud** – cashless payments facilitate the keeping of transaction records, increasing their transparency.

In addition, cashless payments **support the development of recorded sales**, which leads to a reduction in unfair competition and an increase in space for public spending. EY research in this area indicates the potential benefits of a greater share of electronic transactions in payments and illustrates the scale of lost tax revenues cash shadow economy in various countries (see Chart 17). For example, replacing 10% of the value of consumer cash payments with electronic transactions translated into a reduction of the cash shadow economy from 0.4% of GDP to 2.1% of GDP (depending on the analyzed country).

24 Negreiro, M. (2020). The Rise of E-commerce and the Cashless Society. European Parliamentary Research Service. https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2020)649341 [online, accessed: 05.02.2025].

25 Bayona, L. L., & Rua, A. R. (2019). The Importance of Online Payment on Travel and Tourism Incomes – A Cross-Country Panel Data Study. Academicus International Scientific Journal, 20, 199-222. https://doi.org/10.7336/academicus.2019.20.15.

26 The World Bank and Alibaba group Report (2019). E-commerce development: Experience from China. http://documents1.worldbank.org/curated/en/552791574361533437/pdf/E-commerce-Development-Experience-from-China.pdf [online, accessed: 06.11.2024].

27 Geopost (2023). Delivering Change, 2022 barometer e-shopper.

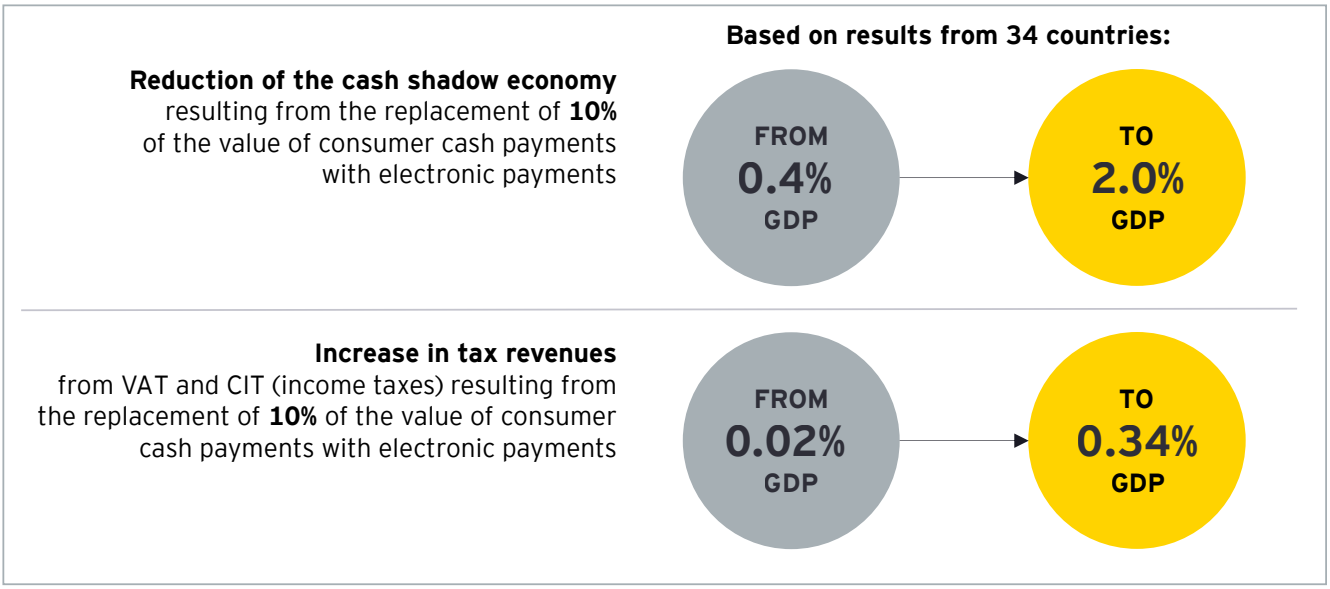
28 Jiang, H., Liang, P., & Ling, L. (2023). Mobile Payment Use and Crime Reduction. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.4477786.

29 Zhao, J., & Huang, Z. (2023). Mobile Payments and Crime: Evidence From China. Applied Economics, 56(7), 765-778. https://doi.org/10.1080/00036846.2023.2288066.

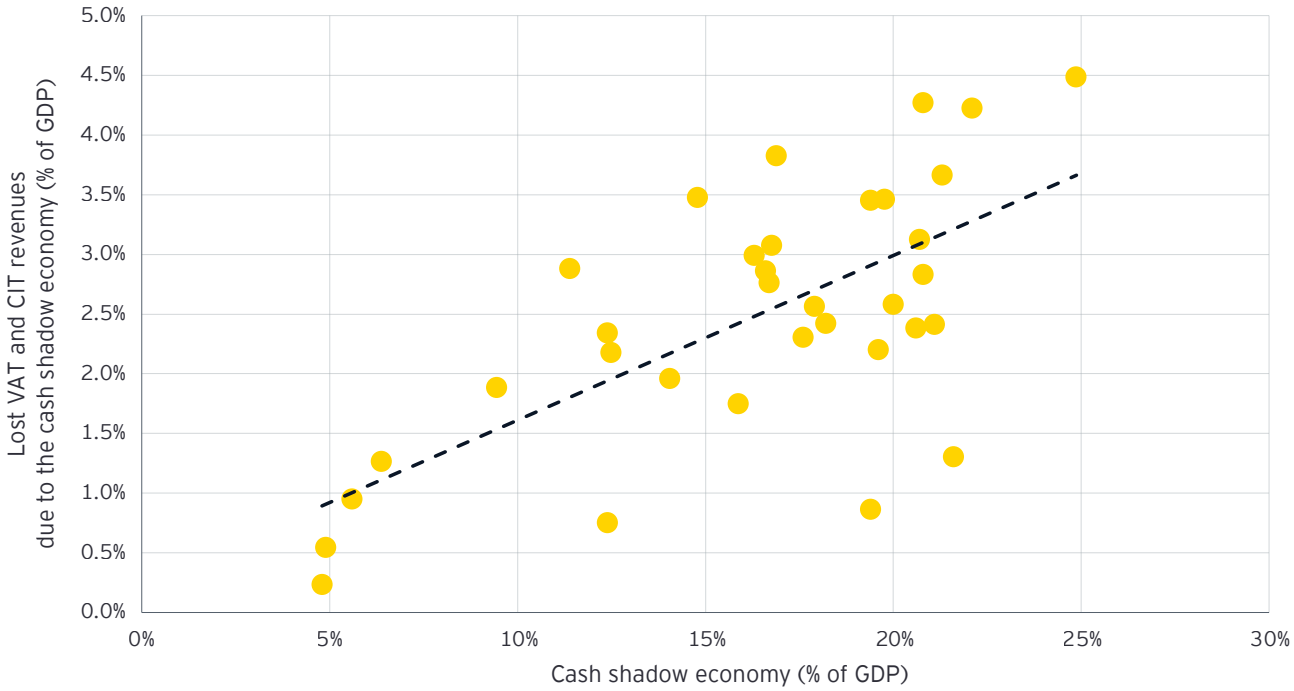
Chart 17.

