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**Trends in the Development of the Payment Services Market:**  
**A case of Slovakia**

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**Abstract**

*The current payment services markets face significant challenges reflecting changes in the global business environment. These changes also induced important modifications of the relevant legislation regulating the functioning of the payment services markets. One of its goals, besides strengthening the security of payment services, is to make especially electronic payments available to everyone. These efforts are accompanied by the application of innovative payment technologies as well as the expansion of the activities of non-bank payment service providers. The purpose of this paper is to identify the most prevalent trends in the recent development of the payment services market. In particular, we look at the aspects of digitization and structural aspects of the payments and payment services market. The qualitative analysis of these trends is supplemented by available data for the period 2017-2021 demonstrated by the example of Slovakia, which has been a member of the Eurozone since 2009. Thus, the overall look at the European payment services market with the implications for its future development is provided as well.*

**Keywords:** payment services market, digitisation, electronic payments, Slovakia.

**JEL Classification:** D53, E42, G21.

**1. Introduction**

Significant changes in the global business environment including aspects of innovation and digitisation induced also modifications in the functioning of the payment services market and its regulation. One of the aims of financial policies is to attract more economic subjects and populations to use cashless payment methods. As indicated by Rustamov (2016), new participants in the payment services market,

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such as electronic money institutions or payment institutions, can bring new views and innovative services to develop cashless settlements.

This paper is focused on the analysis of these trends, especially structural changes in terms of the composition of payments and payment service providers, as well as digitisation aspects of the payment services market in the Slovak Republic. To the best knowledge of the authors, there is no study that would provide a complex overview of the development of relevant trends in the payment services market underpinned by relevant data, under the conditions of the Slovak Republic. Since this country has been a member of the Eurozone since 2009, we consider it as a good example of a country with implemented European regulations related to the payment services market. Besides a review of literature related to the outlined topic, we also provide a brief overview of the relevant legislation in this regard, as well as an overview of the development trends of the payment services market based on available data.

## **2. Problem Statement**

When focusing on the current literature analysing the development trends in payment markets, we identified several studies that deal with specific issues in this regard. When looking at traditional payment tools such as payment cards, direct debits, and credit transfers, Zhang et al. (2019) identified that when initiated electronically, there are complementary effects across these electronic payment methods. However, there are substitution effects between electronic and paper-based payment methods. At the same time, a higher penetration ratio of electronic payment methods in 27 European Union member countries, is generally associated with higher GDP, consumption as well as tax revenue. A more detailed look at card payments conducted by Fusaro (2013) in the case of the United States showed that debit cards are the faster-growing consumer payment method when compared to more popular credit cards, especially at the turn of the millennium. At the same time, he concluded that debit cards can be used as a way to limit spending. Similarly, a recent study by Feruś (2022) conducted under the conditions of Poland showed that the number of payment cards, especially the number of credit cards, is decreasing, but this trend is accompanied by an increase in the average debt on particular cards.

However, traditional payment instruments operated by banks have faced increasing competition from non-financial institutions in recent years, especially in the field of providing payment services through new financial technologies (FinTech). As indicated by Románova and Kudinska (2016), traditional banks can view the boom in FinTech as a threat; however, it can also be turned into an opportunity, because it can provide better functionality, more flexibility, and aggregation of provided services. From a structural perspective, Elsaid (2021), based on an extensive literature review, suggested that while FinTech companies could take some market share away from banks, they are not expected to replace banks. He instead proposes to build strategic partnerships and cooperation between banks and FinTech companies in a mutually beneficial way.

Thus, the rise of FinTech brought not only growing competition in the payment services market, but also the rise of innovative payment solutions, which implementation is not always without challenges. Khan et al. (2017) evaluated the status and growth of online payment services and pointed out that there is a change in the behaviour of consumers showing a shift from the traditional to an advanced online mode of payment with nearly all available mobile devices. However, better integration of online payment systems with the current telecommunication and financial infrastructure is necessary for the favourable future of this payment regime.

