Safe Bank 2 (79) 2020

DOI: 10.26354/bb.3.2.79.2020

Ewa Kulińska-Sadłocha[*]
ORCID: 0000-0002-8183-6111
Ewa.Kulińska68@gmail.com

Monika Marcinkowska[**]
ORCID: 0000-0002-3494-9834
monika.marcinkowska@uni.lodz.pl

Jan Szambelańczyk[***]
ORCID: 0000-0002-4340-5193
Jan.Szambelanczyk@ue.poznan.pl

The impact of pandemic risk on the activity of banks based on the Polish banking sector in the face of COVID-19

Abstract

The aim of the study is to analyze the direct and indirect consequences of the COVID-19 pandemic for the Polish banking sector. We analyzed activities aimed at maintaining the banking sector's ability to finance the economy undertaken by the government, central bank, banking supervision, and banks in Poland, as well as assessed the financial situation of the banking sector in the period preceding COVID-19 and shortly thereafter. We found that anti-crisis measures and interventions were reflected in the financial situation of banks in the first month of their introduction, among others, by a rise in write-offs for provisions for receivables, an increase in other operating costs, or a significant decrease in receivables from debt instruments. The latter being due to the central bank providing additional liquidity to banks. Unfortunately, contrary to the expectations for increased credit availability, banks tightened their lending policy and focused mainly on financing their existing clients who had only temporary financial problems caused by COVID-19. One possible explanation for this is a lack of financial incentives for banks that neutralize an increase in risk and operating costs amid the pandemic (e.g. fiscal), despite the existence of such preferences for Treasury securities.

Key words: bank, banking sector, COVID-19, financial markets, health crisis, pandemic

JEL: G21, G28, I15, O16

[*] Ewa Kulińska-Sadłocha – Polish Economic Society in Warsaw.
[**] Monika Marcinkowska – University of Lodz.
[***] Jan Szambelańczyk – Poznań University of Economics and Business.

Wpływ ryzyka pandemii na działalność banków na przykładzie polskiego sektora bankowego w trakcie COVID-19

Streszczenie

Celem opracowania jest analiza bezpośrednich i pośrednich konsekwencji pandemii COVID-19 dla polskiego sektora bankowego. Analizie poddano działania mające na celu zachowanie zdolności sektora bankowego do finansowania gospodarki podejmowane przez rząd, bank centralny, nadzór bankowy oraz banki, a także dokonano analizy sytuacji finansowej sektora bankowego w okresie poprzedzającym COVID-19 i po pierwszych antycovidowych działaniach.

Działania i interwencje antykryzysowe znalazły odzwierciedlenie w sytuacji finansowej banków już w pierwszym miesiącu ich wprowadzenia, m.in.: poprzez zwiększenie odpisów na rezerwy na należności, wzrost pozostałych kosztów operacyjnych czy znaczny spadek należności z tytułu instrumentów dłużnych. Ten ostatni na skutek dostarczenia przez bank centralny dodatkowej płynności bankom. Niestety wbrew oczekiwaniom zwiększenia dostępności kredytów – banki zaostrzyły politykę kredytową i skupiły się głównie na finansowaniu swoich dotychczasowych klientów mających jedynie przejściowe problemy finansowe wywołane COVID-19. Wyjaśnieniem tego jest m.in. brak bodźców finansowych dla banków neutralizujących wzrost ryzyka i kosztów działalności w warunkach pandemii (np. fiskalnych), a jednocześnie istnienie takich preferencji dla skarbowych papierów wartościowych.

Słowa kluczowe: bank, sektor bankowy, COVID-19, rynek finansowy, kryzys zdrowotny, pandemia

Introduction

On 30 January 2020, the World Health Organisation (WHO) declared the 2019-nCoV coronavirus, which had first appeared in November 2019 in the Chinese city of Wuhan, an international public health emergency. COVID-19[1] has become a serious threat to human health worldwide and the steps taken by different countries to limit the spread of the virus and manage the pandemic have resulted, among other things, in a sudden drop in economic activity and the deactivation of workers. Restrictions and bans introduced to protect the health and life of the population have contributed to a reduction or loss in income as well as in the ability of businesses and the population to pay their financial obligations. Many governments have created emergency assistance programmes to mitigate the short-term economic impact of the pandemic, and to counteract the economic downturn.

The 2020 pandemic is a health crisis, in some locations even a humanitarian one, and a huge shock to socio-economic systems, including, sooner or later, the banking sector. Although the activity of banks in the first stage of the epidemic was not significantly affected, this situation may change in the subsequent stages, and even after the pandemic has been contained. This concerns in particular the deterioration

[1] In February 2020, the WHO announced, that the official name of the 2019-nCoV (Also known as the Novel Coronavirus or informally known as the Wuhan Coronavirus) will be "Covid-2019".

of the financial situation of customers and contractors, as well as disturbances on the financial markets. With the support of regulators and supervisors, banks can mitigate the negative effects by, for example, taking actions aimed at maintaining or repairing the economy of enterprises, preventing the loss of jobs or income of employees and customers, and, finally, adapting the organisation and activities of banks to the new situation, while maintaining the principles of responsible banking.

The aim of the study is to analyze the direct and indirect consequences of the COVID-19 pandemic for the Polish banking sector. Empirical analyzes were preceded by the characterization of the pandemic and by the periodization and systematization of actions aimed at restoring the stability of the socio-economic system. Then, the interventions of the government, central bank – the National Bank of Poland (Narodowy Bank Polski, NBP), and the Polish Financial Supervision Authority (Komisja Nadzoru Finansowego, KNF) aimed at maintaining the ability of credit institutions to finance the economy at the expense of increased systemic risk as well as bank proposals prepared by the Polish Bank Association (Związek Banków Polskich, ZBP), were inventoried. The time horizon of empirical analyzes ends with data from May 20, 2020, with the monthly financial data of the banking sector published by the NBP and the KNF covering the period back up to March 31, 2020.

1. The impact of the COVID-19 pandemic on socio-economic systems

Historical experience shows that every epidemic, and especially a pandemic[2], similarly to other random events with have a huge impact on the internal, external or even global environment (so called "black swans"), is characterised by both their unpredictability and difficulty in surmounting. Every pandemic is accompanied by growing social unrest, sometimes generating panic among the public and policymakers[3]. They expose the powerlessness of medicine in the face of a new disease at the same time rapidly and significantly changing the social or economic situation, affecting even the political situation of infected nation/s[4].

[2] C. Duncan, S. Scott, *Czarna śmierć epidemie w Europie od starożytności do czasów współczesnych*, Bellona, Warsaw 2020.

[3] W.J. Mckibbin, R. Fernando, *The Global Macroeconomic Impacts of COVID-19: Seven Scenarios*, CAMA Working Paper 19/2020, February 2020, https://www.researchgate.net/publication/339658337_The_Global_Macroeconomic_Impacts_of_COVID-19_Seven_Scenarios (access 16.04.2020).

[4] A. Havics, *A Look at COVID 19 in terms of 10. Economics*, A Post Paper Summary, 11.04.2020, https://www.researchgate.net/publication/340540337_Havics_A_Look_at_COVID_19_in_terms_of_10_Economics_2020_R3b_040920_Sec (access 26.04.2020); W.J. Mckibbin, A. Sidorenko, *Global Macroeconomic Consequences of Pandemic Influenza*, CAMA Miscellaneous Publications, February 2006, https://cama.crawford.anu.edu.au/sites/default/files/publication/cama_crawford_anu_edu_au/2017-02/26_mckibbin_sidorenko_2006.pdf (access 16.04.2020); G.W. Shannon, J. Willoughby, *Severe Acute Respiratory Syndrome (SARS) in Asia: A Medical Geographic Perspective*, Eurasian Geography and Economics 2004, No 45(5), pp. 371–372.

Scientific studies and specialist reports (e.g. by WHO) indicate links connecting the health of the population with social welfare, economic growth, and social and economic development[5]. The economic impacts of pandemics have been and are being analysed or studied on the global, regional, and even local scale. The focus is mainly on the analysis of economic results, including in particular changes in the volume and dynamics of GDP, various social consequences, as well as the effectiveness of projects undertaken to stop the spread of the disease and to mitigate its negative effects and aversive behaviours[6].

The experience of countries affected by COVID-19 shows that it affects the social and economic systems through[7]:

– a reduction in or slowing down of economic activity (production, distribution, commerce and services) on a macro scale, mainly related to the freezing of the economy and lockdown in certain industries or regions,
– a reduction in the consumption of goods and services as a result of preventive measures and morbidity (deaths, isolation, quarantine, social distancing, lack of access to distribution points, etc.),
– a disruption in the supply chain and the functioning of markets (e.g. due to restrictions or slowdowns in national and international transport, border closures) and a real or expected reduction in the population's income,
– the financial situation of enterprises – as a result of a decrease, postponement or change in the structure of demand, decrease in profitability of operations, liquidity problems related to freezing or delays in economic settlements, debt or increased investment risk,
– perturbations in financial markets (e.g. fall in prices of securities, mainly corporate shares and bonds, changes in interest rates, currency fluctuations, increased risk aversion, speculative actions and insolvency of debtors),
– a smaller stream of taxes and an increase in central and local government spending, leading to a budget deficit and public debt.