Electronic payments and cash shadow economy

a) Potential benefits of replacing cash transactions with electronic payments



b) Cash shadow economy and related lost income from VAT and CIT



Notes: EY calculations based on separate surveys conducted in 34 countries (in the years 2014-2023)

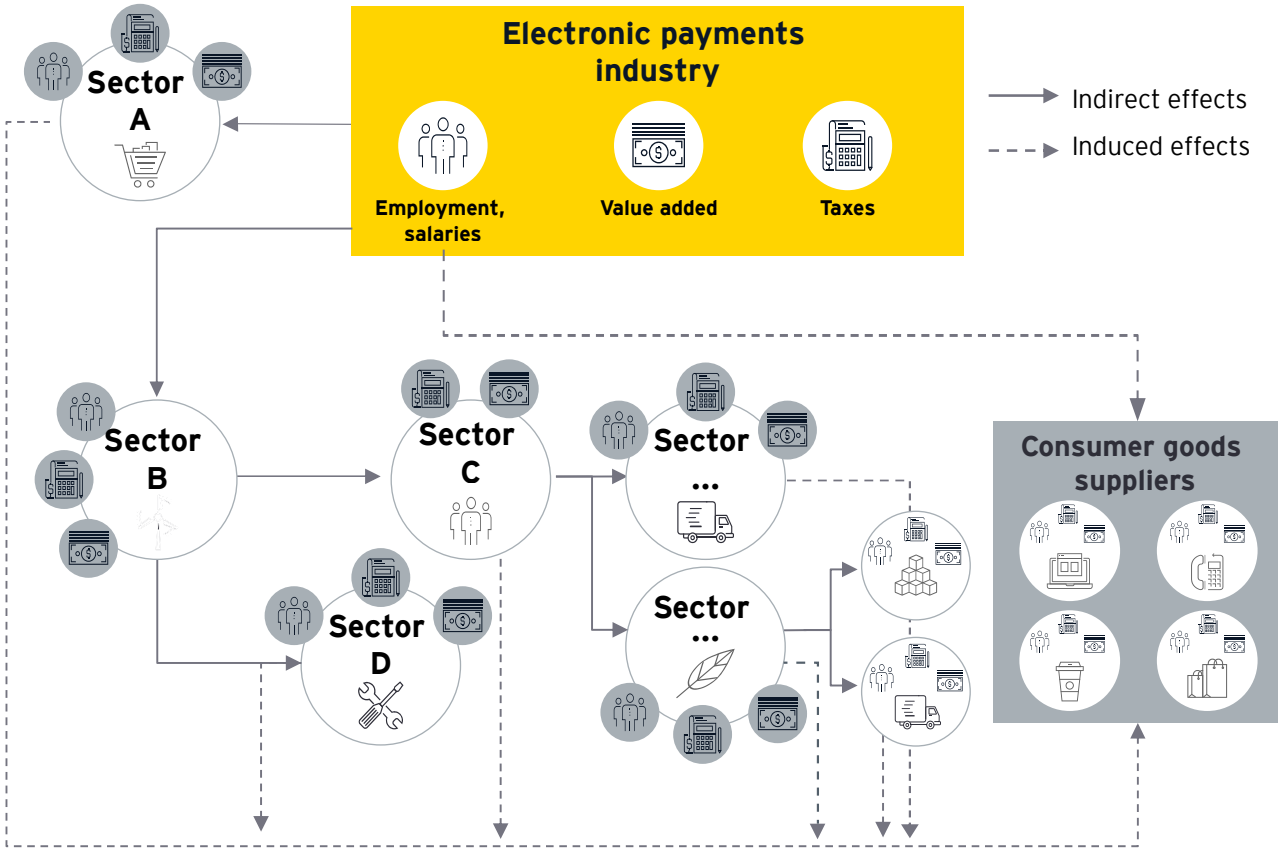
Source: EY.

Electronic payment industry operations

In addition to the transformative impact of **using** electronic payments discussed so far, on the economy and society, there are also effects related to the **operational activities** of the electronic payments industry, including not only the value of services produced, jobs generated, or taxes paid by the industry, but also the impact generated by industry suppliers and their employees. Nevertheless, the economic effects associated with this channel are generally smaller than those resulting from the use of electronic payments and are not estimated in this study.[30]

The electronic payments industry is impacting on the economy not only directly, but also through the so-called demand effects. The types of these effects are presented in Figure 9.

Figure 9.
Illustration of the effects of the operational activities of the electronic payments industry



Source: EY.

Direct effects

Result, among others, from the services produced, jobs created, and taxes paid by the electronic payment industry.

Indirect effects

Result from the demand of the industry offering electronic payments for goods and services of various companies in the industry's supply chain.

Induced effects

Generated by the consumer spending of employees whose employment results from the direct and indirect effects of the electronic payment industry.

30 While the overall economic impact of the e-payments industry may be relatively small compared to the economic impact of using e-payments, the e-payments industry and its main suppliers may play a greater role in the regions where the e-payments industry and its main suppliers are located.

Other social benefits

Electronic payments, alongside various economic effects, can also generate **additional social benefits, such as reducing inequalities and poverty, reducing the environmental footprint and reducing health risks** as shown in Figure 10.

