

INDIVIDUAL FARMERS' BANK LOANS AND DEPOSITS IN POLAND UNDER ECONOMIC UNCERTAINTY DURING THE COVID-19 PANDEMIC

Monika Utzig✉

Warsaw University of Life Sciences – SGGW, Poland

ABSTRACT

Aim: The paper aimed to evaluate changes in farmers' bank loans and deposit value under economic uncertainty, mainly caused by the COVID-19 pandemic. **Methodology:** The statistical data from Narodowy Bank Polski for the span of January 2018 – September 2022 was used and the dynamic indexes were computed. The Global Economic Policy Uncertainty Index was also used to show if the COVID-19 pandemic increased economic uncertainty. **Results:** The results show that in the analyzed period, an increase in the value of farmers' bank deposits and a drop in farmers' bank loans were observed. An increase in the value of farmers' bank deposits occurred when interest rates were extremely low, so it can be stated that the growth of the value of farmers' bank deposits resulted from economic uncertainty, and not from the rising profitability of deposits. At the same time, the value of farmers' bank loans decreased, but it is difficult to indicate if this is an effect of the tightening of banks' loan policies or of the farmers' aversion to risk. **Conclusions:** The research concerning economic entities' loan and deposit activity is a very important subject because of the increasing role of uncertainty nowadays. What is observed is that the value of farmers' bank loans dropped but it is difficult to state for sure if this was caused by economic uncertainty and therefore reduced capital needs of farms or by the reduction of banks' credit activity and negative credit decisions.

Key words: economic uncertainty, farmers, loans, deposits, COVID-19

JEL codes: D80, G21, Q14

INTRODUCTION

According to Frank Knight [1921], risk is measurable and uncertainty is unmeasurable. Uncertainty itself is connected with the lack of security and certainty [Bochenek 2012]. Nowadays, the role of economic uncertainty is increasing due to acts of terrorism, armed conflicts, the COVID-19 pandemic, and so on. There are some observations connected to households' behavior under economic uncertainty. According to Martin et al. [2020], under economic

uncertainty, households spend their previous savings. According to Aaberge et al. [2017], households tend to decrease their consumption level. These two results conflict and it is valuable to investigate which of them is observable among individual farmers in Poland. Under increasing economic uncertainty, a decrease in the banks' loan supply is observed, which takes two main forms. The first form is a reduction in the availability of spot funds, and the second is related to the provision of liquidity insurance [Barraza and Civelli 2020, Wu and Suardi 2021]. Chinese data

Monika Utzig <https://orcid.org/0000-0003-2393-0430>

✉monika_utzig@sggw.edu.pl

shows that under economic and policy uncertainty, credit risk increases and leads to a decline in loan sizes [Chi and Li 2017]. According to European data, under economic uncertainty, the ratio of non-performing loans to total loans increases [Karadima and Louri 2021], which indicates that borrowers more often do not make repayments of principal and/or interest for at least 90 days.

The COVID-19 pandemic caused a sharp increase in uncertainty and has had a massive effect on the real economy and the financial sphere [Bakas and Triantafyllou 2020]. The COVID-19 pandemic influenced agriculture and the food system, mainly through unstable supply chains, increases in costs due to inflation, and consumers' reduced purchasing power [Skawińska and Zalewski 2020]. Besides the real market, the COVID-19 pandemic also affected the financial market. One of the areas influenced by the COVID-19 pandemic was the market of loans and deposits for individual farmers. According to the research of Daniłowska [2022], under uncertainty caused by the COVID-19 pandemic, the value of individual farmers' bank deposits increased, and the value of their loans decreased, despite the reduction of interest rates by the central bank. The drop in the value of bank loans for farmers may have been caused by bank politics [Zajac et al. 2021] or by the tightening of the banks' credit policies [Daniłowska 2021].

The paper aims to evaluate changes in the value and structure of individual farmers' loans and deposits under economic uncertainty, especially that caused by the COVID-19 pandemic. The hypothesis was made that under economic uncertainty, farmers avoid incurring liabilities.