A study by Kang (2018) analysed the mobile payment market by comparing traditional payment services with recent mobile FinTech payments, including their security challenges. The study has a qualitative nature, and the author calls for further development of especially simple and convenient mobile FinTech services. Another study focused on digital payments was conducted by Sahi et al. (2022). It systematically reviewed digital payment literature, covering papers published over 22 years. The countries that contributed the most to this body of literature are China, India, and the United States. The authors also highlighted the fact that the primary research interest lies in the technological aspects of digital payments, without considering the cultural aspects of its users.

Despite the existence of the literature focusing on specific aspects of payment services market development, there is a lack of studies that would provide a more complex look at this market from users' point of view, underpinned by relevant data.

### **3. Aim of the Research**

It is in our interest to take a closer look at the single-country payment market and its more broadly defined trends, supported by relevant legislation and data. Hence, the present paper aims to identify the most prevalent trends in the recent development of the payment services market in the Slovak Republic. This country has been a member of the Eurozone since 2009, and therefore the legislation and measures of the European Central Bank apply to its payment services market. It can be thus considered as a good example of a country indicating also trends within the whole European payment market.

### **4. Research Methods**

For the purpose of the analysis conducted in this paper, we first come out of the relevant legislation that formed the payment services market in recent years. Then, we consider structural aspects of the payment services market in Slovakia, namely the structure of payments distinguishing credit transfers, direct debits, and card payments, in terms of the number of transactions as well as their value. Regarding card payments, we take a detailed look at the comparison of the use of debit cards as well as credit cards. The above analyses are based on the data available in the European Central Bank Payments Statistics database (ECB, 2022), which contains data covering the 2017-2021 period. We consider also structural aspects of the payment services market in Slovakia, in terms of the number of current payment

services providers including banks and non-bank providers, distinguishing also domestic and foreign subjects. For this purpose, we use a Financial Entities Register maintained by the National Bank of Slovakia (NBS, 2023).

Subsequently, it is in our interest to analyse the digitisation aspects of the payment services market. Based on the data from the European Central Bank Payments Statistics database (ECB, 2022), we compare credit transfers and card payments initiated traditionally and electronically. To gain a more complex picture of the level of digitisation of payment services, we are looking for the coverage of these aspects within existing complex indicators of digitisation, such as the Digital Economy and Society Index, Network Readiness Index, and Digital Payments Index.

## **5. Findings**

The results of our analyses are presented in the structure indicated above. We first provide an overview of the structural aspects of payment services, containing the structure of payments and the structure of subjects providing payment services in Slovakia. Then we look at the digitisation aspects of the payment services market.

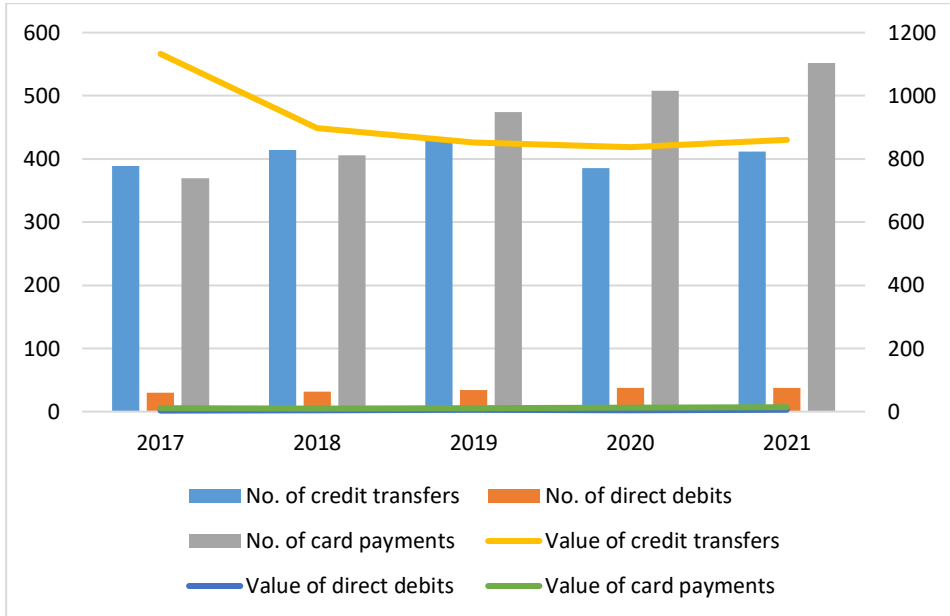
### ***5.1 Structural Aspects of Payment Services***