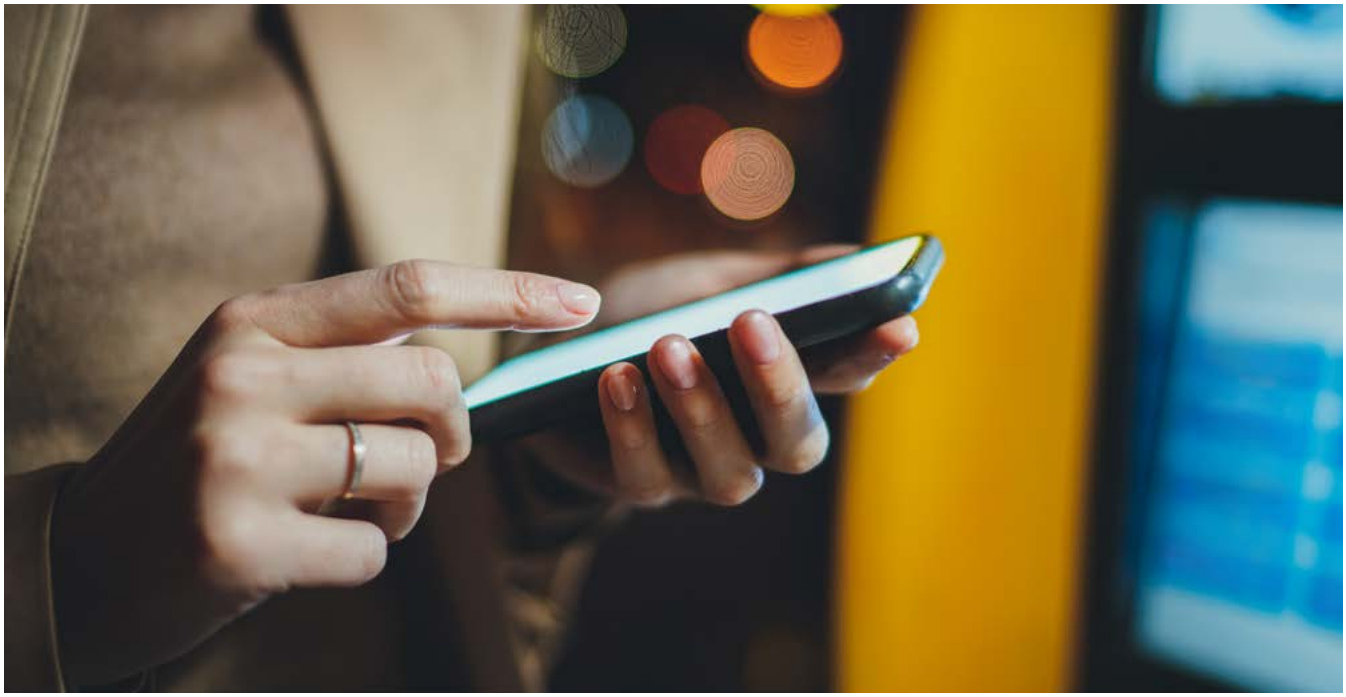
Figure 10.
Examples of the additional social benefits of digital payments

Reducing inequalities and poverty	Reducing the environmental footprint (e.g. carbon)	Reducing health risks (e.g. during the COVID-19 pandemic)
Electronic payments can reduce inequalities and poverty, among others, by **improving access to markets for people living in remote areas and lowering retail prices** (through online trade and the associated increase in competition), **creating new jobs and increasing the availability of financial services** for households.[1] Electronic payments **also increase the security of transactions**. All of these effects can be particularly relevant for marginalized groups.	**Existing research shows that digital payments can have a lower environmental impact than cash payments.** For example, research by Oxford Economics indicates that **cash payments at the point of sale have a 2.1 times greater impact on global warming potential (GWP) in Italy, 5.9 times in Germany and 23.6 times in Finland than digital payments**.[2] The environmental impact of electronic payments depends on the country's energy mix, so it can be reduced by using energy from renewable sources.	**Cashless transactions allow you to order essential items online during quarantine or lockdown.** Online shopping **also allows vulnerable people to spend more time at home without putting themselves at risk of infection**. In addition, **contactless payments can be used to increase the distance between the seller and buyer**, and thus reduce the risk of contagion.

1 See for example: Fan, J., Tang, L., Zhu, W., & Zou, B. (2018). The Alibaba Effect: Spatial Consumption Inequality and the Welfare Gains From E- commerce. Journal of International Economics, 114, 203-220. https://doi.org/10.1016/j.jinteco.2018.07.002 and The World Bank and Alibaba group Report (2019), E-commerce development: Experience from China and Ozili, P. K. (2018). Impact of Digital Finance on Financial Inclusion and Stability. Borsa Istanbul Review, 18(4), 329-340. https://doi.org/10.1016/j.bir.2017.12.003.

2 Oxford Economics (2024). The Environmental Impact of Digital Over Cash Payments in Europe. Commissioned by the European Digital Payments Industry Alliance (EDPIA.

Source: EY.



Challenges

It is worth noting that **electronic payments also generate certain challenges and risks**, such as:

- **Excessive debt.** Easy access to external financing from credit cards and other forms of electronic payments can lead to over-indebtedness of some households, which may also affect the impact of the stability of the financial system. The solution is an appropriate macroprudential policy and education and protection of consumers against certain practices.
- **Identity and data theft.** Ensuring the security of personal data is crucial, as identity theft or unauthorized access to payment details can have serious consequences. Therefore:
  - Countries are enacting laws that take into account the importance of personal data and provide protection for victims of crime in this area.
  - Banks and payment system providers are investing in cybersecurity and mechanisms to protect victims of fraud.
- **Monopolization of markets on the internet.** Although electronic payments support the development of e-commerce, which brings many benefits, it also generates certain risks. In many internet-related markets, only a small number of firms have become globally dominant, which can lead to negative effects such as higher prices (monopoly rent), limited supply and fewer incentives for innovation.
- **Extreme events.** Hypothetically eliminating cash altogether is risky, as there are cases when cashless payments are not available. In particular, after extreme events such as hurricanes, the use of from electronic payments may not be possible due to a temporary lack of electricity or internet.