5 D.E. Bloom, D. Canning, J. Sevilla, *The Effect of Health on Economic Growth: Theory and Evidence*, NBER Working Paper No. 8587, Issued in November 2001, https://www.nber.org/papers/w8587.pdf (access 14.04.2020); D.E. Bloom, D. Canning, *Population Health and Economic Growth. Commission on Growth and Development*, Working Paper, No. 24, Washington, DC: World Bank 2008, https://openknowledge.worldbank.org/handle/10986/28036 (access 24.04.2020); *Health and Economic Growth, Findings and Policy Implications*, G. López-Casasnovas, B. Rivera, L. Currais (ed.), The MIT Press 2007; *Macroeconomics and Health: Investing in Health for Economic Development*. Report of the Commission on Macroeconomics and Health, World Health Organization 2001, https://apps.who.int/iris/bitstream/handle/10665/42435/924154550X.pdf;sequence=1 (access 10.04.2020).

6 *World Bank Group. 2014. The Economic Impact of the 2014 Ebola Epidemic: Short- and Medium-Term Estimates for West Africa.* Washington, DC: World Bank 2014, https://openknowledge.worldbank.org/handle/10986/20592 (access 12.04.2020).

7 D. Bachman, *The economic impact of COVID-19 (novel coronavirus)*, https://www2.deloitte.com/us/en/insights/economy/COVID-19/economic-impact-COVID-19.html (access 21.03.2020); D. Evans, M. Over, *The Economic Impact of COVID-19 in Low- and Middle-Income Countries*, https://www.cgdev.org/blog/economic-impact-COVID-19-low-and-middle-income-countries (access 20.03.2020); A. Haughton, *Combat The Economic Impact Of COVID-19*, http://jamaica-gleaner.com/article/news/20200325/combat-economic-impact-COVID-19 (access 31.03.2020).

These general trends and patterns coexist with others in some market niches, especially those related to preventing or combating the effects of the pandemic.

The management and containment of the pandemic involves the introduction of a number of restrictions, including international ones, which result in a drop in economic activity and employment as a result of the freezing of the economy (see Table 1). When the economy is frozen, steps are taken to ensure the financial stability of businesses and households, and to improve the chances of a rapid rebound through economic recovery. It is a difficult and complex task to maintain the financial liquidity of companies, without which some of them will not be able to continue their activities. The latter task, with appropriate regulations, concerns the banking sector in particular. Stopping and then gradually reducing peak morbidity and mortality enables selective relaxation of social distancing restrictions and defrosting of the economy. After a pandemic has eased, or management of the spread of the disease has been ensured in a given country, a recovery phase begins.

Making up for lost income is not possible to achieve to the same extent in all sectors, and in many cases proves simply impossible, including tourism, catering, recreation, transport, culture and art. However, retail or manufacturing industries that are able to make up for most of the lost benefits once they resume activity ought to be in quite a different position, provided that consumers will not adopt a saving attitude in case of a relapse. Actions supporting weakened demand by households and entrepreneurs, as well as alleviating the social and economic effects of unemployment caused primarily by the financial situation of employers, are particularly important during unfreezing and after lockdown. All the more so because some entrepreneurs reduce or delay investments, or the use of business support services, not only as a result of shrinking demand, but also due to uncertainty, payment congestion or difficulties in obtaining external financing.

The return of the economy to its pre-pandemic state is conditioned in many ways, and in the pessimistic scenario it may take several years. During this period, many changes are to be expected in the economic, fiscal and budgetary policies as well as in business activities, including business models and strategies. Changes in the structure of consumption needs and social behaviour are similarly highly likely.

One of the basic conditions for *ex ante* crisis management of an epidemic/pandemic is the adoption of different transmission scenarios based on simulation results, both in terms of the number of infected persons and their characteristics, including territorial distribution with disease intensity, and in terms of duration. Analytical methods and instruments based on epidemiological models are available for this purpose, one of the most popular of which is the Susceptible Infected Resistant (SIR) model[8].

[8] COVID-19 transmission is most commonly predicted using one of the simplest epidemiological models – the Kermack-McKendrick SIR model. A. Bartłomiejczyk, M. Wata, *Analizy epidemiologiczne w środowisku matlab/octave*, Zeszyty Naukowe Wydziału Elektrotechniki i Automatyki PG nr 65, Gdańsk 2019, pp. 12–13.

Table 1. Periodisation and systematisation of prevention, anti-pandemic and post-pandemic actions or interventions in the process of stabilizing the socio-economic system

SPECIFICATION	OUTBREAK COUNTRY		CROSS BORDER EXPAN-SION	EPIDEMIC/PANDEMIC			POST-PANDEMIC RECOVERY
PERIOD OF TIME	n_0	n_0+e_0	n_0+e_{0+K}	$n_0 + e_{0+K+L}$			$n_0 + e_{0+K+L+P}$
STAGES	Symptoms	Development	Transfer	Symp-toms	Development & spread	Fighting & blanking	Disappearance & control
FUNCTION OF THE STATE	Guardian of order	Market regulator	Cross--border co-operation	Guardian of order	Market regulator and ultimate insurance / payer of last resort		Guardian of order, facilitator of changes, market regulator
INTERESTS AT STAKE	Life & Health / Continuity of economic activity and effective functioning of the state in various fields						
	--------------	Viability of businesses / Income of shareholders and bondholders / Interest of creditors					
	--				Individual subsistence		-------------------------------------
EPIDEMIC/ PANDEMIC	Monitoring and refraining	Freezing and lockdown	Monitoring and refraining		Freezing and lockdown	Refreezing and release	Back to normality reorganisation
TYPE OF INTE-RVENTION/ ACTIONS	Medical and social preven-tion; resource security & mobilization of anti-epi-demiological potential	Normative limits and restrictions of economic acti-vity and mobili-ty; suspension of institutions and social distancing, curfews	Medical and social prevention; resource security & mobiliza-tion of anti-epide-miological potential; isolation of outbreaks, closing internal and state borders		Normative limits or alleviation of duties under insolvency law, moratoria on contractual obliga-tions, limitation on termination of leases, other restrictions of economic activity and mobility; suspension of institutions, social distancing; state of emergency	Selective adjust-ment of pandemic rigours according to health of the population in regions and states, the effectiveness of medical care and health service infrastructure other refreezing and unlockdown	Removing or mitigating the ef-fects of a pandemic, including coming out of the economic crisis, introducing system reforms conditioned among others by implementing and spread of medical technology that protects against infections as well as gathering financial, human and material resources under political consensus

Table 1 – continued

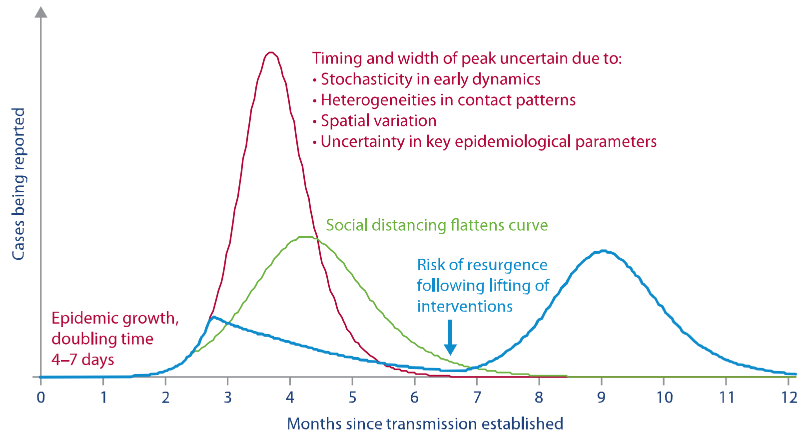
SPECIFICATION	OUTBREAK COUNTRY		CROSS BORDER EXPANSION	EPIDEMIC/PANDEMIC			POST-PANDEMIC RECOVERY
OUTCOMES	Social unrest and pre-crisis behaviour of consumers, employees and employers according to specific circumstances	Segregation of businesses operating in epidemic mood, including remote operating mode and temporarily suspended in operation or closed.	Crossborder and international exchange of epidemic information, coordination and cooperation in actions	Social unrest and pre-crisis behaviour of consumers, employees and employers according to specific conditions	Deliberate segmentation of businesses and institutions operating in epidemic mood, including remote work and suspended (closed); Substituting the market through: bailouts, subsidies, loans, guarantees, direct cash handouts; Economic segregation by profit and loss, including bankruptcies caused by shrinking demand or payment gridlocks; implementing new financial products	Caching the normative effects of restrictions, occupational and economic activity by financial and fiscal help packages as well as public and private stimulatory financing aimed at neutralizing market shocks, both for internal and external (foreign) demand.	Structural and ownership changes due to financial strengths of owners and investors; increasing role of digitization, computerization, Internet, and modified status of indirect production workers, with special attention to remote communication, state budget remediation and increasing role of the public and state entities in social security services; modification of consumption patterns, including housing

Explanations:
n_0 – country outbreak period (for COVID-19 November 2019);
e_0 – epidemic period in the outbreak country (in weeks, months, quarters or years due to specific character (f.e. COVID-19: 1–3 months);
K – spread period to other countries, regions or continents, counted as for e_0, where $K > 0$ (f.e. COVID-19: > 2 months);
L – pandemic period in countries, regions or continents after K period, where $L > 0$ (f.e. COVID-19: 3–6 months);
P – period after K + L (f.e. COVID-19: forecast > 12 months).

