

*Eugeniusz Gatnar**

FINANCIAL INCLUSION INDICATORS IN POLAND

Abstract. Financial inclusion refers to a state in which all working age adults have effective access to credit, savings, payments, and insurance from formal service providers.

The aim of this paper is to introduce several indicators that show the level of financial inclusion in Poland. The indicators are calculated on the base of the data collected and compiled by the payment system statistics of the National Bank of Poland.

We will also compare the value of the indicators for Poland to those of the other countries in database.

Key words: Financial inclusion, Central Bank statistics, Payment system, linear order.

I. FINANCIAL INCLUSION

There are many definitions of Financial Inclusion, but the most appropriate is the one by Center for Financial Inclusion at Action in Washington. According to it, financial inclusion is a state in which all people have access to a full suite of quality financial services, provided at affordable prices, in a convenient manner, and with dignity for the clients. Financial services are delivered by a range of providers, most of them private, and reach everyone who can use them, including disabled, poor, rural, and other excluded populations (Ardic et al. 2012).

According to the IMF data 41% of adults in developing economies are banked-compared to 89% of adults in high-income economies. 37% of women in developing economies are banked-compared to 46% of men.

Furthermore, 8% of adults in developing economies borrowed money from a formal lender in the past year (excluding credit card debt), compared to 14% of adults in high-income economies.

Low-income countries have 3,3 commercial bank branches and 3,9 Automatic Teller Machines (ATM) per 100.000 adults in 2011 – compared to 47 commercial bank branches and 18 ATMs per 100.000 adults for the world as a whole. These numbers were 2,9 and 0,3 for branches and ATMs, respectively, in 2004 for low-income countries.

Financial inclusion refers to the delivery of financial services of an economy to its inhabitants (Chakravarty, 2010). The domain of financial services can be

* Professor. National Bank of Poland and Katowice University of Economics.

quite large and it may vary from country to country. Several indicators have been used in the literature to measure financial inclusion, both univariate and multivariate ones.

II. INTERNATIONAL INITIATIVES

In order to cope with problem of financial inclusion, several initiatives have been established. G20 set up Global Partnership for Financial Inclusion and the support provided by World Bank Group and AFI. There are Three GPF subgroups: SME finance, work with standard setting bodies, and data and measurement. There has been a proposal to explore issue of consumer protection and literacy.

Alliance for Financial Inclusion (AFI) is the network of central banks, supervisors and other financial regulatory authorities (95 members from 81 countries). Its membership overlaps partly with BIS/IFC. The Alliance focuses on peer learning and knowledge sharing and 35 members made concrete FI commitments.

Microfinance Information Exchange (MIX) is the Washington-based non-profit international organisation that collects, validates, and analyses microfinance data and various private sector partner organizations.

Finmark/Finscope FinMark Trust is an independent trust set up in 2002 with initial funding of UK Dept for Int Development. It performs surveys: consumer survey and small business. It provides FI indicators for various African countries.

The Center for Financial Inclusion is a New York-based group of key industry participants. There are also some regional initiatives and various donor organizations involved in this field, eg. Gates Foundation.

III. UNIVARIATE INDICATORS

The Core Set of indicators is one initiative developed by the Financial Inclusion Data Working Group as a guidance to conduct data collection and measurement efforts at country-level. This set is a list of indicators designed by policymakers to be flexible for country-specific needs, but at the same time to allow certain amount of comparison and benchmarking among countries.

The AFI Core Set of Financial Inclusion Indicators (2011) is the first step in establishing a common measurement of financial inclusion, whereby the indicators are meant to measure the most basic and fundamental aspects of financial inclusion. The Core Set Indicators address the two basic dimensions of

financial inclusion; access and usage of financial services. Basic set contains variables: formally banked adults, adults with credit by regulated institution. formally banked enterprises, enterprises with credit by regulated institution, points of service.

Secondary set is in development and would contain: payments and remittances, credit information, financial capability, financial consumer protection.

In order to measure the access to financial services we could consider: number of branches and banking agents per 10,000 adults, number of ATMs or Points of Sales (POS) per 10,000 adults, % of adult population living in a municipality with at least one access point.

Usage of financial services could be measured by variables: number of deposit accounts/loans per 1,000 adults, number of depositors/borrowers per 1,000 adults, % of adults with an account at a formal financial institution, % of products that correspond to banks/other financial institutions, % of adults with at least one financial product.