MATERIAL AND METHODS

To evaluate changes in the value and structure of individual farmers' bank loans and deposits under the economic uncertainty caused by the COVID-19 pandemic, data was used from the Narodowy Bank Polski database: banks' assets and liabilities [NBP 2022a]. Monthly data from January 2018 to September 2022 was used. In Narodowy Bank Polski's statistics, individual farmers, together with individuals and individual entrepreneurs, are included in the group of house-

holds [NBP 2022c]. Farmers are defined as natural persons whose principal source of income is agricultural production, and their activity is not registered as an enterprise, company, cooperative, or producer group. Among bank loans to farmers, there are loans on current account (loans to finance the current activities of a farm), investment loans (loans to finance new or to increase the existing capacity of the borrower, to finance a project aiming at the replacement, modernization and increase of fixed assets, loans for the purchase of real property, and other loans (loans to households not included elsewhere, e.g. loans for car purchase, loans for the purchase of securities). Farmers' bank deposits are divided into overnight deposits (e.g. deposits on current accounts, savings accounts without any agreed maturity), and deposits with agreed maturity (farmers' funds placed with a resident bank, which cannot be converted into currency before an agreed fixed term or that can only be converted into currency before that agreed term provided that the holder is charged some kind of penalty, e.g. a reduction of the interest due) [NBP 2022b].

To evaluate changes in the value and structure of individual farmers' bank loans and deposits, the dynamics indexes and the share of deposits were computed. The dynamics index (i) is measured as [Raczowska and Wrzesińska-Kowal 2020, p. 21]:

$$i = \frac{y_1}{y_0}$$

where:

i – dynamics index,

y_0 – value of the phenomenon at the beginning of the period,

y_1 – value of the phenomenon at the end of the period.

RESULTS

One of the economic policy uncertainty measures is the Economic Policy Uncertainty Index (EPU) which measures the relative frequency of own-country newspaper articles that contain a trio of terms pertaining to the economy (E), policy (P), and uncertainty (U) [Baker et al. 2016]. Based on the EPU, the Global Economic Policy Uncertainty Index was built by Davis

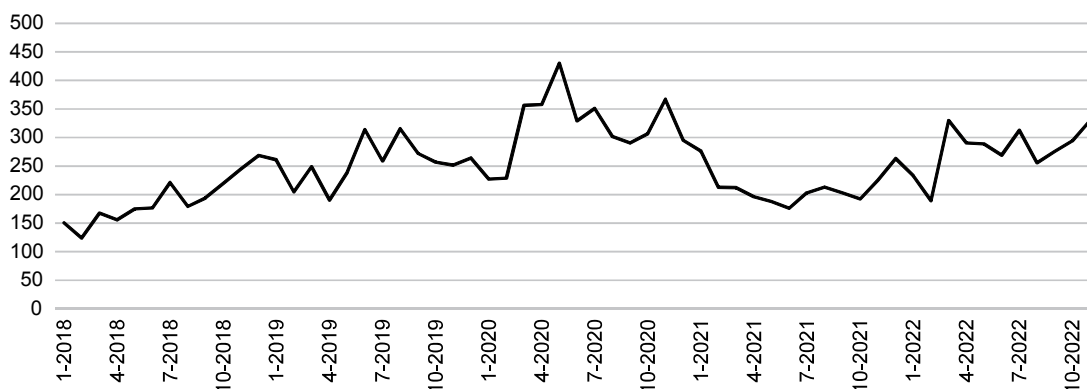


Fig. 1. Global Economic Policy Uncertainty Index from January 2018 to November 2022
Source: [Economic Policy Uncertainty 2022].

[2016]. This index is published for chosen countries and as a global index, which is the GDP-weighted average of national EPU indices for 21 countries: Australia, Brazil, Canada, Chile, China, Colombia, France, Germany, Greece, India, Ireland, Italy, Japan, Mexico, the Netherlands, Russia, South Korea, Spain, Sweden, the United Kingdom, and the United States [Economic Policy Uncertainty 2022]. The Global Economic Policy Uncertainty Index increased significantly in May 2020, two months after the beginning of the COVID-19 pandemic in March 2020 (Fig. 1).

The Global Economic Policy Uncertainty Index also increased with the beginning of the Russian invasion of Ukraine in February 2022, but the growth of the index was not as immense as at the start of the

COVID-19 pandemic. We can match the heightened uncertainty with the first wave of the pandemic and with the beginning of the Russian invasion. It is also important that economic uncertainty increases during different kinds of crises, such as the 2007–2008 financial crisis and wars [Al-Thaqeb et al. 2020]. The aim of the research was to evaluate the value and structure of individual farmers' bank loans and deposits in Poland under economic uncertainty (Fig. 2).