3.3. Approach to quantitative effects

The econometric model **played a major role in our analysis**. It is a statistical tool that allowed us to estimate the impact of the share of electronic payments in household expenditure on GDP, while controlling for the impact of other factors affecting economic growth in different countries. These include, among others, the stock of physical capital, the business cycle, and government efficiency. Our dataset included information from OECD countries and the European Union. The model included a total of 36 countries, between 2000 and 2019.[31]

Our macroeconomic approach solves **the problem of aggregating the impact** (use) of electronic payments through various channels. Approach where all channels of influence are analyzed separately and then aggregated into a single outcome is not possible because some effects are difficult to quantify and other effects overlap so that they cannot be added together.

Another important problem when analyzing the impact of electronic payments on economic growth is the so-called **"chicken and egg" problem**. In this case, it concerns the fact that economic growth can also stimulate the development of electronic payments. Therefore, we used a special econometric estimator (Blundell-Bond generalized method of moments, GMM system), which helps to obtain a one-way result that can be considered in cause-and-effect categories. As part of the analysis of the robustness of the obtained results, we considered many econometric models and performed statistical verification to select the baseline model that has the best properties and gives the most reliable results.

Our study indicates that, on average, an increase in the share of electronic payments in the value of household consumption expenditure by 10 percentage points leads to an increase in GDP per capita by 1.2%, with other factors remaining unchanged. After substituting data (or scenarios) regarding BLIK payments and household consumption in Poland and making a few additional assumptions, we obtained the results indicated below. More details can be found in the technical annexes to this study.

31 The analysis has not been extended beyond these years for two reasons. First, the years 2020–2021 were extremely unusual due to the COVID-19 pandemic, which disrupted the relationship between various economic factors and resulted in less reliable statistical data. Second, taking into account a few additional years should not significantly affect the results of the estimates.

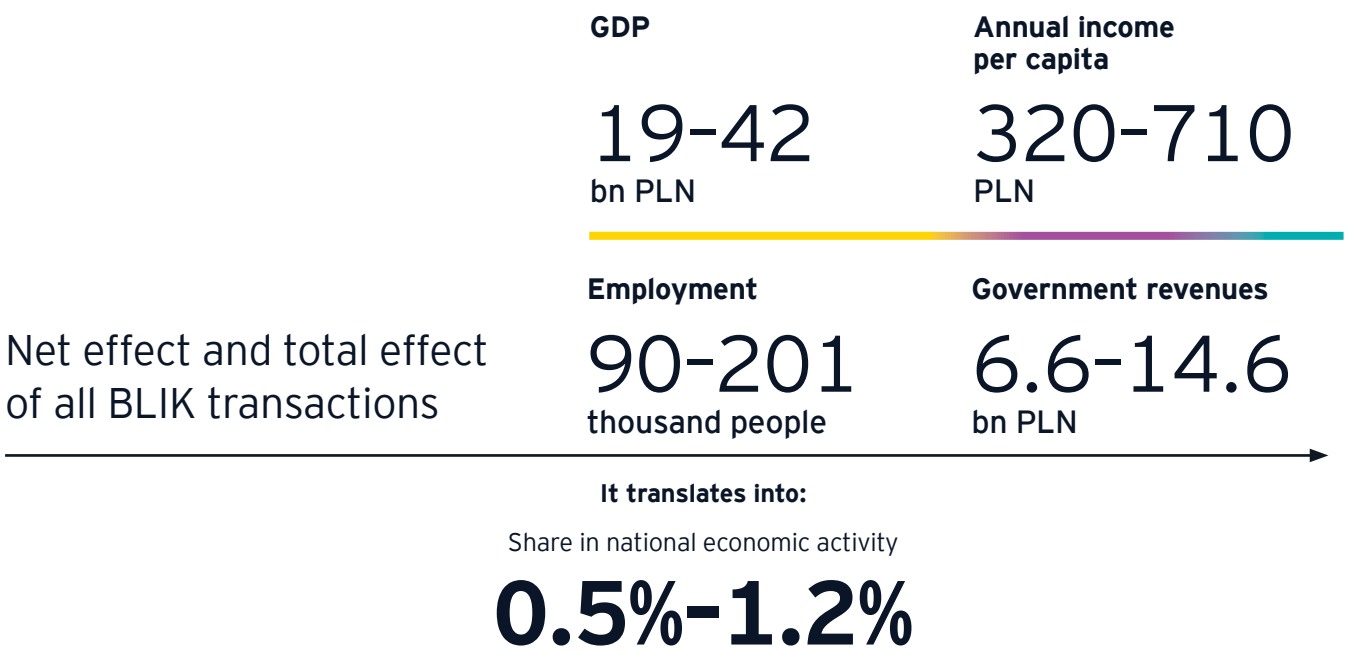
3.4. Estimated impact of BLIK payments on the economy

EY estimates indicate that **the use of BLIK payments supported the generation of about 1.2% of GDP** (PLN 42 billion) in Poland in 2024.[32] This production value translates to about PLN 700 of annual income per capita, PLN 15 billion in government revenues (taxes and contributions), and 200,000 jobs. The 1.2% of GDP is roughly equivalent to what Polish consumers spend on accommodation services and organized vacations or what the Polish government allocates to higher education. Using the earlier estimate for 2023, we assume that about 45% of these figures are net effects. For example, **if BLIK did not exist, the value of supported production in Poland would be lower by about 0.5% of GDP** (PLN 19 billion).

Additionally, the operator's strategy ambitiously aims for more than a twofold increase in the value of BLIK payments by 2027.[33] We estimate that if this is achieved and the Polish economy develops according to available forecasts, the indicated **percentage of supported economic activity would rise to 2.1% of GDP**. The value of the net effect, although smaller, remains unknown for this type of time perspective.

The analyzed effects can also be summarizedusing the so-called **multipliers**, i.e. the impact of a 1% change in the value of BLIK payments on the average growth of various measures of economic activity (see Figure 12).

Figure 11.
Economic effects supported by BLIK payments in 2024



Source: EY.

32 Our effects were estimated for GDP and then converted into effects for employment, individual income and tax revenues, using average ratios between GDP and these variables in the analyzed country. In this approach, the shares of these effects in total for different measures of economic activity are the same.

33 Compared to 2024. These are increases of about 115% in e-commerce, 130% in POS and, although the nature of these operations is slightly different, by 225% in P2P.