Within the European payment market, one of the most significant changes was the full implementation of the Single Euro Payments Area (SEPA) as of October, 2016, which allowed people and businesses to make cashless euro payments within one SEPA country or between different SEPA countries under the same conditions regardless of the SEPA country in which the payment account is held. The SEPA region, in which cashless euro payments are harmonised, consists of all European Union countries and several non-EU countries such as Iceland, Norway, or Switzerland. The legislative framework for SEPA was established by Regulation (EU) 260/2012, which regulates technical and commercial requirements for credit transfers and direct debits in euro and which amends Regulation (EC) 924/2009.

Figure 1 shows the development of the number of sent SEPA payments in the Slovak Republic (in millions) in the structure of credit transfers, direct debits, and card payments in the reported period of 2017-2021. The secondary axis shows the total values of these transactions (in € billions).

It is obvious that while at the beginning of the reported period, the credit transfers prevailed both in terms of number and value, their popularity was challenged by more frequent use of card payments, at the end of the reported period. However, the overall value of card payments remains relatively stable and low during the monitored period. The same can be concluded regarding direct debits, which are the least frequently used SEPA payments. Since there is a big difference in the overall value of payments in terms of their types, we look at their average value per payment. The highest average amount, namely € 2,263 was sent by credit transfer, followed by direct debit payment in the average amount of € 136 and card payment slightly exceeding € 25. However, the average sum paid by card slightly decreased in the monitored period, from € 30 at the beginning to € 25 at its end.

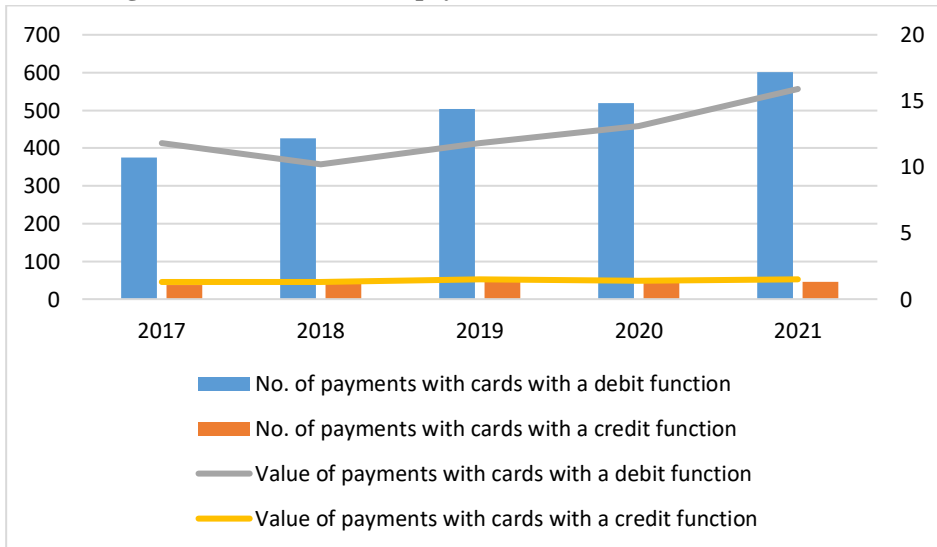
**Figure 1. Structure of SEPA payments in terms of number and value**



Source: Own processing based on data from ECB Payments Statistics (ECB, 2022).