Source: own study.

The SIR model has been used in several countries to simulate the development of COVID-19[9]. Three development options for the COVID-19 pandemic, depending on the means of intervention used, are illustrated in Figure 1.

Figure 1. Simulated transmission model of COVID-19



Source: R.M. Anderson, H. Heesterbeek, D. Klinkenberg, T. Deirdre Hollingsworth, *How will country-based mitigation measures influence the course of the COVID-19 epidemic?*, The Lancet, March 2020, vol. 395, pp. 931–935, https://www.thelancet.com/action/showPdf?pii=S0140-6736%2820%2930567-5 [access 20.04.2020].

The red line in Figure 1 illustrates the course of the pandemic with quarantine as the only measure of control. In this scenario, the number of patients increases rapidly in a short period of time, which leads to a slimmer disease curve and a shorter duration pandemic. The green line reflects the number of infections with various prevention and mild distancing measures in place throughout the epidemic (quarantine, restriction of personal mobility and use of public transport, closure of educational institutions and certain enterprises, ban on mass events). In this prevention scenario, the course of the epidemic is different: the growth in the number of patients is slower, there are fewer patients at the peak of the disease, but the duration of the epidemic is noticeably longer. The blue line assumes very strict

9 A. Atkeson, *What Will Be the Economic Impact of COVID-19 in the US? Rough Estimates of Disease Scenarios*, NBER Working Paper No. 26867, March 2020, https://www.nber.org/papers/w26867 (access 16.04.2020); C.A. De Castro, *SIR Model for COVID-19 calibrated with existing data and projected for Colombia*, 24.03.2020 https://arxiv.org/pdf/2003.11230.pdf (access 16.04.2020); M. Batista, *Estimation of the final size of the coronavirus epidemic by the SIR model*, University of Ljubljana, Slovenia, February 2020, https://www.researchgate.net/publication/339311383_Estimation_of_the_final_size_of_the_coronavirus_epidemic_by_the_SIR_model (access 05.05.2020); Yi-Cheng Chen, Ping-En Lu, Cheng-Shang Chang, Tzu-Hsuan Liu, *A Time-dependent SIR model for COVID-19 with Undetectable Infected Persons*, http://gibbs1.ee.nthu.edu.tw/A_TIME_DEPENDENT_SIR_MODEL_FOR_COVID_19.PDF (access 13.05.2020).

prophylaxis and social distancing for a certain period of time, followed by a rapid alleviation of the restrictions leading to a revival of the epidemic and a significant extension of its duration.

The synthetically characterised scenarios present a range of options for national strategies aimed at combating epidemics. When selecting the right strategy, it is however essential to optimise human and public health losses, as well as the socio-economic costs. In addition, the selection of a corrective measures package will inevitably be influenced by the infrastructure and the health care potential, the condition of state finances and acceptable level of public debt, and, last but not least, the political situation in the country. The latter particularly concerns the authority or political power of the policy-makers. Any change of the epidemic management approach made during the epidemic, especially for non-medical reasons, gives rise to additional complications.

The chosen pandemic development scenario helps appropriately select and implement solutions to prevent or mitigate the health and socio-economic impacts. Historical experience shows that the socio-economic impact of a pandemic varies, depending on the course of the pandemic, including the speed of threat identification, the ways and extent of prevention, the type of mitigation actions taken, considering the available resources, including in particular the competence of staff and the financial resources that can be mobilised.

Despite the controversy about the communicability and effects of 2019-nCoV in terms of health and life[10], the prevailing view is that the scale of national destabilisation caused by COVID-19 exceeds the potential for self-rebalancing without serious consequences for the economy, people's lives and the well-being of society. These consequences can be seen in different sectors, industries or businesses as well as specific population groups or households. This is why the state and its agencies should intervene in a structured manner to cushion or limit the negative consequences of the pandemic[11].

As Table 1 shows, the state's actions in the legislative sphere and the efficiency of the government and its agencies in implementing programmes to reduce the effects of the epidemic play a key role here.

[10] See initial declarations of disregard for COVID-19 by key policy-makers (Belarus, Brazil, USA, Great Britain). In a broader sense, this relates to supporters of the concept of natural selection of weaker individuals, which can be eliminated from the population by 2019-nCoV. Some form of support for this approach was observed in the natural experiment on the impact of the 2019-nCoV virus on the passengers on board the Diamond Princess cruise ship, where about 20% of the 3,711 passengers and crew members were infected, 10% became ill and 0.16% of the population died.

[11] M. Lehmann, *Mothballing the economy and the effects on banks*, [in:] *Pandemic Crisis and Financial Stability*, C.V. Gortsos & W.-G. Ringe (eds.), European Banking Institute 2020, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3607930 (access 22.05.2020).

2. Channels of influence of COVID-19 on the banking sector

In the secular trend, social and economic development is accompanied by financial deepening or the financialisation of the economy[12]. This is why the financial sector, especially the banking sector, plays an increasingly important systemic role (mobilisation of savings, transformation of term and risk in lending processes, financial settlements, capital investments, financial investment risk hedging). Hence, the stabilisation and efficiency of the financial system, especially of banks, becomes of cardinal importance in crisis situations.

However, the first experiences from the COVID-19 crisis were unprecedented, mainly due to the extent and speed of the spread of the virus in a globalised world and the size and intensity of human mobility before its outbreak (compared to other 'great' pandemics). Although the circumstances surrounding the COVID-19 pandemic do not, in the short term, directly affect banking activities as negatively as other industries (e.g. manufacturing, commerce, transport, tourism and recreation or culture), or as positively (e.g. IT, internet commerce, telecommunications), the risk of its adverse consequences remains relatively high in the long term.

The direct impact of COVID-19 on the activities of banks is related, in particular, to the availability of staff[13], additional expenditure on operations and savings on these activities (see Table 2).

The direct impact of COVID-19 on the activities of banks is short-term in nature and is weakens as the pandemic eases. The consequences may be medium and long term, both for individual banks and for the stability of the banking sector. It is worth noting the changed risk of repayment of loans granted before the pandemic, the specific portfolio risk generated during the pandemic, and the restrictions on business activities. The special laws and regulations adopted under pressure of a potential crisis or catastrophic projections are particularly important here. Moreover, it is important to stress the political pressure or proprietary capacity of the state to financially support economic activity. In general, parliaments, governments, central banks or supervisors with traditional or innovative instruments for stimulating funding and cushioning the risk of banking sector destabilisation have both a direct and indirect impact on banking activity during a pandemic.

[12] R. Boyer, *Do Globalization, Deregulation and Financialization Imply a Convergence of Contemporary Capitalisms?* INCAS DP Series, Discussion Paper Series 2018 #09; G.F. Davis, S. Kim, *Financialization of Economy*, Annual Review of Sociology 2018, Vol. 41; M. Ratajczak, *Państwo a finansjalizacja*. Bezpieczny Bank 2020, no 1(78), pp. 9–20.

[13] Juggling childcare and professional duties is quite a challenge. Because of the coronavirus, half of the mothers are forced to cope with the dual role, according to a study conducted for the BIG InfoMonitor Debtor Register. One in two mothers admit that it causes them serious difficulties, and that taking care of children and a professional career at the same time leads to stress and anxiety about their position in the company. Still, working mothers classify cleaning and shopping, and not professional duties, as the most tiring chores. *Pracę i opiekę nad dzieckiem łączy połowa mam.* https://media.bik.pl/informacje-prasowe/516055/prace-i-opieke-nad-dziecmi-laczy-w-pandemii-polowa-mam-nie-jest-latwo (access 25.05.2020).

Table 2. The short-term impact of the COVID-19 pandemic on banking activities

Limited employee availability					**Additional expenditure on banking activity**				**Cost savings in banking activity**					
Absence			Risk aversion											
Lockdown[a]	Quarantine	Childcare exemptions	Emigration of foreign nationals	Other[b]	Epidemiological prevention and protection of operators	Remote working equipment for employees	Higher IT costs[c]	Other	Better use of e-banking potential	Lower media and infrastructure operating costs	Lower mission expenses	Lower material costs	Forced leave	Lower HR costs	Other

[a] – restricting or freezing local, regional, national and foreign labour mobility
[b] – increasing the number of sick leave days for coexisting diseases etc.
[c] – including securing communication with employees working remotely using public computer networks and the Internet, mitigating the increased risk of hacker or fraudster attacks
Source: own study.