IV. MULTIVARIATE INDICATORS

A multivariate (composite) FI Indicator combines the information contained in many univariate indicators (features). From geometrical point of view it reduces multiple dimensions to one, and makes all dimensions comparable by normalization. It provides a valuable instrument to diagnose the financial inclusion situation with respect to other countries. Moreover, the composite FI Index allows for comparisons across countries.

Sarma (2008) proposed the FI Index by adopting the HDI index:

$$FI_i = 1 - \sqrt{\frac{\sum_{j=1}^n (1 - d_{ij})^2}{n}} \quad (1)$$

where used normalization is: $d_{ij} = \frac{X_{ij} - \min_j \{X_{ij}\}}{\max_j \{X_{ij}\} - \min_j \{X_{ij}\}}$.

Chakravarty and Pal (2010) proposed another formula for the FI index:

$$FI_i = \frac{1}{n} \sum_{j=1}^n d_{ij} \quad (2)$$

We proposed the Hellwig measure (1968), which was previously used in socio-economic development context:

$$FI_i = 1 - \frac{d_{i0}}{\bar{d} + 2s}, \quad (3)$$

where standardisation for component features is used and d_{i0} is the distance of the i -th country to the reference object $X_0 = (\max_i \{X_{ij}\}, \dots, \max_i \{X_{ij}\})$.

Furthermore:

$$\bar{d} = \frac{1}{n} \sum_{j=1}^n d_{i0} \quad s = \sqrt{\frac{1}{n} \sum_{j=1}^n (d_{i0} - \bar{d})^2}. \quad (4)$$

V. FINANCIAL INCLUSION IN POLAND

Data collected by the National Bank of Poland in the field of financial inclusion come from various statistical systems. From the payment system statistics we can obtain: number of bank accounts, number of payment cards, volume and value of payment cards' transactions, number of POS terminals, number of ATMs, and money remittance flow. From the balance of payment statistics we can get data on households' deposits and credit.

If we consider the simplest FI index, which is bank account holdings, Poland is well developed, as shown in Figure 1. Only 23% of Poles do not have a bank account.



Fig. 1. Bank account holdings in Poland

Source: Koźliński (2012), N=1000.

Figure 2 shows how the number of accounts grew in the last seven years, resulting in the total number of 36,5 million of bank accounts in Poland. So it increased by 70% in the period.

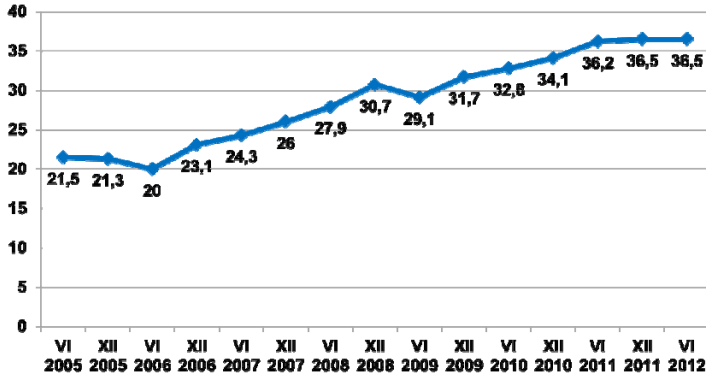


Fig. 2. Number of bank accounts in Poland

Source: Payment Systems Department National Bank of Poland.

But 81,9% of the payments done in Poland in 2011 are cash payments as shown in Figure 3.

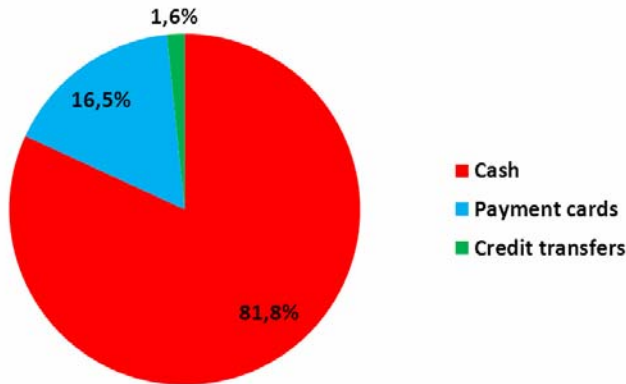


Fig. 3. Structure of payments in Poland

Source: Koźliński (2012), N=5060.