Further, we looked at the structure of payments made by cards. Figure 2 shows the development of the number of card payments (in millions) in terms of their debit or credit function in the reported period of 2017-2021. The secondary axis shows the total values of these transactions (in € billions).

**Figure 2. Structure of card payments in terms of their function**



Source: Own processing based on data from ECB Payments Statistics (ECB, 2022).

It is obvious that while the number, as well as the value paid by debit cards, increased in the monitored period, the number and value of transactions conducted by credit cards are stable and relatively low. So, it seems that Slovak payers are cautious and rather reluctant to use cards with a credit function. However, the average amount paid in one transaction by credit card is slightly higher, namely € 32 compared to € 26 paid on average by debit card.

Further innovations concerning SEPA credit transfers were defined by the European Payments Council as the SEPA Instant Credit Transfer scheme, which became effective in November 2017. These payments are processed in real time, 24 hours a day, every day of the year, with money in the recipient's account within ten seconds, and are available to all types of payers, from consumers to large companies. The amount of each transaction is limited to € 100,000. In accordance with the National plan for the implementation of instant payments in the Slovak Republic (NBS, 2019), the starting date of instant payments in Slovakia was scheduled for February 1, 2022. Participation in the instant payment scheme is optional for the payment service providers. However, more institutions can be expected to join the scheme in the future, which will speed up e-Commerce processes and make them more efficient. At the same time, instant payments are believed to accelerate the payment of taxes, social insurance, and other administrative fees (NBS, 2019).

Another significant change that affected the functioning of the European payment services market was the implementation of the Directive (EU) 2015/2366 of the European Parliament and of the Council of November 25, 2015 on payment services in the internal market, known as PSD2, which content was implemented into the legal order of the Slovak Republic effective from January, 2018. This regulation brought an increase in the security of online payments by introducing the obligation to apply strong authentication of the payer and payment authorisation. It also led to the expansion of the range of payment services by new types, due to the constantly increasing level of digitisation. It has created space for new entities in the payment services market that can provide services through interfaces and applications. Banks have also caught up to new trends, developing their own FinTech solutions.

Currently, payment services in the Slovak Republic and the European Economic Area can be provided by authorised providers, which are not only banks but also payment institutions. The same applies also to the issuance of electronic money, which is reserved not only for banks but also for institutions of electronic money. Information from a payment account can be in consolidated form accessed by an account information service provider and a bank. Such entities can perform activities in the Slovak Republic based on their authorisation or registration issued by the National Bank of Slovakia (NBS). At the same time, there are also entities that can freely provide these services cross-border, based on authorisation from a domestic supervisory authority without having to apply for another authorisation in the host Member States. The current structure of the Slovak market of payment services in terms of their providers is reported in the following Table 1.

The numbers show that the most frequent provision of banking services in Slovakia is done on a free cross-border basis. Most of the banks located in Slovakia

perform activities as branches of foreign banks. The reason may be the fact that Slovakia is a very small country with a limited market for the establishment of other banking institutions. Rather, there is a tendency to carry out acquisitions, as a result of which there is a change in the ownership structures within the longer-term incorporated banks in the Slovak Republic.

**Table 1. Structure of providers of payment services in Slovakia**

<b>Type of institution</b>	<b>Number</b>
Banks based in Slovakia	11
Branches of foreign banks	14
Free provision of services on the cross-border basis of foreign banks and other credit institutions in Slovakia	395
<b>Payment institutions located in Slovakia</b>	
Payment institutions located in Slovakia	9
Branches of foreign payment institutions in Slovakia	2
Foreign payment institutions providing services in Slovakia via payment services agents	6
Free provision of services on the cross-border basis of foreign payment institutions in Slovakia	262
<b>Account information service providers established in Slovakia</b>	
Account information service provider established in Slovakia	1
Free provision of services on cross border basis of foreign account information service providers in Slovakia	22
<b>E-money institutions based in Slovakia</b>	
E-money institutions based in Slovakia	1
Free provision of services on the cross-border basis of foreign e-money institutions in Slovakia	208