Many banks are quite well prepared to deal with the current situation due to the experience of previous crises and reforms introduced on that basis, including restrictive prudential regulations and a supervisory infrastructure. Cooperation between regulators and supervisors and banks and financial institutions allows for quick reactions, including the provision of liquidity by the central banks. On the other hand, the financial standing of individual banks at the pandemic outbreak stage, the structure and quality of assets, and, above all, the economic situation of customers, will have a considerable impact on the diversification of the post-pandemic situations. This primarily concerns key borrowers, as well as the scale of losses incurred by other debtors. Thus, processes on both domestic and foreign financial markets[14] will be crucial. Confusion in the functioning of businesses and households will be particularly important, specifically in the following aspects:

[14] Financial markets were the first to react to media reports on COVID-19. An increase in the risk associated with the uncertainty about the infectivity and mortality of the new virus, as well as the expected economic slowdown and fall in profits, have resulted in a sharp fall in the prices of securities

- deterioration in the financial situation of companies leading to bankruptcy, caused by reduced use of production or service capacity, as well as price changes in commodity markets – as a result of a disruption to the supply chain, administrative closures or restrictions on activity, restrictions and delays in deliveries and domestic or foreign payments, social distancing forcing workers to stay at home[15], dramatic fall in consumption of certain goods and especially services (e.g. tourism and recreation, gastronomy, transport), fall in prices of raw materials (e.g. oil, copper, iron)[16],
- deterioration of the financial situation of households – as a result of a reduction or loss of income from work (e.g. resulting from reduced activity, temporary closure or bankruptcy of the employer, reduced wages),
- change in consumer and business moods and expectations leading to delay or cessation of investments and changes in the structure of consumer demand caused directly or indirectly by the pandemic or change in consumer preferences,
- deterioration in the sentiment of financial investors in global and domestic financial markets, a decrease in risk aversion or even panic, outflow of capital to less risky regions, sudden fall in security prices, changes in exchange rates, reduction in lending and/or increase in lending costs (debt market).

In the absence of spectacular bank failures, with the efficiency of deposit guarantee systems or resolution authorities, the bank run risk is relatively low. Nonetheless, banks that are relatively weakly capitalised, especially those based on short-term deposits in financing long-term loans, will face challenges in maintaining their deposit bases.

3. The general situation of the Polish banking sector and instruments for cushioning the effects of the pandemic

In the period immediately preceding the COVID-19 pandemic, the Polish banking sector was in a relatively good condition, although market processes and the nature of fiscal and regulatory burdens resulted in a relatively high diversification of the banks' situations, especially in terms of the profitability of operations and legal risk related to the so-called franchise loans[17].

(between 19 February and 23 March the S&P 500 index lost more than a third of its value and the Dow Jones Industrial Average went down by 36%). Capital has been moved towards safer assets as well as relatively safe places/countries/regions.

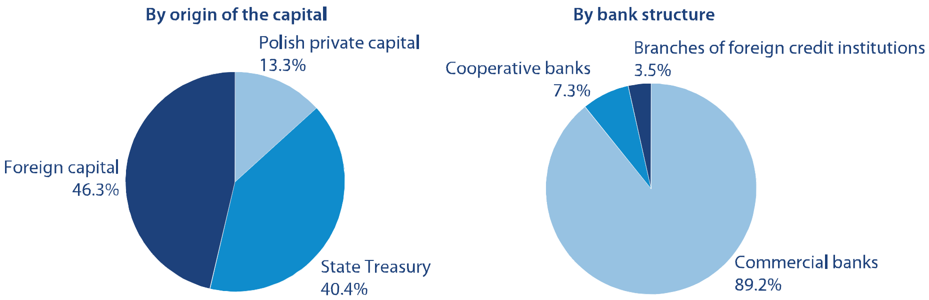
15 The travel ban has caused problems in the tourism and transport industry, restaurants and shops were closed, and many companies decided to lower wages or dismiss employees. Lending to the most vulnerable industries has become very risky.

16 The IMF's raw material price index has decreased by more than 21% over the last two months (from 119 points in January 2020 to 93 points in March 2020).

17 In November 2019, the Court of Justice of the European Union (CJUE) delivered a judgement in connection with questions referred for a preliminary ruling by the District Court of Warsaw concerning EU Directive 93/13 on unfair terms in consumer contracts. Having considered those questions, CJUE provided two solutions. First of all, a court may annul a credit agreement if it is convinced that the

At the end of February 2020, just before the pandemic, there were 598 banks operating in the Polish banking sector, including: 30 commercial banks, 535 cooperative banks (of highly diversified size and organisational structure)[18] and 33 branches of credit institutions (foreign banks). The banks had almost 156,000 employees and a network of more than 12,200 offices (branches, subsidiaries, agencies, representative offices). Over 40% of the banking sector's assets are held by 8 state-controlled commercial banks (see Figure 2).

Figure 2. Structure of the banking sector in Poland by asset value [as at 29 February 2020]



Source: Monthly data for the banking sector as at 29 February 2020, PFSA, https://www.knf.gov.pl/?articleId=56224&p_id=18 (access 13.05.2020).

The Polish banking sector is characterised by a great diversity of banks with regard to the scope of activities, organisation, as well as assets and capital – for example the balance sheet total of the smallest bank in the sector at the end of 2019 was PLN 27.9 million (a cooperative bank), while for the largest bank it was PLN 348,044 million (a commercial bank controlled by the State Treasury). At the end of December 2019, the banking sector generated a profit of PLN 14,230 million. 19 banks reported a loss of PLN 715 million (4 commercial banks and 15 cooperative banks). The net financial result at the end of February 2020 was 58.8% higher than the result achieved at the end of February 2019. Eleven banks, including 7 commercial banks and 4 cooperative banks, reported losses (PLN 184 million in total).

agreement cannot remain valid when the abusive clauses are eliminated. Secondly, a national court may uphold the agreement if performance thereof can continue after unacceptable indexation provisions are removed. In the event of unfavourable national court judgements, the consequences of the CJUE judgement for banks, according to the estimates of the Polish Bank Association, may reach even PLN 60 billion.

[18] In the entire period following the political transformation in Poland, cooperative banks have had a small but stable share in the banking market: assets approx. 7%, net result approx. 10%, loans 6%, and deposits from the non-financial sector approx. 10%. They operate the most extensive network of outlets (about 29% of all banking outlets in the country, employing about 21% of all banking sector employees). Moreover, they have a 32% share in deposits and 40% share in loans to local government units, and about a 58% share in lending to farmers.

The volume of loans for both enterprises and households in the first two months of 2020 increased by PLN 16.9 billion, and the volume of deposits by PLN 7.9 billion. However, the share of non-performing receivables in receivables from the enterprise and household sectors improved slightly compared to the end of 2019, mainly as a result of a decrease in non-performing receivables in the enterprise sector.

Taking into account the financial ratios, at the end of February 2020 the Polish banking sector enjoyed a relatively good financial situation: banks were solvent, and on average they had a high liquidity ratio, a low level of financial leverage, with an average profitability above the EU average. Despite the overall positive situation, several banks require the attention of their owners and supervisors and the readiness of the safety net link to use deposit guarantee or resolution instruments. This is particularly the case with distressed cooperative banks, which have very low or no emergency shareholder capital raising potential. The situation may prove equally dangerous in commercial banks with a relatively high share of the so-called franchise loans burdened with legal risk.

In Poland, the first COVID-19 case was recorded on 4 March 2020, and then the Polish government took drastic measures to combat the spread of the pandemic by freezing most business activity, closing down all educational facilities, schools and universities, cultural establishments, restaurants, and most shops, reintroducing border controls, restricting or banning entry into the country, and suspending international rail and air transport. The population was ordered to stay at home and avoid going out unless necessary under the penalty of high fines. Similarly to stock exchanges in the USA and other European countries, the Warsaw Stock Exchange recorded the most prominent one-day decline in its history – the WIG 20 index fell by 13.3%, and WIG by 12.6%[19]. Initially, the demand for cash increased.

Following the announcement of the pandemic by the WHO, the banking sector experienced significant cash withdrawals by customers fearing sanitary restrictions being put in place and lack of access to the money accumulated in their accounts. The value of currency in circulation has been increasing steadily and grew by 23% from the beginning of the year to mid-May this year (see Figure 3). Due to previously accumulated buffers, no threat to banks' liquidity occurred. In some branches of banks and ATMs, temporary operational problems have arisen, related to delays in the delivery of cash from the logistic centres of banks and cash handling companies. The situation has stabilised after a few days and withdrawal amounts have decreased, although they remained at higher levels[20].

[19] WIG Index – Warsaw Stock Exchange Index has been calculated since 1991 and includes shares of companies listed on the main market. WIG20 is the index of the 20 largest joint stock companies listed on the Warsaw Stock Exchange.