Figure 12.
Multipliers of the impact of BLIK on the Polish economy compared to 2024

Increase in the value of BLIK payments by 1%

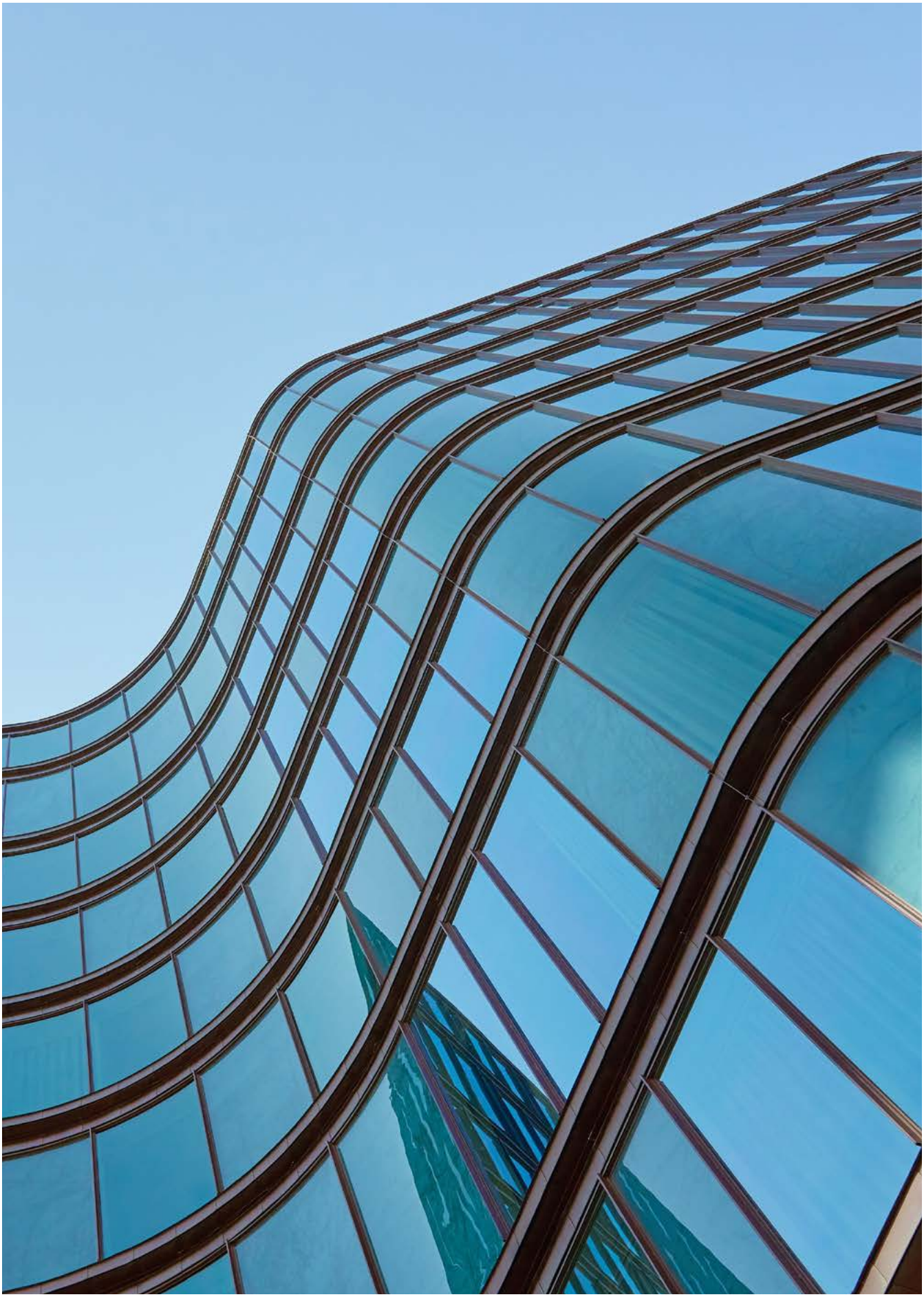
Growth of supported economic activity in Poland:

GDP	Annual income per capita
0.4 bn PLN	7.1 PLN
Employment	**Government revenues**
2.0 thousands	0.1 bn PLN

Source: EY.

It should be emphasized that the numbers presented above illustrate the total, **multichannel impact of BLIK payments**. Due to the correlation between the popularity of various forms of electronic payments, e-commerce, internet development and related activities in the economy, it is difficult to distinguish their individual contributions.

Econometric analysis based on observational data, as in this study, is in our opinion the best available research method. However, it is subject to uncertainty, especially regarding causality. Therefore, the presented estimates should be interpreted cautiously, as the illustrate the possible scale of the analyzed and potentially dependent on additional factors.



4

Effects of e-commerce on the economy and the role of BLIK

In the third chapter, we analyzed the total, multichannel impact of BLIK as a cashless payment method on the economy. In this section, we focus on its impact by increasing the importance of the e-commerce sector, where BLIK plays a key role, i.e. the subcategories of the previously analyzed effects. The chapter begins with a brief reminder of the role BLIK plays in the development of e-commerce, discussed in more detail in chapter one. Next, we present various mechanisms through which e-commerce impacts the economy. We continue to focus on estimating how e-commerce contributes to reducing the operating costs of trading companies and what portion of these effects BLIK may support. Finally, we examine the effects of such changes in the context of the economy as a whole.

4.1. Importance of BLIK in the Polish e-commerce

Although e-commerce has been present on the market for many years, the low level of trust among some consumers in online shopping remains a significant problem, limiting their engagement in online transactions. This includes a lack of certainty about the quality of products, a lack of willingness of customers to use such services, and concerns about the security of transactions.[34] Research indicates that an important factor accelerating the adoption of e-commerce, especially in developing countries, is the availability of tools that increase consumer trust and facilitate transactions.[35]

In the context of Poland, BLIK can be considered an example of an innovative solution that meets this type of conditions. As much as 50% of the value of transactions in Polish e-commerce is carried out using BLIK (see Chart 11). Ease of use, speed and wide availability of this payment method significantly increase the convenience of consumers, and at the same time build a sense of security when making online transactions. As a result, consumers who were previously afraid of online payments are more likely to shop online, which contributes to the growth of the e-commerce market in Poland.