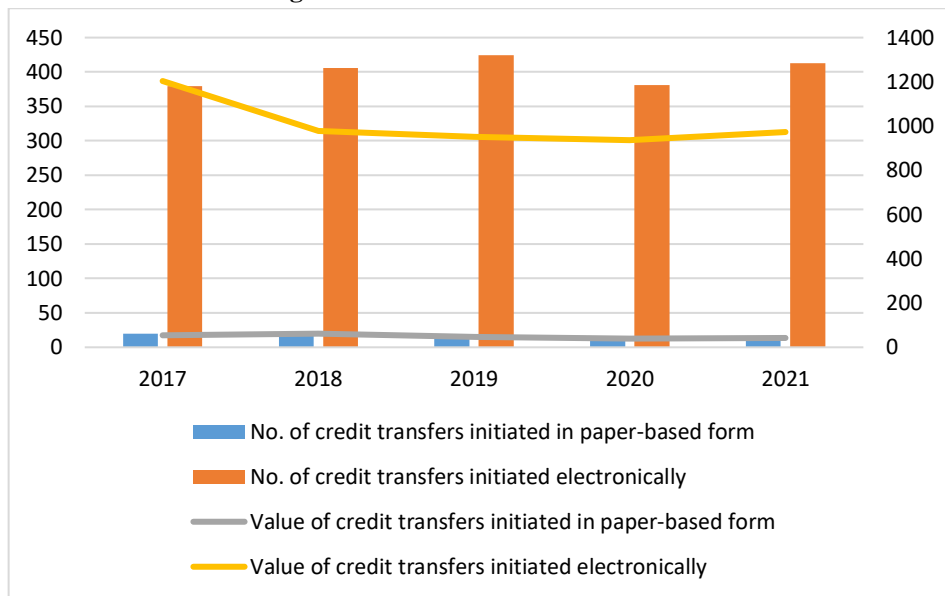
*Source:* Own processing based on data from Financial Entities Register (NBS, 2023).

Among non-bank payment service providers, the most numerous group is formed by payment institutions providing their services in Slovakia freely on a cross-border basis followed by foreign e-money institutions performing activities on the same free cross-border basis. There are only a few payment service providers incorporated in Slovakia, which reflects the size of the internal market and/ or the limited attractiveness of the provision of these types of payment services for Slovak entrepreneurs.

## ***5.2 Digitisation Aspects of Payment Services***

The previous analysis showed that the most important forms of payments are performed via credit transfers and card payments. Hence, we looked in more detail at the aspects of digitisation within these types of payments. The following two figures capture the development of the number (in millions) and the value (in € billions) of credit transfers initiated in paper-based form and electronically, as well as card payments initiated at physical EFTPOS (Electronic Funds Transfer at Point Of Sale) and remotely in the Slovak Republic in the reported period of 2017-2021.

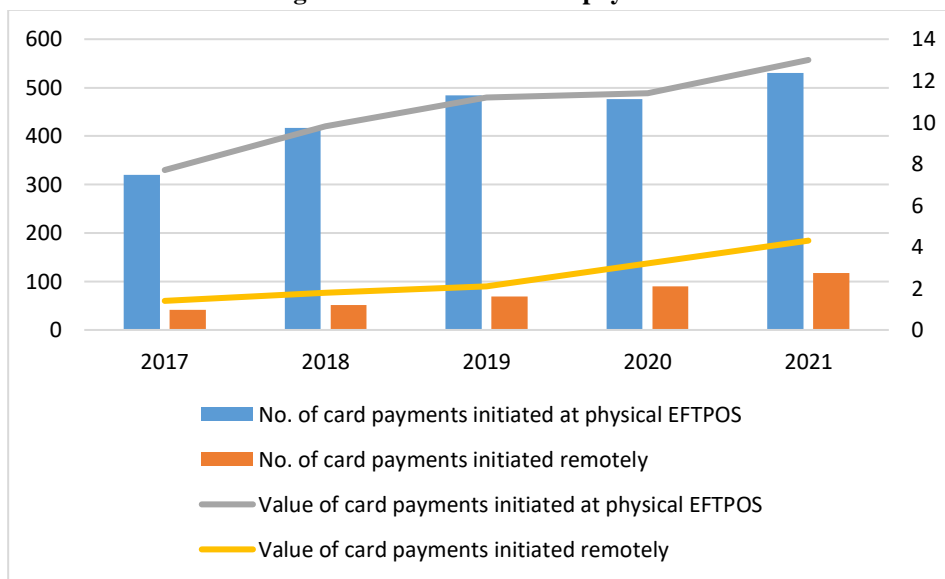
**Figure 3. Structure of credit transfers**