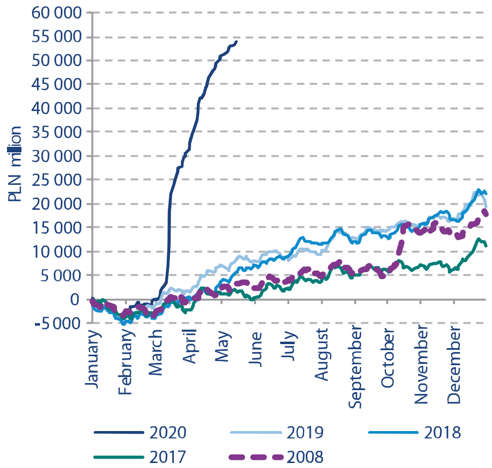
[20] Poles were recovering long-term deposits, and this was mainly due to the panic caused by the rumours that the government would freeze bank accounts similar to Cyprus' practice during the global financial crisis. *Polacy wystraszyli się plotek o niewypłacalności banków*, https://www.money.pl/pieniadze/polacy-wystraszyli-sie-plotek-o-niewyplacalnosci-bankow-nbp-na-rynku-przybylo-51-mld-zl-w-gotowce-6515725102798977a.html (access 31.05.2020).

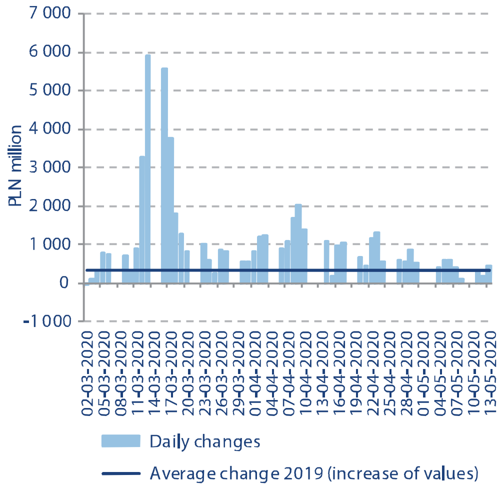
Table 3. Quantitative characteristics of the banking sector in Poland

Specification	Data as at				
	31/12/2019	29/02/ 2020	Growth rate	31/03/2020	Growth rate
	1	2	3=2:1	4	5=4:2
Balance sheet total (PLN million)	1,992,124	2,047,036	+ 2.76%	2,110,675	+ 3.11%
Loans to enterprises (PLN million)	383,200	389,268	+ 1.58%	401,599	+ 3.17%
Share of non-performing loans in loans to enterprises	8.50%	8.23%	- 0.27 p.p.	8.34%	+ 0.11 p.p.
Loans to households (PLN million)	740,007	750,492	+ 1.42%	759,036	+ 1.14%
Share of non-performing loans in loans to households	5.70%	5.75%	+ 0.05 p.p.	5.81%	+ 0.06%
Share of non-performing receivables in receivables from non-financial sector	6.66%	6.60%	- 0.04 p.p.	6.69%	+ 0.09 p.p.
Debt instruments (PLN million)	457,788	507,671	+ 10.9%	490,634	- 3.36%
Household deposits (PLN million)	832,668	849,039	+ 1.97%	863,392	+ 1.69%
Enterprise deposits (PLN million)	429,626	421,307	- 1.94%	435,274	+ 3.32%
ROE – calculated for 12 consecutive months	6.85%	7.12%	+ 0.27 p.p.	6.13%	- 0.99 p.p.
ROA – calculated for 12 consecutive months	0.72%	0.75%	+ 0.03 p.p.	0.64%	- 0.11 p.p.
TCR – Total Capital Ratio	19.1%	19.1%	NC	19.1%	NC
LCR – Liquidity Coverage Ratio	156.7%	162.7%	+ 6 p.p.	163.8%	+ 1.1 p.p.
Net interest margin	2.63%	2.63%	NC	2.63%	NC

Source: based on: *Financial data of the banking sector*, https://www.nbp.pl/home.aspx?f=/statystyka/ pieniezna_i_bankowa/naleznosci.html (access 20.05.2020); Monthly data of the banking sector, https://www.knf.gov.pl/?articleId=56224&p_id=18 (access 20.05.2020).

Figure 3. Currency in circulation: daily cumulative changes (left-hand panel) and daily changes since the beginning of March 2020 (right-hand panel)





Source: Financial Stability Report. Special Issue: impacts of the COVID-19 pandemic. NBP June 2020, p. 47, https://www.nbp.pl/en/systemfinansowy/fsr202006.pdf (access 15.06.2020).

The first pandemic development scenarios for Poland assumed that the pandemic would last slightly longer than in China (i.e. just over 3 months)[21].

At the end of March, compared to February 2020, total assets and loans to enterprises had increased by more than 3%, but the growth of loans to households was approx. 2 p.p. lower. On the other hand, the share of non-performing receivables in receivables from the non-financial sector increased. The decrease in receivables was caused by a decrease in the central bank's debt instruments (as a result of providing liquidity to the banking sector). ROE and ROA calculated for 12 consecutive months deteriorated, which denoted a 17.4% drop in the financial result compared to February 2020 and as much as 48.5% compared to March 2019. The analysis of the structure of the profit and loss account for the banking sector allows us to conclude that this decrease was caused primarily by an increase in provisions for receivables (57.5% compared to March 2019; 144.6% compared to February 2020). In March, as compared to February 2020, the operating profit of banks increased by 49.6%; including interest income by 50.9% and fee and commission income by 56.8%. At the same time, as compared to March 2019, net interest income increased by 6.8%, net fee and commission income by 11.5%, and operating income slightly decreased by 0.6% (due to an increase in other operating expenses). Yet another, third NBP interest rate cut in May 2020, as well as regulations concerning maximum loan costs, will be reflected in the financial results of the banks in the following months. And even though banks reduced deposit interest rates after the second interest rate cut (April 2020) to such a level as to preserve and even increase margins, the third cut in the reference rate to 0.1% has prevented such intentions.

The COVID-19 threat has been addressed by governments as well as the EU and national financial supervisors[22]. On 30 March, the Polish government presented a package of solutions aimed at protecting the economy and citizens from the effects

[21] M. Ważna, *Kiedy zakończy się pandemia koronawirusa SARS-CoV-2? Sprawdzamy, co mówią naukowcy,* https://www.medonet.pl/koronawirus/to-musisz-wiedziec,kiedy-zakonczy-sie-pandemia-koronawirusa-sars-cov-2--sprawdzamy--co-mowia-naukowcy,artykul,49208922.html (access 10.04.2020).

[22] Statements, guidelines and opinions for supervised financial market entities have been issued by: the European Banking Authority (EBA), the European Securities and Markets Authority (ESMA) and the European Insurance and Occupational Pensions Authority (EIOPA). For the banking sector, the EBA issued: *EBA statement on actions to mitigate the impact of COVID-19 on the EU banking sector,* 12 March 2020, https://eba.europa.eu/eba-statement-actions-mitigate-impact-COVID-19-eu-banking-sector (access 05.04.2020); *Statement on the application of the prudential framework regarding Default, Forbearance and IFRS9 in light of COVID- 19 measures*, 25 March 2020, https://eba.europa.eu/eba-provides-clarity-banks-consumers-application-prudential-framework-light-COVID-19-measures (access 05.04.2020); *Statement on actions to mitigate financial crime risks in the COVID-19 pandemic, Statement on dividends distribution, share buybacks and variable remuneration, Statement on supervisory reporting and Pillar 3 disclosures in light of COVID-19*, 31 March 2020, https://eba.europa.eu/eba-provides-additional-clarity-on-measures-mitigate-impact-COVID-19-eu-banking-sector (access 05.04.2020); *Guidelines on legislative and non-legislative moratoria on loan repayments applied in the light of the COVID-19 crisis,* 02 April 2020, https://eba.europa.eu/regulation-and-policy/credit-risk/guidelines-legislative-and-non-legislative-moratoria-loan-repayments-applied-light-COVID-19-crisis (access 05.04.2020).

of the pandemic, i.e. the so-called anti-crisis shield[23], which had been extended or modified three times by the end of May 2020. Liquidity measures of the NBP were incorporated in the anti-crisis shield. As part of the solutions for ensuring the availability of financing, the NBP has:

- cut interest rates three times,
- reduced the required reserve ratio from 3.5% to 0.5%,
- introduced a programme for the purchase of financial assets (Treasury bonds, Treasury guaranteed bonds and Treasury bills) on the secondary market as part of structural open market operations (PLN 55 billion worth of Treasury bonds were purchased in March),
- introduced modifications to repurchase operations in order to adjust the amount of money to the needs of the economy,
- launched a discount credit program for refinancing loans granted to entrepreneurs by banks.

Proposals by European Union institutions were reflected in solutions proposed by the Polish Financial Supervision Authority (KNF) aimed at preserving the sector's ability to finance the economy[24]. These in some cases included delaying the implementation of prudential regulations, and in others allowed for a relaxation of prudential standards generating an increase in banking risk (Table 4).

[23] The anti-crisis shield is based on five pillars: 1) protection of workplaces and employee safety, 2) financing of entrepreneurs, 3) health protection, 4) strengthening of the financial system, 5) public investments. The estimated value of the support is PLN 212 billion (approx. 10% of GDP).

[24] SSP – Supervisory Stimulus Package for Security and Development to support the banking sector. https://www.knf.gov.pl/dla_rynku/Koronawirus_informacje_dla_podmiotow_nadzorowanych (access 06.04.2020).