From January 2018 to September 2022, bank loans to farmers dropped while bank deposits from farmers increased. In September 2022, the value of bank loans and other claims on farmers decreased in current prices by 10% from January 2018 and by 13.5% from the maximum seen in July 2019. The opposite situation

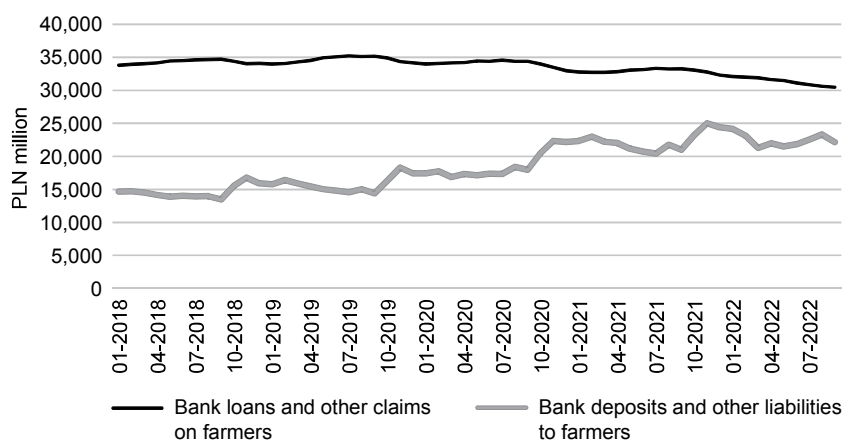


Fig. 2. Bank loans and deposits to farmers (in PLN million in current prices)
Source: [NBP 2022a].

is observed among bank deposits. The value of bank deposits from farmers increased by 51% from January 2018 to September 2022. The maximum level of bank deposits from individual farmers was observed in November 2021, and since then, it has dropped by 11%. Because farmers' bank deposits are characterized by seasonality, the dynamics index of the loans and deposits was computed with the base period being the same month of the previous year (Fig. 3). One of the reasons for the seasonality of farmers' bank deposits is direct payment and other transfers of public funds to agriculture resulting from the mechanisms of the Common Agricultural Policy, which significantly affects the income situation of agriculture in Poland [Golonko et al. 2021].

It can be observed that under economic uncertainty, the value of farmers' bank deposits increased significantly. Between August 2020 and May 2021, the yearly growth rate exceeded 20%. A decrease in farmers' deposits was observed only in March and April 2022. To sum up, one can state that the COVID-19 pandemic caused an increase in farmers' bank deposits.

Looking at the changes in farmers' bank loans, it should be mentioned that from June 2020 to September 2021, interest rates were extremely low (Fig. 4).

Despite the near-zero interest rates from June 2020 to September 2021, the value of bank loans to individual farmers decreased (Fig. 3), probably due to the farmers' fear, which led to them avoiding tak-

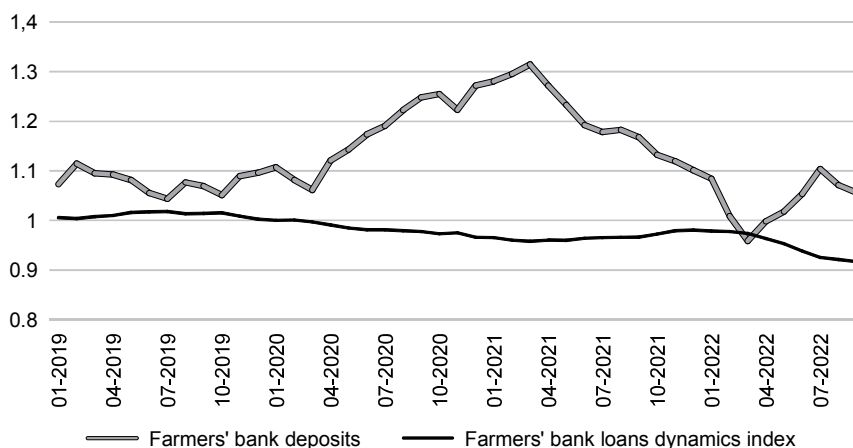


Fig. 3. Dynamics index of bank loans and deposits to farmers (base period – the same month of the previous year)

Source: Own calculations based on [NBP 2022a].