The number of payment cards issued in 2011 in EU countries is presented in Figure 4. Bearing in mind that the level of card payments in the payment system in Poland is only 16,5% of payments, we recognize Poland as a country on the one before the last position in Europe. Only 84 out of 100 persons have a payment card, where the European average is 144.

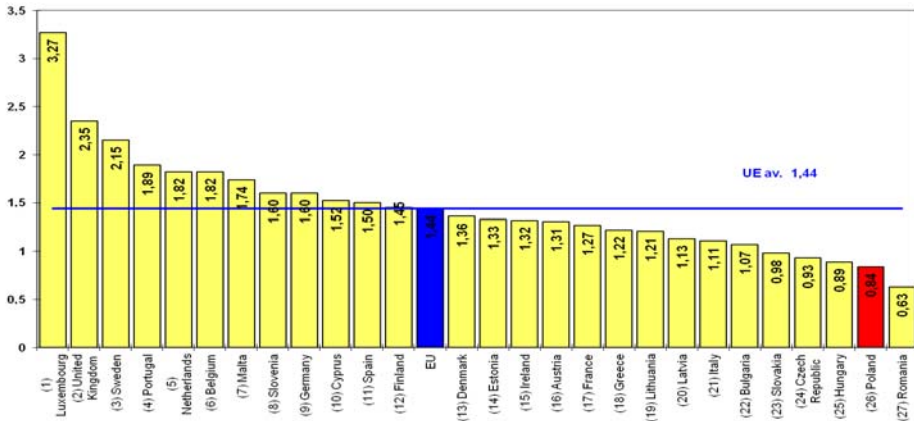


Fig. 4. Number of cards issued in the EU countries per capita

Source: European Central Bank.

Next important univariate indicator of financial inclusion is the number of POS terminals, that allow card payments. As shown in Figure 5 there are only slightly more than 7.000 terminals per million of inhabitants. That gives Poland 25th position in the EU.

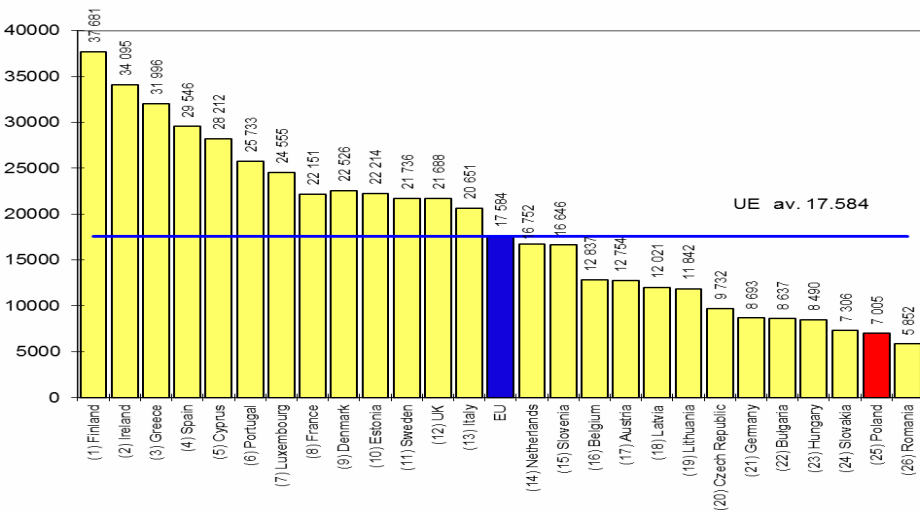


Fig. 5. Number of POS terminals in the EU countries per million inhabitants in 2011

Source: European Central Bank.

VI. INTERNATIONAL COMPARISON

In order to compare the level of financial inclusion for the set of 34 countries we applied the FI Index based on the Hellwig measure (3). We limited our calculations to infrastructure features and banking services only, due to information availability: number of ATMs per 10,000 adults, number of POS per 10,000 adults, and number of bank branches per 10,000 adults. The resulted ranking for the year 2010 is presented in Table 1.

Poland is on the 27th position in the ranking of 34 countries, up above its neighbors: Czech Republic and Slovakia, but far beneath advanced European economies, such as France, Italy and Spain.