Table 4. Description of supervisory solutions for the banking sector in Poland in response to COVID-19

Purposes	Means of implementation
Group 1 : Provisions and classification of credit exposures	
– maintaining the banks' ability to meet the customers' financial needs – creating a foundation for solutions protecting indebted customers – reducing the negative impact of provisions and write-offs/write-downs on the financial situation of banks – enabling banks to take advantage of the overall pandemic situation in their relations with clients and external institutions	– no obligation to reclassify credit exposures for entities from industries particularly affected by the pandemic (micro, small and medium-sized enterprises and individuals, including those who have lost their jobs) in the event of a change in the loan repayment schedule – delayed implementation of Recommendation R *concerning the principles of credit risk management and recognition of expected credit losses* – postponed implementation date for Recommendation S *concerning good practices in the management of credit exposures backed by mortgages* until 30 June 2021 – extension of loan collateral utilisation dates for the purpose of reducing the specific reserve basis – extension of the group of 'special credit repayment guarantees' applicable to customers who have become temporarily uncreditworthy (to include guarantees from state institutions) – introduction of regulations allowing banks to extend loan maturity or otherwise modify the terms of loans to SME customers
Group 2: Capital buffers	
– enabling banks to offer their customers shielding solutions – maintaining banks' ability to finance customers	– revocation of the systemic risk buffer – supervisory acceptance of temporary bank operations below the combined buffer requirement – supervisory authorities allowing changes in the structure of the add-on Pillar 2 Requirement (P2R) and enabling fulfilling this requirement to a lesser extent by Tier 1 (CET1) equity – declaration that the KNF will considered the possibility of using or reducing another systemically relevant institution's buffer (the O-SII buffer) – recommendation to retain all the profit generated by the banks in 2019 (including non-payment of dividends)
Group 3: Liquidity standards	
– customer service and money circulation while maintaining depositors' security	– a case-by-case supervisory approach to the liquidity buffer (also when the bank's LCR falls below regulatory standards)

Table 4 – continued

Purposes	Means of implementation
Group 4: Ongoing supervision	
– banks to focus on customer service and key processes as well as current operations	– limitation or suspension of supervisory activities that burden banks in terms of personnel or organisation, including inspections – deferral of supervisory reporting obligations (e.g. review outside reporting obligations, collecting information for supervisory review and assessment) – supervisory authorities taking the pandemic into account when deciding on postponements and updates to recovery plans and other obligations by banks – deferring the deadline for banks to comply with the EBA guidelines on outsourcing

Source: own study based on information from: https://www.knf.gov.pl/en/MARKET/Coronavirus_Information_for_supervised_entities (access 20.04.2020); Regulation of the Minister of Finance of 16 April 2020 amending the Regulation on the principles of creating provisions for the risk related to the activity of banks, Journal of Laws of 17 April 2020, item 687; Act of 16 April 2020 on special support instruments in connection with the spread of SARS-CoV2, Journal of Laws of 17 April 2020, item 695; Act of 31 March 2020 amending the Act on special measures related to the prevention, neutralisation and combating of COVID-19, other infectious diseases and the consequent crisis situations, Journal of Laws of 31 March 2020, item 568; Act of 2 March 2020 on special measures related to the prevention, neutralisation and combating of COVID-19, other infectious diseases and the consequent crisis situations and certain other acts, Journal of Laws of 7 March 2020, item 374; Regulation of the Minister of Finance of 18 March 2020 repealing the Regulation on the systemic risk buffer, Journal of Laws of 18 March 2020, item 473.

In addition, legislative changes have been made in order to:

- enable remote management of companies, including: participation in management board meetings, supervisory board meetings, shareholders' meetings, and general meetings using electronic means of communication[25],
- extend the reporting deadlines, including in terms of preparation, approval and publication of annual financial statements, deadline for submission of issuers' quarterly reports, deadline for holding a general shareholders' meeting[26],
- extend the deadlines for preparing and submitting tax settlements for 2019[27],
- allow the suspension of time limits in judicial or administrative proceedings, also conducted by the KNF[28].

[25] Act of 31 March 2020 amending the Act on special measures related to the prevention, neutralisation and combating of COVID-19, other infectious diseases and the consequent crisis situations and certain other acts, Journal of Laws of 31 March 2020, item 568, Article 27.

[26] Regulation of the Minister of Finance of 7 April 2020 on setting new deadlines for the performance of certain reporting and information obligations, Journal of Laws of 7 April 2020, item 622.

[27] Regulation of the Minister of Finance of 31 March 2020 on the extension of deadlines for preparing and submitting certain tax information, Journal of Laws of 31 March 2020, item 563.

[28] The deadlines for administrative proceedings conducted by the PFSA were unfrozen on 25 May 2020. *Komunikat ws. „odmrożenia" terminów w postepowaniach administracyjnych prowadzonych przez Ko-*

A number of solutions to help borrowers with financial difficulties were also proposed by the Polish Bank Association (ZBP). Within the framework of the existing regulations and the financial instruments made available by the public sector, the banks have taken measures to support their customers, for example by offering:

- the option to defer (suspend) the repayment of interest or capital instalments (leasing instalments, factoring fees) for up to 6 months for both individual clients and enterprises due to their difficult financial situation caused by the COVID 19 pandemic,
- extension by 6 months of financing for enterprises (renewal of working capital and transaction loans), who were creditworthy at the end of 2019, were affected by COVID-19, and whose financing agreement will expire in the coming months – at their request,
- free submission and processing of applications and simplification of procedures – remote submission of applications, no need to submit additional documents and certificates,
- financing for micro and SME enterprises with the use of commission-free de minimis guarantees from the State Bank Gospodarstwa Kredytowego through 'special collaterals', which constitute 80% of the loan amount,
- accepting micro and SME applications for support, 50% of which is a financial subsidy,
- distribution of national and EU funding to support businesses, farmers and local authorities affected by COVID-19,
- increasing credit card and contactless payment limits.

In addition, in March 2020 the ZBP put forward a proposal to change or temporarily reduce the external burden due to the need to mitigate the effects of the COVID-19 pandemic. These included:

- transferring of 50% of the tax on financial institutions paid by banks to the Bank Guarantee Fund (Bankowy Fundusz Gwarancyjny, BFG),
- suspending, for a minimum of 1 year, the application of bank tax on exposures to customers whose business has been affected by the coronavirus, as well as on assets held by banks in the NBP (deposits, nostro, money bills),
- creating an asset management fund (from the fees paid to the BFG to date), the aim of which would be to help banks with financial difficulties resulting from the coronavirus pandemic, to counteract the spread to other banks in the Polish banking sector,
- adapting prudential solutions for banks to the ongoing pandemic,
- creating sub-portfolios of coronavirus-affected loans in banks and allowing banks to periodically reduce the level of provisions/write-offs/write-downs for this portfolio,
- suspending the Act on payment backlogs in terms of tax consequences.

misję Nadzoru Finansowego, https://www.knf.gov.pl/knf/pl/komponenty/img/Komunikat_ws_odmrozenia_terminow_w_postepowaniach_administracyjnych_prowadzonych_przez_KNF.pdf (access 20.05.2020).

4. The impact of COVID-19 instruments on banks in Poland

Banks are not willing to take on excessive risk or additional costs[29] and try to minimise the pandemic-related effects of a possible insolvency of borrowers[30]. This assessment results partly from information obtained by the NBP from a survey conducted among chairpersons of credit committees[31]. Banks tightened their credit policies in all customer segments as early as March 2020 (see Table 5) and focused mainly on supporting customers with a stable business model and, in the lender's opinion, have only temporary financial problems caused by COVID-19[32]. Such a strategy was also conditioned by the decision of the Monetary Policy Council to reduce interest rates, which entailed the reduction of the maximum interest rate on credit cards debt (reference rate plus 3.5%) and consumer loans with a variable interest rate [2 x (reference rate plus 3.5%)]. In addition, an algorithm for calculating the cost of consumer credit and its maximum limit (the total non-interest-bearing costs of consumer credit may not exceed 45% of the value of the credit) has been introduced[33]. Thus, the sale of new loans has become less profitable for banks.

The main reason for tightening bank lending policies was the risk of a deteriorating economic situation in Poland and an increase in NPL (non-performing loans). As far as enterprises are concerned, in the first quarter of 2020 banks reported a weakening demand for loans to large enterprises. On the other hand, the demand for loans to SMEs varied between banks. The banks' projections for the second quarter of 2020 show a significant drop in demand for loans for all enterprises (also

[29] However, this leads to new regulations, which sometimes strongly affect the banks' finances. The government's draft act on the so-called shield 4.0 provides for the possibility of suspending the repayment of capital and interest at the request of persons who lose their jobs or other main source of income for a period of 3 months without any validity date, as well as the possibility of verifying the situation of the borrower or the purpose of the loan. Banks estimate that the costs of this solution may range from PLN 1 to 1.5 billion. The concept of suspending loan agreements is unknown in Polish law and has tax implications for the beneficiary. At the same time, if operational issues are not solved, an obligation may be imposed on banks to create provisions for past due receivables.