34 Chawla, N., & Kumar, B. (2021). E-Commerce and Consumer Protection in India: The Emerging Trend. Journal of Business Ethics, 180(2), 581-604. https://doi.org/10.1007/s10551-021-04884-3.

35 Hendricks, S., & Mwapwele, S. D. (2023). A Systematic Literature Review on the Factors Influencing E-commerce Adoption in Developing Countries. Data and Information Management, 8(1), 100045. https://doi.org/10.1016/j.dim.2023.100045.

4.2. E-commerce impact channels

E-commerce shapes the economy through various mechanisms, supporting its transformation and development. The benefits of this sector include, among other, increasing market reach, stimulating innovation, improving productivity and reducing operating costs. In this chapter, we will discuss the different channels of e-commerce impact on the economy, highlighting the most important aspects of this impact.

Fostering innovation

E-commerce drives innovation in both technology and business processes. Companies operating in this sector often invest in new solutions, such as advanced data management systems, personalized offerings or customer service automation. At the same time, the competitive pressures typical of e-commerce force businesses to continuously improve their products and services.[36] As a result, e-commerce acts as a catalyst for technological advancement, which benefits not only companies but also consumers, who gain a better shopping experience and a wider selection of products.[37] However, quantifying these benefits is challenging due to their complexity and diversity.

Market reach

E-commerce significantly increases the availability of goods and services both at the national and international level – market reach is one of its most important channels of influence on the economy. On a national scale e-commerce allows consumers to access a wider range of products and services that were previously only available in large agglomerations. Meanwhile, at the international level, e-commerce opens opportunities for local entrepreneurs to trade on a global scale.[38]

A European Commission study[39] indicates that reducing barriers to international trade in goods, resulting from the development of e-commerce in the EU, contributed to the growth of Polish GDP by 0.24%. However, due to the focus on international trade, the approach applied is rather not adequate to the specificity of e-commerce in Poland.[40]

Productivity and reduction of operating costs

E-commerce transforms the sales model, eliminating many of the costs associated with physical infrastructure and introducing modern technological solutions. Automating key processes such as warehouse management, order fulfillment, and customer service allows companies to make better use of resources.[41] At the same time, removing costs related to renting retail space or changing the role of the staff, who instead of working in a brick-and-mortar store focus on more productive online sales or other tasks, lead to significant savings. Studies show that e-commerce companies achieve higher efficiency and productivity.[42]

In the next part of the chapter, we present an analysis that will allow you to understand how BLIK, by supporting e-commerce, affects the operating costs of enterprises and what are the economic effects of these changes in the perspective of the entire economy. We focus on this aspect because of the data availability and an approach that allows us to approximate this impact. Other areas of BLIK's impact related to e-commerce, which may also generate positive effects, remain outside the scope of our quantitative analysis.

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36 Lekmat, L. (2018). Antecedents of E-commerce Adoption in Thai SMEs. *UTCC International Journal of Business and Economics*, 10(2).Mohtaramzadeh, M., Ramayah, T., & Jun-Hwa, C. (2017). B2B E-commerce Adoption in Iranian Manufacturing Companies: Analyzing the Moderating Role of Organizational Culture. *International Journal of Human-Computer Interaction*, 34(7), 621-639. https://doi.org/10.1080/10447318.2017.1385212.

37 Lekmat, L. (2018). Antecedents of E-commerce Adoption in Thai SMEs. *UTCC International Journal of Business and Economics* , *10*(2).

38 Kordić, N. (2014). The Extent of E-commerce Presence in Developing Countries. In *Sinteza 2014 - Impact of the Internet on Business Activities in Serbia and Worldwide*. https://doi.org/10.15308/sinteza-2014-313-317.

39 Cardona, M., Duch-Brown, N., Francois, J., Martens, B., Yang, F. (2015). *The Macro-Economic Impact of E-commerce in the EU Digital Single Market* (JRC Working Papers on Digital Economy No. 2015/09). European Commission.

40 The study assumes that foreign trade in EU countries reacts in a similar way to the spread of e-commerce. However, in Poland, the share of foreign trade in e-commerce is extremely low – most transactions take place as part of domestic purchases. This suggests that the estimate obtained for Polish regarding the impact of e-commerce on GDP growth may be imprecise.

41 Mohtaramzadeh, M., Ramayah, T., & Jun-Hwa, C. (2017). B2B E-commerce Adoption in Iranian Manufacturing Companies: Analyzing the Moderating Role of Organizational Culture. *International Journal of Human-Computer Interaction*, *34*(7), 621-639. https://doi.org/10.1080/10447318.2017.1385212

42 Lekmat, L. (2018). Antecedents of E-commerce Adoption in Thai SMEs. *UTCC International Journal of Business and Economics* , *10*(2). Mohtaramzadeh, M., Ramayah, T., & Jun-Hwa, C. (2017). B2B E-commerce Adoption in Iranian Manufacturing Companies: Analyzing the Moderating Role of Organizational Culture. *International Journal of Human-Computer Interaction*, *34*(7), 621-639. https://doi.org/10.1080/10447318.2017.1385212.

4.3. Cost changes in the trade sector

We analyze BLIK's potential role in reducing costs in the trade sector in two steps. First, we estimate how moving commercial activity to the Internet reduces the costs of companies in the retail sector. Next, we analyze the importance of the BLIK payment system in this process.

E-commerce and cost reduction

Moving sales online leads to the reduction of many costs, such as expenses related to the rental of retail space or customer service in traditional stores, which ultimately contributes to increased profitability of companies. We estimate the scale of cost reduction using available data aggregates for retail companies. The cost structure presented in the study "Cost behavior in e-commerce firms,[43] developed on the basis of the AMADEUS dataset[44] indicates that the average operating cost of companies providing e-commerce services is lower by 17.1% compared to traditional forms of sales.[45] In our analysis, we treat this difference as a source of productivity gains resulting from the transformation of the business model to a more cost-effective one.[46]

BLIK and e-commerce development

Modern payment services, such as BLIK, play an important role in the process of transforming retail operations described above. To determine BLIK's impact on cost reduction, we scaled the difference in operating expenses, taking into account the share of e-commerce in total retail sales (according to GUS data – 8.9%)[47] and the share of sales made via BLIK on the Polish e-commerce market, which is approx. 50% (see Chart 11). On this basis, we estimate that e-commerce in Poland could have reduced operating costs in the retail sector by about 1.5% by 2023, which means savings of about PLN 2.8 billion. Due to its significant share in e-commerce, BLIK payments could support cost reduction by about 0.74%. Based on the estimates from chapter 2, we assume that about 45% of this is net effects that would not have occurred if BLIK did not exist.