Source: Own processing based on data from ECB Payments Statistics (ECB, 2022).

The number and value of credit transfers initiated electronically are much higher compared to the paper-based form, the use of which is gradually decreasing. The slight decrease in the number and value of electronic credit transfers can be attributed to the rise of use of card payments, which is shown in the Figure 4.

**Figure 4. Structure of card payments**



Source: Own processing based on data from ECB Payments Statistics (ECB, 2022).



The increasing popularity of card payments is obvious, both initiated at physical EFTPOS as well as remotely. However, while the average value of payment paid at physical EFTPOS reached in the reported period almost € 24, the average amount paid remotely is higher by € 10. Hence, it is reasonable to assume that, especially higher amounts, are more frequently paid remotely.

It is in our interest to look in more detail at the overall level of digitisation of the payment market using some composite indicator. For this purpose, we analysed the composition of some well-known digitisation indicators to identify partial indicators that would specifically reflect the level of digitisation of the payment sector. When looking at the Digital Economy and Society Index (DESI, 2022) and its dimensions, we found none to be focused on the payment market. There is a dimension "e-commerce" that is dealing with selling online which is related also to online payments, however, still not reflecting the complexity of digitisation in payment markets. Similarly, in the case of Network Readiness Index (Portulans Institute, 2022), there are several of its sub-indices that deal with digital payments, such as the "socioeconomic gap in use of digital payments" or "rural gap in uses of digital payments". However, these partial indices mainly reflect socioeconomic aspects, so the complexity of digitisation in the payment markets is still not being adequately covered. There is also another indicator, namely the Digital Payments Index, which was created by The Reserve Bank of India for the purpose of measuring the penetration of digital payments throughout the country during different periods. It consists of five partial dimensions, which reflect the digitisation of the payment services market to a large extent (Ravikumar et al., 2022). However, this index is applicable only in India.

## **6. Conclusions**

The present paper focused on the identification of the most prevalent trends in the recent development of the payment services market in the Slovak Republic, both in terms of its structural and digitisation aspects.

From the SEPA payments structure point of view in the period of 2017-2021, payment cards represented on average 51 %, credit transfers 45 % and direct debits 4 %. Specifically, the risen frequency of card payments use is obviously accompanied by a decreasing average amount paid by card. Almost 92 % of card payments were performed by debit cards. It seems that the Slovak payer is quite cautious, relying on its own funds while paying. However, the project of implementation of instant payments has the ambition to substitute not only cash payments, but also standard credit transfers and to some extent also card payments. Therefore, further structural changes in the payment market can be expected in the near future.

The second part of the paper analysed aspects of digitisation of the payment service market. A detailed look at the credit transfers showed that the majority of them (96 % in terms of number) are initiated electronically. At the same time, the increasing use of card payments initiated remotely and their relatively higher value compared to payments at physical EFTPOS confirms the overall tendency to the

digitisation of the payment services market in Slovakia. However, there is a lack of relevant composite indicators that would reflect the development of overall digitisation of the payment services market within the EU. This also forms an interesting challenge for financial policy authorities to initiate activities in this regard.

As part of our future research, we want to extend the analysis to more countries and also explore new payment methods, especially online payments, which are not covered by the database used for the purposes of this paper.

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