[30] D. Szymański, *Banki robią to, przed czym ostrzegano od dawna. „Musimy się zabezpieczyć”*, publication date 16 April 2020, https://businessinsider.com.pl/firmy/zaostrzanie-akcji-kredytowej-trudniej-o-kredyt-w-banku-analiza-polityki-insight/qcvbjlx (access 13.05.2020).

[31] The survey was conducted in mid-April 2020 among 24 banks with a total share of loans to enterprises and households in the banking sector portfolio of 87%.

[32] According to the data of the Credit Information Bureau (Biuro Informacji Kredytowej, BIK), as at May 25, 2020, the amount of suspended liabilities on account of loans of individual customers and micro-enterprises constituted approx. 10% of the value of the banking sector credit portfolio. However, the suspension of credit instalments does not always involve a simultaneous extension of the loan period. In 1/3 of cases, the loan service period remains unchanged, while in the remaining cases it is extended, usually by 3 months. *BIK raportuje strukturę zawieszenia (odroczenia) spłaty rat kredytowych*, https://media.bik.pl/informacje-prasowe/518015/bik-raportuje-strukture-zawieszenia-odroczenia-splaty-rat-kredytowych (access 28.05.2020).

[33] Act of 31 March 2020 amending the Act on special measures related to the prevention, neutralisation and combating of COVID-19, other infectious diseases and the consequent crisis situations and certain other acts, Article 8d.

due to tightened lending criteria)[34]. In the case of loans to households, the demand for residential mortgages increased in the first quarter, while the demand for consumer loans decreased. The second quarter is expected to see a steep decline in demand for loans to households[35]. Moreover, none of the surveyed banks envisage relaxing the credit policy, all of them plan to tighten it even further – in the case of loans to households to a significant extent.

Table 5. Changes in bank lending policies related to the effects of the COVID-19 pandemic

Loans to enterprises	Loans to households
– reduced maximum loan amount – increased credit collateral requirements – suspension of granting new loans to companies with unsatisfactory financial results at the end of 2019 – limited lending to companies in industries most vulnerable to the pandemic (e.g. tourism, catering and accommodation, transport, sport and recreation, culture and entertainment, commerce, car and car part sale and manufacturing) – increased risk monitoring for companies from industries dependent on imports from China (e.g. chemical, automotive, furniture, pharmaceutical, electronics and home appliances).	– increased borrower's own contribution for residential mortgage – increased credit margin and collateral requirements – increased fees and commissions for consumer loans – reduced maximum loan amount and period for consumer loans, – suspended new lending to the self-employed, especially in the sectors most affected by the pandemic (services, transport, commerce, advertising, marketing) – limited financing of foreign entities.

Source: based on: *Senior loan officer opinion survey on bank lending practices and credit conditions,* 2nd quarter 2020, NBP Financial Stability Department, Warsaw, April 2020, https://www.nbp.pl/en/systemfinansowy/kredytowy2_2020_en.pdf (access 16.05.2020); M. Kunica, *O kredyt będzie trudniej. "Czas beztroskiego konsumeryzmu w Polsce się skończył" – ostrzega prezes największego banku w Polsce*, 4 April 2020, https://businessinsider.com.pl/ finanse/makroekonomia/prezes-pko-bp-zbigniew-jagiello-o-kryzysie-zwiazanym-z-koronawirusem-COVID-19/5rrfdg4 (access 20.04.2020).

Interestingly, there is a conflict of interest related to the government's desire to develop lending activities that support economic activity during the pandemic and recovery from the recession caused by the COVID-19 pandemic, but also to tightening of bank lending policy, due to the reduction of their profitability with increasing risk and, at the same time, the calculation of bank tax on asset value.

[34] With the exception of short-term loans to large companies, where the demand is expected to increase.

[35] Especially since, in the case of mortgage loans, banks increased own contribution already in March, e.g. PKO Bank Polski and Pekao Bank Hipoteczny increased own contribution from 10% to 20%, ING Bank Śląski from 20% to 30%, and Bank Ochrony Środowiska temporarily requires as much as 40% of own contribution.

Last but not least, the almost figurative level of interest rates – after the last reduction of the NBP reference rate to 0.1% – places many small cooperative banks in a very difficult position, as their income depends mostly on interest income indexed to reference rates. Moreover, the focus on serving local leisure and recreation businesses (e.g. in seaside or mountain resorts) from client portfolios during lockdown will have a significant impact, at least in the short term, on the banks' financial situation. According to experts' assessments, in a relatively short period of time this will result in crisis consolidation in the cooperative banking sector.

Final remarks

Both scientific research and practical experience show that a crisis management system comprising at least four components is of paramount importance for the course and consequences of a pandemic. The first component concerns the preparation well in advance of the necessary material and human resources, especially staff with appropriate competences (knowledge, skills, attitudes), and implementation procedures resulting from the anticipated variant scenarios. The second one involves advanced monitoring of the situation on a local, regional and national scale, and efficient exchange of information under cross-border arrangements, and on an international and global scale. The third one is the readiness and responsibility of national policy-makers and international bodies to respond promptly and appropriately to information or warnings about epidemiological risk. The fourth one concerns cooperation and collaboration on a global scale in preventing and combating the pandemic. Unfortunately, this knowledge was not properly used to prevent the pandemic, so that the 2019-nCoV coronavirus virus infected the global village at an unprecedented rate.

Despite the fact that since the global financial crisis of the first decade of the 21st century the level of capital and liquidity in Polish banks, almost unaffected at that time, has far exceeded the regulatory and prudential minima, and the results of stress tests carried out in recent years have shown that banks are basically immune to negative external shocks that may slow down economic growth, it is difficult to assess at this stage of the pandemic whether this is a sufficient to ensure survival through a recession and potential crisis without external assistance. However, unlike during the global financial crisis, the impact of COVID-19 on socio-economic systems and on the stability of the banking system only marginally depends on banks.

The factors limiting the negative consequences of social distancing restrictions on banks' operations are primarily the computerisation of operations and a relatively high level of development of electronic banking, which, unlike in many other sectors, allows for the relatively undisturbed provision of financial services. It is difficult to clearly estimate the balance of savings and additional expenditure due to pandemic regulations and special operating conditions. Similar conditions can be observed in the assessment of possible changes in work organisation and productivity[36].

The direct impact of the pandemic on banks is short-term in nature and will cease as the pandemic expires. However, the experience of the banks' activity under the pandemic regime may stimulate serious changes in their functioning in the long term (e.g. change of business model, segmentation of employment with separated remote work posts, strengthening and development of remote communication with customers, popularisation of non-cash trade, reduction of costs of operating traditional infrastructure or other overheads). The analyses carried out show that the solutions applied to induce banks in Poland to provide liquidity or financing to businesses and households do not bring the expected results. They are largely focused on the NBP's operations in providing liquidity to the banking sector through repurchase transactions or purchase operations of Treasury securities and Treasury guaranteed debt securities. Considering the very good liquidity of the banks, this is a pre-emptive measure to stabilise and limit the scale of a potential liquidity crisis. However, the actions taken by the government lack incentives for banks to increase lending. This includes mitigating the negative impact of loans with a high pandemic-related risk on the banks' wealth and financial situation, e.g. by reducing the tax burden. This encompasses a reduction of the bank tax base for exposures to customers whose activities have been affected by COVID-19 or the inclusion of specific provisions for receivables from this group of customers as deductible costs. In a certain sense relatively low social capital in Poland is one of the barriers to the effectiveness of the adopted stimulus packages. As a consequence, there are solutions that increase transaction costs (formal requirements and regulatory failures), including extended funding acquisition periods.

Different courses of the epidemic in particular regions of the country or voivodeships may be a premise not only for the appropriate withdrawal of restrictions and unfreezing of the social and economic system, but also for profiling of the banks' credit policy towards borrowers from the given areas.

The pessimistic scenario involves a recurrence of the pandemic due to inadequate responses in terms of the pace and extent of lifting restrictions and prevention procedures, including social distancing (without adequate medical resources, especially a vaccine) resulting in a decision to re-freeze the socio-economic system. Such a scenario can be considered disastrous for the national financial system, including banks in Poland. However, a question arises as to whether, in the event of a relapse of an epidemic/pandemic, policy-makers would introduce similarly restrictive solutions.

[36] For example: in Poland, new or additional employee duties resulting from the distribution of benefits under aid schemes and packages adopted by Parliament were not compensated for by a fee or compensation for such services.

References

Anderson RM., Heesterbeek H., Klinkenberg D., Deirdre Hollingsworth T., *How will country-based mitigation measures influence the course of the COVID-19 epidemic?*, The Lancet, March 2020, vol. 395, https://www.thelancet.com/action/showPdf?pii=S0140-6736%2820%2930567-5 (access 20.04.2020).

Atkeson A., *What Will Be the Economic Impact of COVID-19 in the US? Rough Estimates of Disease Scenarios*, NBER Working Paper No. 26867, March 2020, https://www.nber.org/papers/w26867 (access 16.04.2020).