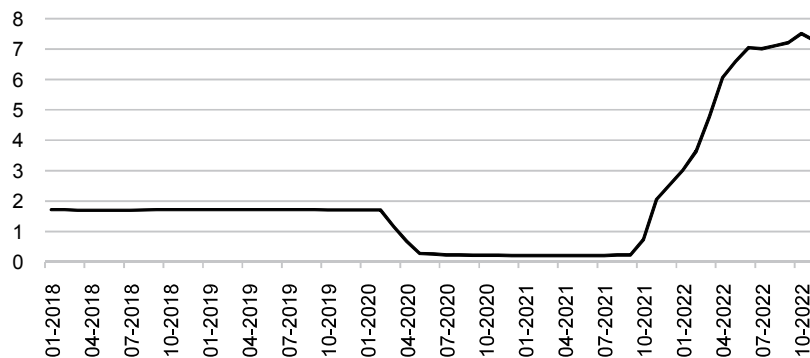


Fig. 4. Value of WIBOR PLN 3M (in %)

Source: [Stooq 2022].

ing out loans. So, it can be stated that the drop in farmers' bank loans was caused more by economic uncertainty than by the high loan cost. From February 2022, the decrease in farmers' bank loans accelerated, but it occurred together with an increase in the loan cost measured by the Warsaw Interbank Offered Rate (WIBOR). Extremely low levels of interest rates can also be seen as a reason for avoiding deposits with agreed maturity. The share of farmers' deposits with agreed maturity in total deposits dropped from levels of 5% in 2018 to shares below 2% between October 2021 and April 2022 [NBP 2022a]. It is also worth assessing how the growth of uncertainty affected the structure of farmers' bank loans (Fig. 5).

Among bank loans to farmers, investment loans dominated from January 2018 to September 2022 with a value of about PLN 12–15 billion. The share of loans in current accounts and loans for the purchase of real property were also important. In September 2022, the value of investment loans was lower by 23% than in January 2018. At the same time, loans in current accounts decreased by 11% and other loans by 28%, and only bank loans to farmers for the purchase of real property increased (by 11%) in current prices.

DISCUSSION AND CONCLUSIONS

The research shows changes in farmers' bank loans and deposits in the span covering the COVID-19 pandemic. In the analyzed period, an increase in farmers' bank deposits, as well as a drop in farmers' bank loans, were observed. The author indicated that this was caused not by changes in the costs and profitability of loans and deposits, but by the high level of economic uncertainty affecting farmers' decisions. The results are consistent with the results of another study showing that during the COVID-19 pandemic, microenterprises and farmers were particularly vulnerable to the negative consequences of the pandemic because, during the crisis period, banks were less willing to grant these groups of entities [Zajac et al. 2021]. Another finding shows that during the COVID-19 pandemic, commercial banks tended to tighten their lending standards and terms [Daniłowska 2021], so it is difficult to evaluate if the drop in the value of bank loans was affected by the farmers' reluctance to take out loans or by banks' reluctance to approve loans. This is especially the case as farmers in Poland exhibit medium-to-high levels of risk aversion [Sulewski et al. 2020].

