Electronic Commerce Research and Applications 14 (2015) 292–304

Contents lists available at ScienceDirect

Electronic Commerce Research and Applications

journal homepage: www.elsevier.com/locate/ecra

Innovations in the payment card market: The case of Poland

Ewelina Sokołowska

Department of Corporate Finance, University of Gdansk, Gdansk, Poland

ARTICLE INFO

Article history:
Received 17 March 2015
Received in revised form 17 July 2015
Accepted 17 July 2015
Available online 26 July 2015

Keywords:
Card services
Decision-making
E-commerce
Econometrics
Empirical research
Forecasting
Payment cards
Poland

ABSTRACT

The Polish payment card market is important given the current position of Poland as the largest Central European country. The purpose of this research is to determine directions for the development of the payment cards market in Poland. An econometric model describing some important aspects of this market is presented. Short-term forecasts of this market's development will be estimated using a set of constructed empirical econometric models, with particular attention paid to the intensity measures of payment card use, as well as to the use of payment card devices. The findings from these models are meant to provide answers to the question of what can be expected from observing the current Polish market for electronic payments. At the same time, the methodology that is applied is universal and can be used to study the directions of development for electronic payments market elsewhere in the world. It should also be emphasized that selection of an appropriate method requires the testing and matching of such models, which will describe market development most effectively.

© 2015 Elsevier B.V. All rights reserved.

1. Introduction

The development of the market for financial services is connected with the development of the sector that produces financial innovations. The term *innovation* is derived from Latin word *innovare*, which means "to create something new." Innovation also can be understood as the application of new knowledge in a production process (Begg et al. 1997). Various entities operating in such a market often attempt to diversify their products and services in a manner that corresponds with sudden and gradual changes in the economy (Tufano 2003).

Financial innovations entail new financial instruments, new kinds of financial institutions and financial services, and new niche markets, as well as innovations associated with how financial services are delivered (Sokołowska 2010, 2014a) – including the move to the cashless society (Bank of Netherlands 2006). This definition is broad and has been evolving over time, and includes innovative products and processes. The products include derivatives (Sokołowska 2009, Wiśniewska 2003, 2007), for example, and the processes include novel ways of distributing the products, innovative ways of financial transaction settlement, and new payment techniques.

Financial innovation also is a functional approach. New products and services allow financial services market participants to reduce their costs and risks. Such innovations also can better satisfy the expectations of participants compared to traditional products and services. Improvements that are introduced thus should target the need to meet the higher expectations in the marketplace (Frame and White 2014).

Some of the factors that have been driving financial innovations include: progressive globalization processes; the deregulation of financial markets; increased competition; and technological progress. New technologies seem to have increased scale economies in the production of financial services, creating opportunities to improve efficiency and increase value through consolidation (Berger et al. 1999, Berger and DeYoung 2006, Hancock et al. 1999, Hauswald and Marquez 2003, Li et al. 2006).

One of the most visible trends in financial innovation is the development of the payment card market. The need for online payments was first addressed by using payment methods from the offline world for online payments (Vincent et al. 2010). In recent years, a shift away from traditional forms of payments, such as cash and checks, toward more innovative and electronic means of payment has been occurring. Past research by Bolt et al. (2008) indicates that the number of payments using payment cards increased by 140% in 11 European Union countries in the years from 1987 to 2004.

The first plastic credit card appeared in 1958 in the United States, and banks quickly recognized the advantages of this modern means of payment. Magnetic stripe cards in Poland were introduced in the 1980s. The first payment cards in Poland

E-mail address: ewelina.sokolowska@ug.edu.pl

http://dx.doi.org/10.1016/j.elerap.2015.07.005
1567-4223/© 2015 Elsevier B.V. All rights reserved.

appeared in the late 1960s. For many years payment cards in Poland were unobtainable though, mainly due to the economic and political system that blocked modern and innovative solutions. Foreign banks were the ones to have issued these cards, but their usage was very limited. The economic changes that took place in Poland after 1989, and the entry of Poland into the European Union gave the country more opportunities for developing the payment card market.

Serious development of the payment card market only began to take place in Poland in the 1990s though. This was possible mainly because of the reforms carried out after 1989. These changes shaped the national banking sector of the time, and initiated the transformation of retail banking. At the same time, banks began to offer their customers new products and services, including payment cards. Thus, despite the fact that such payment instruments in Poland were a kind of untested financial innovation, the card market grew very fast. Data from the (Polish National Bank 2014) indicate that, in the 3rd quarter of 2013, there were more than 863,000 cash withdrawals at the bank's counters, for a total of 99 million PLN.