The above figures are a contribution to the general equilibrium model, which was used to assess the broader economic effects related to the reduction of corporate costs by e-commerce, including the one supported by BLIK.

43 Argilés-Bosch, J. M., Garcia-Blandón, J., & Ravenda, D. (2022). Cost Behavior in E-commerce Firms. Electronic Commerce Research, 23(4), 2101-2134. https://doi.org/10.1007/s10660-021-09528-2.

44 AMADEUS is an international data platform created by Bureau van Dijk (now part of Moody's) that contains detailed information on more than 22 million companies in 43 European countries. The dataset includes financial data, ownership structures and sector classifications, which allows comparisons to be made between companies.

45 The calculation also takes into account the average size of the companies for both sales models.

46 It should be noted that the cost comparison may be subject to error, because a simple summary of average costs does not take into account other factors, such as location or the type of products offered, which may affect the results of the analysis.

47 According to GUS data for 2024, the average share of e-commerce in total retail sales was 8.9%.

4.4. Additional economic effects

In the analysis of the impact of cost reductions in the retail sector, the estimates presented above serve as a starting point for a more comprehensive assessment of the economic impacts. The reduction in operating costs itself is only a first-order effect that does not capture the full picture of the impact on other aspects of the economy. To assess the long-term effects, we used the macroeconomic general equilibrium model. It should be recalled that our analysis covers only one channel of e-commerce impact, i.e. cost reduction, and not its overall effect.

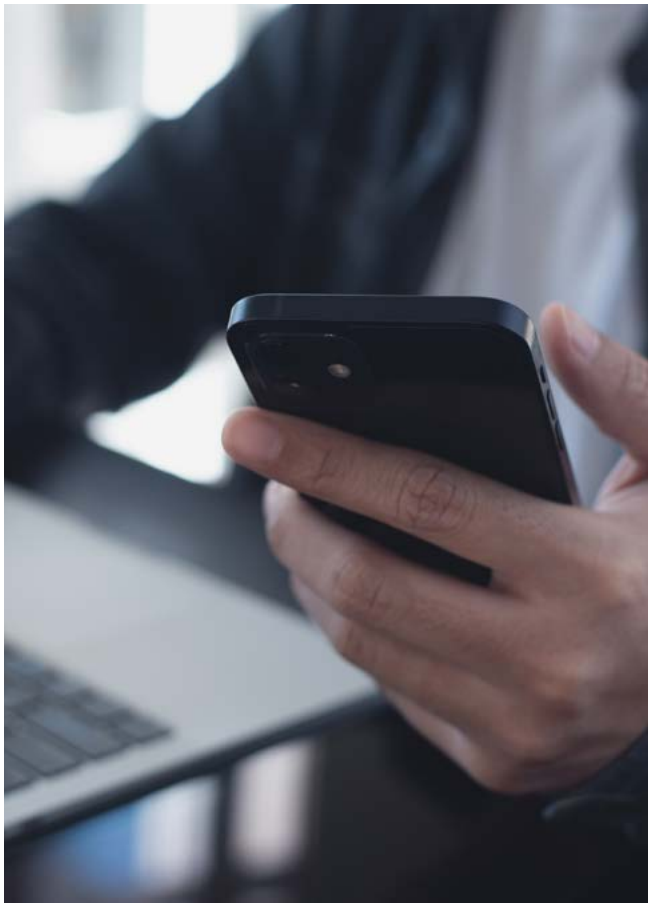
The cost reduction described above was used as an impulse in the EY-UPGRADE model, which describes interactions between entities in the economy, considering the impact of cost changes on prices, consumption, trade, production and investment across various sectors. This enables us to determine the fuller economic impact of innovation. The introduction of operational cost reductions into the model is carried out by appropriately adjusting the productivity of the trade sector.[48] Below are the results for key economic indicators. It should be emphasized that they are the result of medium- and long-term changes that are revealed after appropriate adjustments in the economy.[49] More details on our approach can be found in the technical annexes to this study.

Sectoral changes

Chart 18 illustrates the changes in prices and real output by sector. Cost reduction in the retail sector leads to a decrease in the prices of sales services, which has a positive effect on both on consumers, who gain access to cheaper products, as well as on producers of other goods and services, who can reduce the costs associated with distribution. Products from sectors that rely heavily on commercial services, such as food processing or light industry, are also getting cheaper.

Despite the cost reduction, not all prices are falling. This is because productivity growth causes the so-called income effect – thanks to lower prices in trade, consumers can spend more money on buying various goods, which in turn puts pressure on their prices. This is particularly evident in sectors not directly related to trade, such as raw material extraction or other services,[50] where prices grow.

In addition, the increase in the productivity of the retail sector causes an increase in the rate of return on capital in Poland, which attracts investments. This phenomenon affects sectoral demand. An example is the response of the construction and public services, which account for a large share of capital expenditure. The increase in the level of investments causes the demand for the sector's products to increase and we are observing an increase in production with a simultaneous increase in prices.