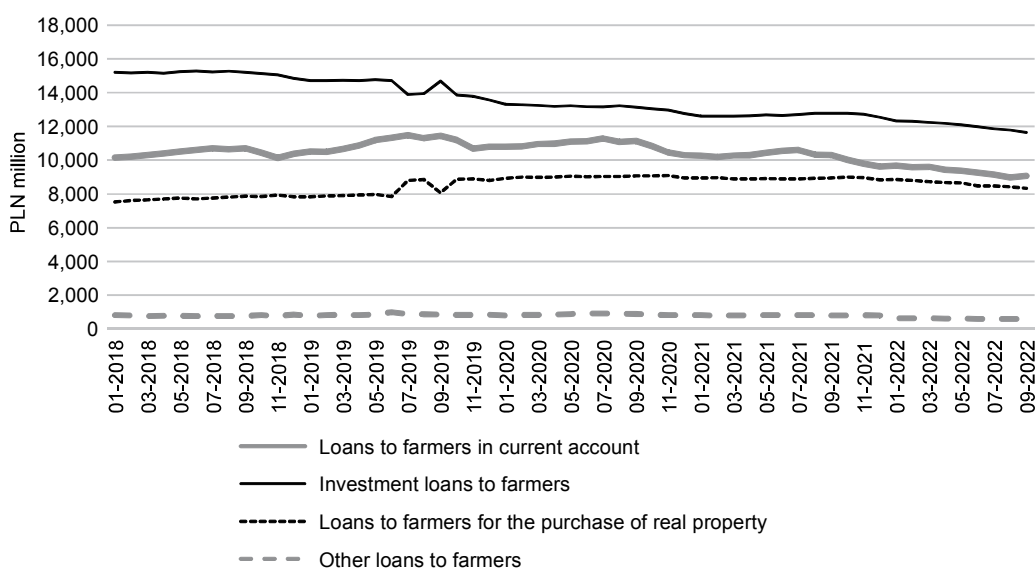


Fig. 5. Bank loans to farmers by type (in PLN million in current prices)

Source: [NBP 2022a].

Under economic uncertainty, the value of bank loans to individual farmers decreased and the value of bank deposits increased. Because interest rates and bank deposits' profitability were very low then, the share of overnight deposits increased when the share of deposits with agreed maturity decreased. Among bank loans to farmers, investment loans dominated in the analyzed period, loans on current accounts and loans for the purchase of real property were also very important. The value of bank loans to farmers decreased only slightly after the beginning of the COVID-19 pandemic. That may mean that both banks and farmers adopted a so-called wait-and-see strategy. After the period of very low levels of interest rates from March 2020 to November 2021, they increased slightly. The drop in creditworthiness, caused by the increasing interest rates, coincided with the start of the Russian invasion of Ukraine in February 2022 and a significant decrease in bank loans to farmers was observed.

The presented research is valuable because it is important to investigate how uncertainty affects economic circumstances. Bank deposits are the form of holding farmers' savings or free financial resources, and bank loans are one of the sources of financing for their economic activity.

The research is not without limitations. The presented data are aggregated and do not show the differences between the types of agricultural production, sizes, and locations of farms. This may constitute a direction for further research. The problems that specific farms face can result in the need for additional loans, which may be inaccessible due to a lack of creditworthiness, so, it is also important to verify if the decrease in the value of bank loans is determined by reducing capital needs of farms or by negative credit decisions. The increase in the value of bank deposits from farmers could also be caused by a financial surplus from agricultural production or from refraining from making financial decisions, especially from spending money. It is also worth investigating the reasons for that increase.

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KREDYTY I DEPOZYTY BANKOWE ROLNIKÓW INDYWIDUALNYCH W POLSCE W WARUNKACH NIEPEWNOŚCI GOSPODARCZEJ PODCZAS PANDEMII COVID-19

STRESZCZENIE

Cel: Celem opracowania była ocena zmian wartości i struktury kredytów bankowych dla rolników indywidualnych w warunkach niepewności gospodarczej, głównie spowodowanej przez pandemię COVID-19. **Metodyka:** Wykorzystano dane statystyczne Narodowego Banku Polskiego za okres od stycznia 2018 do września 2022 roku oraz policzono indeksy dynamiki. Wykorzystano również Globalny Indeks Niepewności Gospodarczej i Politycznej w celu pokazania, czy pandemia COVID-19 skutkowałą zwiększeniem niepewności gospodarczej. **Wyniki:** Wyniki wskazują, że w badanym okresie obserwowano zarówno zwiększenie wartości depozytów bankowych rolników, jak i spadek kredytów rolników. Zwiększenie wartości depozytów rolników występowało, gdy stopy procentowe były ekstremalnie niskie, dlatego można stwierdzić, że zwiększenie wartości depozytów bankowych rolników wynikało z niepewności gospodarczej a nie z rosnącej zyskowności depozytów. W tym samym czasie, wartość kredytów bankowych dla rolników spadała, ale trudno jest wskazać, czy jest to efektem zacieśniania polityki kredytowej banków czy awersji rolników do ryzyka. **Wnioski:** Badania dotyczące aktywności kredytowej i depozytowej podmiotów gospodarczych są bardzo ważne z powodu rosnącej roli niepewności w dzisiejszych czasach. To co jest obserwowane, to fakt, że wartość kredytów rolników spadła, ale trudno jest stwierdzić z całą pewnością, czy wynikało to z niepewności gospodarczej i ograniczonych potrzeb kapitałowych rolników z tego powodu, czy z redukcji aktywności kredytowej banków i negatywnych decyzji kredytowych.

Słowa kluczowe: niepewność gospodarcza, rolnicy, kredyty, depozyty, COVID-19