Recent changes encourage the assessment of the payment card market in the near future, and the Polish case is an interesting subject for research. On the one hand, the average number of payment cards in Poland per user is lower compared to the average of the European Union countries. On the other hand, the Polish market for electronic payments is one of the most advanced and innovative markets in Europe, and it offers its participants a wide spectrum of payment tools, as well as access to the newest technologies in electronic payments. What is more, after the transformation of the system in Poland, very rapid development of the financial market was observed. The relatively rapid enrichment of the society, which has had significant impacts on the development of the market of financial instruments and services, also has taken place. The growth of gross domestic product (GDP), the enrichment of selected social groups, and the prospects of growing prosperity in the middle Eastern European countries have caused them to become a very attractive market segment for this type of services. For example, in 2013, the value of household savings in Poland exceeded 1 billion PLN (with 1 PLN = 0.33 USD). This growth indicates, that in the years 2001–2011, the savings of the Poles were increasing on average by 11.4% annually (Sokołowska 2014b).

Currently, the payment card market in Poland operates within the national payments structure as part of the retail payment system. Cards play an important role by being an integral part of the payments capabilities in Poland, and the number of payment card subscribers has been increasing with each year. This is determined by universal access, and because payment cards are an excellent alternative to traditional cash. Modern computer and telecommunication technologies have fostered further development of the payment card market due to the innovative solutions that have emerged. The two largest payment organizations, MasterCard and VISA, have proved to be the most popular channels for the distribution of their services. Moreover, Poland was one of the first countries in Europe after Great Britain and France to introduce near field communication (NFC)-based card payments.

The high level of the fees that banks charged for payment card services involving interchange payments hindered market development. The fees amounted to around 1.50% of the transaction value for credit card payments, and around 1.60% of the transaction value for debit card payments. The average in the European Union countries amounted to 0.84% and 0.70% for credit cards and debit cards, while in many others countries these services were available free of charge. An amendment of the Payment Services Act of August 30, 2013 reduced interchange fees to a maximum of 0.5% of the value of domestic transactions using a payment card (Sejm of Poland 2013). The new fee structure went into force starting on January 1, 2014. These changes were meant to increase the availability of non-cash payment mechanisms for all interested consumers. In addition, the improvement of safety and the facilitation of lost payment card claims were other stimulators for market development. The Polish Banks Association launched a new system card cancellation system for this, for example.

Analysis of the payment card market is particularly important given the current position of Poland, since it is the largest country in Central Europe. So studying the direction of development for payment cards in Poland is valuable and interesting – something that this research can achieve.

To this end, an empirical model describing some important aspects of this market will be presented. Short-term forecasts of this market's development, estimated using econometric analysis, also will be reported. Particular attention will be paid to intensity measures for payment card use, as well as the use of payment card devices. These models are meant to provide an answer to the question of what can be expected from observing the current Polish market for electronic payments. At the same time, the methodology is universal. It can be used to study development in electronic payments markets elsewhere in the world. It should also be emphasized that selection of an appropriate method requires the testing and matching of such models, which will describe market development well. We will use quantitative data related to the intensity of payment card usage and electronic payments infrastructure, compared with quantitative variables that describe the characteristics of the market. These include cards, payment-related devices, ATMs, and card-accepting merchants.

2. Literature

Research on the subject of electronic banking appeared in the literature as early as the 1990s. Printing, distribution, and cash controls were estimated to cost a developed economy about 0.75% of annual gross domestic product (GDP), and an emerging economy 1–2% (Cobb 2003). As of mid-2015, the number of studies on the subject of electronic payments has grown much larges. The study performed by Asokan et al. (1997) analyzed electronic payment systems and focused on the issues related to security. Clemons et al. (1996), Kreltszheim (1999), Panurach (1996), Shon and Swatman (1998), and Westland et al. (1998) also conducted electronic payments-related research in the 1990s. Some other empirical studies include work by Borzekowski et al. (2006), Borzekowski et al. (2008), Hyytinen and Takalo (2004), Stavins (2002), van Hove et al. (2005), Zinman (2005a,b), and Jonker (2007). Most studies on the adoption and usage of a new electronic payment technology have been based on the technology acceptance model (TAM) (Davis 1989) and innovation diffusion theory (IDT) (Rogers 1995), without any explicit consideration of the two-sided market structure of the payments market. See-To et al. (2007) developed a model of a two-sided market, and found that a *survival mass* of merchants and consumers is required for a payment system to be sustainable, and a *critical mass* for the acceptance level to take off and remain stable.

With regard to the directions for changes in the market for electronic payment forms, it is worth noting the study by Humphrey et al. (1996). They attempted to estimate how consumer payments break down between different payment mechanisms in various countries. They aimed to explain the determinants of these choices. The results of their study confirmed that dynamic growth of electronic payment forms is associated with a lower cost of their use compared to other payment forms. The authors also tried to explain why payment systems differ across various countries. Major factors influencing those differences reflect the variety of the options available to consumers, as well as the institutional

Download English Version:

https://daneshyari.com/en/article/379574

Download Persian Version:

https://daneshyari.com/article/379574

Daneshyari.com