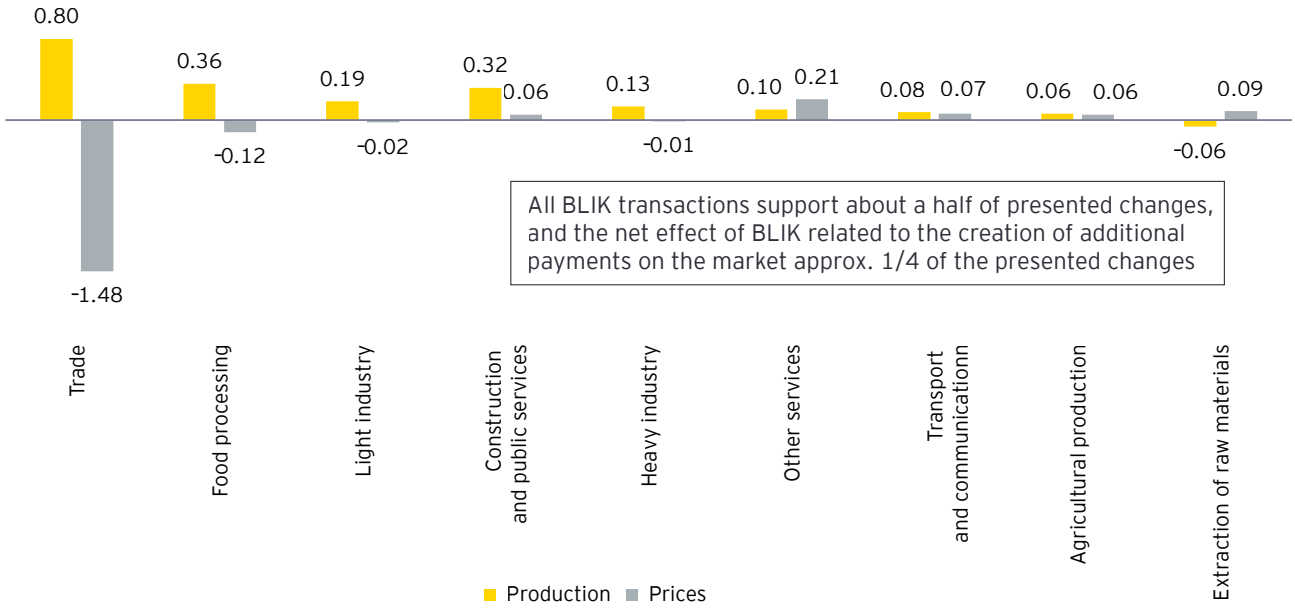
48 In the model, the cost of the trade sector is an endogenous variable (i.e. a variable whose value is determined by the model), which means that it cannot be manipulated directly. Cost reduction is achieved through an increase in the productivity of the sector, which leads to a set decrease in costs.

49 Since the analyzed changes are limited in scale, it can be expected that the adjustments will be implemented relatively quickly, i.e. over a period of several years.

50 The aggregate ‚other services' mainly includes financial services, public administration and defense, education, and human health and social work.

Chart 18.

Percentage change in production and prices across sectors in Poland in response to the reduction of the costs in the trade sector through e-commerce and the role of BLIK



Source: EY.

Macroeconomic changes

In aggregate terms, Polish GDP grows by approx. 0.36%, of which BLIK transactions may support about 0.18% of GDP (see Chart 19).

The output of the trade sector accounts for about 1/4 of the total effect.[51] The remaining part is due to increased activity in other sectors of the economy, as indicated above.

An increase in productivity in the trade sector leads to an increase in the rate of return on capital in Poland, which in turn increases investment demand and the level of capital in the economy. In aggregate terms, investments grow by around 0.56% and payments with the use of BLIK can support about half of the growth. Capital inflows stimulate production in sectors such as construction, as we described in the sector results.

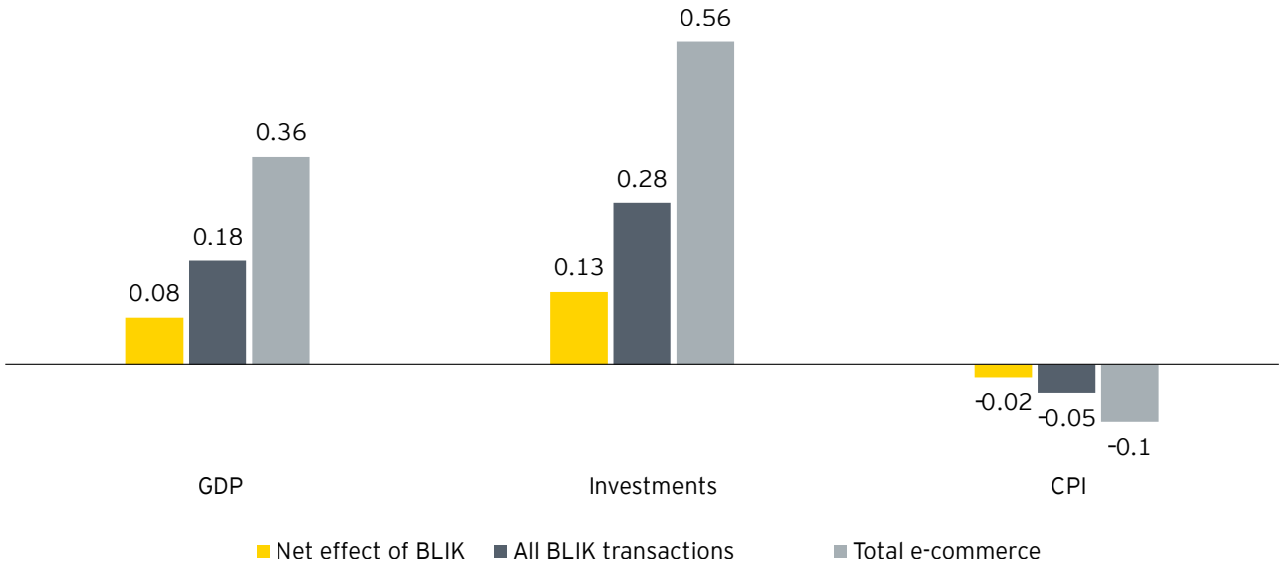
The model also points to a decline in the consumer price index (CPI) by approx. 0.10%. BLIK itself supports a decrease in the index by approx. 0.05%. The decline in CPI is primarily a consequence of the reduction in prices in the trade sector. To illustrate the scale of the impact, it can be said that if all this change had materialized over the past year, inflation would have been 0.1 percentage point lower.

Also, in the case of the above-mentioned macro changes supported by BLIK, about 45% are net effects that would not be supported in the absence of this system in Poland.

The presented analysis indicates that even a single channel of BLIK's influence, such as facilitating cost reduction for companies engaging in e-commerce, can significantly impact the functioning of the economy.

Chart 19.

Percentage change in basic macroeconomic indicators in Poland in response to the reduction of the costs of the retail sector by e-commerce, including the part supported by BLIK



Source: EY.

51 The sector's contribution was calculated as the change in output weighted by the share of the sector's value added in the gross value added (GVA).

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