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The determinants of cashless turnover in the countries of the European Union

Summary

Cashless turnover, in accordance with a definition of the National Bank of Poland, is a financial transaction, in which, at every stage of a settlement cycle, cash is transferred from and to bank accounts (or private accounts of the banks, or different payment accounts), that is, both on the part of a debtor (payer), and on the part of a creditor (beneficiary) and in the settlements between banks, transaction takes only form of entries on the bank/payment accounts of settling entities¹. In other words, cashless transactions refer to financial transactions, in which both sides of transaction, that is, debtor and creditor have bank/payment account and cash is not used at any stage.

The issue concerning conditions of cashless turnover is particularly important from the point of view of satisfaction of the needs of the consumers, but also for development of cashless turnover. The use of payment services by the consumers enables to satisfy financial needs, which are basic needs in modern economy. The access to wide offer of financial services thanks to financialization of social relations is regarded as the key factor of well-being of the consumers. The growth of usefulness from consumption of goods and services, as well as from the use of specific form of payment results in their increased well-being. Moreover, the decisions about the use by the household members of cashless payment forms are important „link in a decision tree of microfinance” which are derived from institutional current of finance.

One of the premises to look for the factors determining cashless turnover in „old” and „new” countries of the European Union is the key difference, that is, specific EU countries are at various stages of development of cashless turnover. This difference results, for example, from the fact that in the countries of the so-called „old” EU, the number of transactions using payment instruments per 1 resident is usually higher than in „new” EU countries. The author expects that among factors explaining cashless turnover, measured by transactions with the use of payment cards, that is, value and number, there will be determinants common for the countries that are at similar level in terms of development of cashless turnover.

Another motive for conducting the research by the author is approach from micro and macro perspective, which has not been explored sufficiently in literature. The author

¹ *Diagnoza stanu rozwoju obrotu bezgotówkowego w Polsce*, National Bank of Poland, Department of Payment System, Warsaw 2013, p. 3.

emphasizes that in Poland, research were conducted mainly on payment habits of Polish consumers or cyclical studies of analytical character published since 2011, describing international differences in development of cashless turnover, however, without explanations of their causes. Similar perspective of the issue in Poland was applied only by Ł. Goczek and B. Witkowski, however, their models use data that end in 2012. Among foreign authors, panel analyses applied within macro approach were used by, for example, D. Humphrey in 1996, or the authors of recent studies – G. Adrizzi and E. Iachini in 2009 , however, they are out of date due to changing environment. The analyses from macro perspective referred mainly to selected countries, for example, OECD, eurozone, or in the event of Ł. Goczek and B. Witkowski, countries of the European Union, with no consideration for criteria that would diversify them.

The main goal of this dissertation is identification and assessment of the factors determining the use of cashless payment methods by the consumers, particularly with the use of payment cards and their empirical verification from micro and macro perspective in the years 2004-2018. The main formulated hypothesis was the following: in the countries of the “old” and “new” European Union, development of cashless turnover, particularly with the use of payment cards, is determined by different economic, sociodemographic, cultural factors and those connected with payment infrastructure.

The following partial hypotheses were formulated:

H1: Grey market destimulates cashless turnover, and on the other hand, development of cashless turnover affects reduction of grey market.

H2: There is a relation between the degree of progress of cashless turnover in Poland, measured by financial inclusion ratio and selected sociodemographic features of the consumers and economic features and descriptions of payment instruments.

H3: Cashless turnover measured by the number of transactions with the use of payment cards in EU-15 and EU-13 countries is affected differently by economic, sociodemographic, cultural factors and those connected with payment infrastructure.

H4: Cashless turnover measured by the value of transactions with the use of payment cards in EU-15 and EU-13 countries is affected differently by economic, sociodemographic, cultural factors and those connected with payment infrastructure.

Due to the complexity of the research problem, the author analysed it both from micro and macro perspective. In the first case, the author used primary data, collected as a result of the author’s own research with the use of a survey questionnaire. They enabled to identify the factors of using cashless payments from the perspective of a consumer. In the second case,

secondary data were used, collected for specific countries of the European Union from the databases of: EBC Statistical Data Warehouse, World Bank („World Development Indicators”), Eurostat, Transparency International, official website of the European Commission and F. Schneider’s studies. Such perspective allowed to answer the question of what factors support and inhibit the development of cashless turnover and what actions should be taken in the countries with less developed cashless turnover to start „catching up” with more developed countries.

This thesis is of theoretical and empirical character and consists of five chapters. The first chapter is an introduction to the subject connected with cashless turnover, having, above all, explaining and descriptive functions. Applicable legal regulations within the scope of functioning of cashless turnover in the countries of the European Union were presented, with particular emphasis on legislation in Poland. In the second part of the chapter, the main elements of payment system connected with cashless turnover were presented, and the following notions were systematized: payment, payment transaction, payment service, financial transaction. The classification of payments and payment instruments due to main criteria was presented.

In the second chapter, the main directions of the research related to cashless turnover were reviewed and current state of knowledge of this subject was presented. Particular emphasis was put on the conditions of cashless turnover. Emphasis was also put on different research trends in literature being an implication of cashless turnover – such as: economic growth, grey market and transaction costs of cashless turnover. Within these areas, selected results of empirical research were analysed based on the review of literature, focusing both on national and foreign scientific publications. This thesis is based on literature and sources of information appropriate to the subject. Both new and classic books and articles were used and the author referred to world literature.

The market of retail payments, with particular emphasis on payment card market, was described in the third chapter. Attention was also paid to banking penetration, which is the factor determining the use of cashless payment forms, banking penetration in the countries of the European Union was assessed, taking into account the number of accounts *per capita* and number of transactions on the account per one account. The development of cashless payments in the countries of the European Union was also described from time and geographical perspective. The comparisons were made not only between „old” and „new” EU countries, but also between specific countries. Particular attention was paid to tendencies on the payment card market. The changes of the volume of payment cards and transactions with the use of this payment instrument were described, and development of payment infrastructure was assessed.

The state of development of cashless turnover in Poland in comparison with other EU countries was also presented, comparing 2004 with 2018. The chapter ends with description of the effects of COVID-19 pandemic for cashless turnover, particularly its consequences for the use of cashless instruments by the consumers.

In two subsequent chapters, the results of empirical research from micro and macro perspective were presented. In the fourth chapter, the basic tool used in the research was a survey questionnaire. Starting point of the chapter was description of research methodology, and then description of the research sample. Then, the degree of progress of cashless turnover in Polish consumers based on the author's financial inclusion ratio was assessed, while identifying inhibitory factors making people refrain from setting up a bank account that allows to use wide range of payment instruments. Payment methods applied by the consumers depending on channel of distribution and degree of their financial inclusion were also assessed. Then, relation was examined between the fact of using cashless payment forms measured by financial inclusion ratio and selected sociodemographic features of the consumers and resulting from the features of payment instruments.

The fifth chapter is an attempt to develop econometric models that would explain cashless turnover measured by the number and value of transactions with the use of payment cards in the panel of „old” and „new” EU countries using economic and non-economic factors. The selection of potential explanatory variables resulted from theoretical premises, literature studies and analyses conducted in the fourth chapter (micro perspective). The estimation of the parameters of the models was preceded with description of detailed division for response variables and potential explanatory variables. Stationarity of time series were also assessed and correlation between response and explanatory variables were examined.

Based on the results of the research presented in the fourth and fifth chapter, the author verified main hypothesis and partial hypotheses. Knowledge of the factors determining cashless turnover is a significant element of shaping monetary policy and it is a valuable source of information while making key decisions concerning cashless turnover and payment system.