Table 1. Ranking of 34 countries based on the FI Index (3)

Country	Rank	Country	Rank
Spain	1	Denmark	18
Portugal	2	Austria	19
France	3	Estonia	20
Cyprus	4	Sweden	21
Italy	5	Russia	22
Luxemburg	6	Latvia	23
Greece	7	Lithuania	24
Belgium	8	Netherlands	25
Brasil	9	Hungary	26
Switzerland	10	Poland	27
Slovenia	11	Rumania	28
Bulgaria	12	Slovakia	29
Finland	13	Czech Republic	30
Germany	14	Chile	31
United Kingdom	15	México	32
Ireland	16	Saudi Arabia	33
Malta	17	India	34

Source: own calculations.

VII. CONCLUSIONS

Various international initiatives have been started to provide methodological guidance and coordinate international data collections using standard indicators. Some efforts have been made to develop composite indicators at national and international level, but they are simple measures so far. Some more methodological issues need to be addressed in the future.

In this paper we proposed a new formula for the FI Indicator which is a useful instrument to diagnose FI situation of a country in international comparisons. But there is a lack of available international statistical data on financial inclusion. In Poland the data for the FI Indicator is collected by different public institution: National Bank of Poland, Financial Services Authority, Central Statistical Office, Polish Banking Association, etc. We limited our index scope to banking services, and we omitted investment, insurance services and pension funds.

According to the proposed FI Index, Poland is on 26th position amongst 34 countries, mainly because of the dominant position of cash payments in its payment system.

REFERENCES

- Alliance for Financial Inclusion (2011). *Measuring Financial Inclusion: Core Set of Financial Inclusion Indicators*. Financial Inclusion Data Working Group Report, April 2011.
- Ardic Oya Pinar, Chen G., Latortue A. (2012). *Financial Access 2011: An Overview of the Supply-Side Data Landscape*. Washington DC: CGAP and IFC.
- Ardic Oya Pinar, Heimann M., Mylenko N. (2011). *Access to Financial Services and the Financial Inclusion Agenda around the World, A Cross-Country Analysis with a New Data Set*, WPS 5537, World Bank/CGAP.
- Beck T., Demirguc-Kunt A., Martinez Peria M.S. (2006). *Reaching Out: Access and Use of Banking Services Across Countries*, World Bank, Washington D.C., July 2006.
- Beck T., Demirguc-Kunt A., Levine R. (2007). *Finance, inequality and the Poor*. Journal of Economic Growth, 12, 27-49.
- Beck T., Demirguc-Kunt A., Peria M., Soledad M. (2007). *Banking services for everyone? Barriers to bank access and use around the world*. WPS 4079. World Bank Policy Research.
- Demirguc-Kunt A., Klapper L. (2012). *Measuring Financial Inclusion: The Global Findex Database*. Policy Research Working Paper No. 6025. Washington DC: World Bank.
- Chakravarty S. R., Pal R. (2010) *Measuring Financial Inclusion: An Axiomatic Approach*, Working Paper 2010-003, Indira Gandhi Institute of Development Research, Mumbai.
- Claessens S. (2006). *Access to Financial Services: A Review of the Issues and Public Policy Objectives*, The World Bank Research Observer 21 (2), 207-240.
- Hellwig Z. (1968), *Application of a taxonomic method for partition of countries based on the level of their development*, Statistical Review 4, 1968 (in Polish).
- Honohan Patrick (2008). *Cross-country Variation in Household Access to Financial Services*, Journal of Banking & Finance 32, 2493-2500.
- Kozłiński T. (2012), *Payment Behaviour in Poland*, Technical Report, National Bank of Poland, Payment Systems Department, Warsaw.
- Sarma M. (2012). *Index of Financial Inclusion – A measure of financial sector inclusiveness*. Berlin Working Papers on Money, Finance, Trade and Development. Working Paper No. 07/2012.

Eugeniusz Gatnar

WSKAŹNIKI INTEGRACJI FINANSOWEJ W POLSCE

Integracja finansowa to stan, w którym wszyscy dorośli w wieku produkcyjnym mają dostęp do szerokiego zestawu usług sektora finansowego, takich jak: kredyty, oszczędności, opłaty oraz ubezpieczenia za pomocą pośredników świadczących usługi na tym rynku.

Artykuł został poświęcony omówieniu dostępnych wskaźników integracji finansowej dla Polski. I to zarówno wskaźników indywidualnych, jak i syntetycznych. Dane do ich wyznaczenia są pobierane z systemów statystycznych banku centralnego; systemu płatniczego oraz bilansu płatniczego.

Wartości wskaźnika służą do międzynarodowych porównań Polski pod względem dostępu do infrastruktury finansowej.