Bachman D., *The economic impact of COVID-19 (novel coronavirus)*, https://www2.deloitte.com/us/en/insights/economy/COVID-19/economic-impact-COVID-19.html (access 21.03.2020).

Bartłomiejczyk A., Wata M., *Analizy epidemiologiczne w środowisku matlab/octave*, Zeszyty Naukowe Wydziału Elektrotechniki i Automatyki PG no 65, Gdańsk 2019.

Batista M., *Estimation of the final size of the coronavirus epidemic by the SIR model*, University of Ljubljana, Slovenia, February 2020, https://www.researchgate.net/publication/339311383_Estimation_of_the_final_size_of_the_coronavirus_epidemic_by_the_SIR_model (access 05.05.2020).

Bloom D.E., Canning D., Sevilla J., *The Effect of Health on Economic Growth: Theory and Evidence*, NBER Working Paper No. 8587, Issued in November 2001, https://www.nber.org/papers/w8587.pdf (access 14.04.2020).

Bloom D.E., Canning D., *Population Health and Economic Growth. Commission on Growth and Development*, Working Paper, No. 24. World Bank, Washington, DC: World Bank 2008, https://openknowledge.worldbank.org/handle/10986/28036 (access 24.04.2020).

Boyer R., *Do Globalization, Deregulation and Financialization Imply a Convergence of Contemporary Capitalisms?* INCAS DP Series, Discussion Paper Series 2018, #09.

Davis G.F., Kim S., *Financialization of Economy*, Annual Review of Sociology 2015, Vol. 41, pp. 203–221.

De Castro C.A., *SIR Model for COVID-19 calibrated with existing data and projected for Colombia*, 24.03.2020 https://arxiv.org/pdf/2003.11230.pdf (access 16.04.2020).

Duncan C., Scott S., *Czarna śmierć epidemie w Europie od starożytności do czasów współczesnych*, Bellona, Warsaw 2020.

Havics A., *A Look at COVID 19 in terms of 10. Economics*, A Post Paper Summary, 11.04.2020, https://www.researchgate.net/publication/340540337_Havics_A_Look_at_COVID_19_in_terms_of_10_Economics_2020_R3b_040920_Sec (access 26.04.2020).

Health and Economic Growth, Findings and Policy Implications, G. López-Casasnovas, B. Rivera, L. Currais (ed.), The MIT Press, 2007.

Lehmann M., *Mothballing the economy and the effects on banks*, [in:] *Pandemic Crisis and Financial Stability*, C.V. Gortsos & W.-G. Ringe (eds.), European Banking Institute 2020, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3607930 (access 22.05.2020).

Mckibbin W.J., Fernando R., *The Global Macroeconomic Impacts of COVID-19: Seven Scenarios*, CAMA Working Paper 19, February 2020, p. 7.

https://www.researchgate.net/publication/339658337_The_Global_Macroeconomic_Impacts_of_COVID-19_Seven_Scenarios (access 16.04.2020).

Mckibbin W.J., Sidorenko A., *Global Macroeconomic Consequences of Pandemic Influenza*, CAMA Miscellaneous Publications, February 2006, https://cama.crawford.anu.edu.au/sites/default/files/publication/cama_crawford_anu_edu_au/2017-02/26_mckibbin_sidorenko_2006.pdf (access 16.04.2020).

Ratajczak M., *Państwo a finansjalizacja*, Bezpieczny Bank 2020, nr 1(78), pp. 9–22.

Shannon G.W., Willoughby J., *Severe Acute Respiratory Syndrome (SARS) in Asia: A Medical Geographic Perspective*, Eurasian Geography and Economics 2004, 45(5), pp. 371–372.

Senior loan officer opinion survey on bank lending practices and credit conditions, 2nd quarter 2020, NBP Financial Stability Department, Warsaw, April 2020, https://www.nbp.pl/en/systemfinansowy/kredytowy2_2020_en.pdf (access 16.05.2020).

Yi-Cheng Chen, Ping-En Lu, Cheng-Shang Chang, Tzu-Hsuan Liu, *A Time-dependent SIR model for COVID-19 with Undetectable Infected Persons*, http://gibbs1.ee.nthu.edu.tw/A_TIME_DEPENDENT_SIR_MODEL_FOR_COVID_19.PDF (access 13.05.2020).

World Bank Group. 2014. The Economic Impact of the 2014 Ebola Epidemic: Short- and Medium-Term Estimates for West Africa. Washington, DC: World Bank 2014, https://openknowledge.worldbank.org/handle/10986/20592 (access 12.04.2020).

Macroeconomics and Health: Investing in Health for Economic Development. Report of the Commission on Macroeconomics and Health. World Health Organization 2001, https://apps.who.int/iris/bitstream/handle/10665/42435/924154550X.pdf;sequence=1 (access 10.04.2020).

Press and special articles

Evans D., Over M., *The Economic Impact of COVID-19 in Low- and Middle-Income Countries*, https://www.cgdev.org/blog/economic-impact-COVID-19-low-and-middle-income-countries (access 20.03.2020).

Haughton A., *Combat The Economic Impact Of COVID-19*, http://jamaica-gleaner.com/article/news/20200325/combat-economic-impact-COVID-19 (access 31.03.2020).

Kunica M., *O kredyt będzie trudniej. „Czas beztroskiego konsumeryzmu w Polsce się skończył" – ostrzega prezes największego banku w Polsce*, 4 April 2020, https://businessinsider.com.pl/finanse/makroekonomia/prezes-pko-bp-zbigniew-jagiello-o-kryzysie-zwiazanym-z-koronawirusem-COVID-19/5rrfdg4 (access 20.04.2020).

Polacy wystraszyli się plotek o niewypłacalności banków, https://www.money.pl/pieniadze/polacy-wystraszyli-sie-plotek-o-niewyplacalnosci-bankow-nbp-na-rynku-przybylo-51-mld-zl-w-gotowce-6515725102798977a.html (access 31.05.2020).

Szymański D., *Banki robią to, przed czym ostrzegano od dawna. „Musimy się zabezpieczyć"*, publication date 16 April 2020, https://businessinsider.com.pl/firmy/zaostrzanie-akcji-kredytowej-trudniej-o-kredyt-w-banku-analiza-polityki-insight/qcvbjlx (access 13.05.2020).

Ważna M., *Kiedy zakończy się pandemia koronawirusa SARS-CoV-2? Sprawdzamy, co mówią naukowcy*, https://www.medonet.pl/koronawirus/to-musisz-wiedziec,kiedy-zakonczy-sie-pandemia-koronawirusa-sars-cov-2--sprawdzamy--co-mowia-naukowcy,artykul,49208922.html (access 10.04.2020).

Legal documents

Regulation of the Minister of Finance of 16 April 2020 amending the Regulation on the principles of creating provisions for the risk related to the activity of banks, Journal of Laws of 17 April 2020, item 687.

Regulation of the Minister of Finance of 7 April 2020 on setting new deadlines for the performance of certain reporting and information obligations, Journal of Laws of 7 April 2020, item 622.

Regulation of the Minister of Finance of 18 March 2020 repealing the Regulation on the systemic risk buffer, Journal of Laws of 18 March 2020, item 473.

Regulation of the Minister of Finance of 31 March 2020 on the extension of deadlines for preparing and submitting certain tax information, Journal of Laws of 31 March 2020, item 563.

Act of 16 April 2020 on special support instruments in connection with the spread of SARS-CoV2, Journal of Laws of 17 April 2020, item 695.

Act of 31 March 2020 amending the Act on special measures related to the prevention, neutralisation and combating of COVID-19, other infectious diseases and the consequent crisis situations and certain other acts, Journal of Laws of 31 March 2020, item 568.

Act of 2 March 2020 on special measures related to the prevention, neutralisation and combating of COVID-19, other infectious diseases and the consequent crisis situations, Journal of Laws of 7 March 2020, item 374.

Internet sources

BIK raportuje strukturę zawieszenia (odroczenia) spłaty rat kredytowych, https://media.bik.pl/informacje-prasowe/518015/bik-raportuje-strukture-zawieszenia-odroczenia-splaty-rat-kredytowych (access 28.05.2020).

Financial data of the banking sector, https://www.nbp.pl/home.aspx?f=/statystyka/pieniezna_i_bankowa/naleznosci.html [access 20.05.2020].

Monthly data for the banking sector as at 29 February 2020, PFSA, https://www.knf.gov.pl/?articleId=56224&p_id=18 (access 13.05.2020).

EBA statement on actions to mitigate the impact of COVID-19 on the EU banking sector, 12 March 2020, https://eba.europa.eu/eba-statement-actions-mitigate-impact-COVID-19-eu-banking-sector (access 05.04.2020).

Financial Stability Report. Special issue: impacts of the COVID-19 pandemic. NBP June 2020, https://www.nbp.pl/en/systemfinansowy/fsr202006.pdf (access 15.06.2020).

Guidelines on legislative and non-legislative moratoria on loan repayments applied in the light of the COVID-19 crisis, 02 April 2020, https://eba.europa.eu/regulation-and-policy/credit-risk/guidelines-legislative-and-non-legislative-moratoria-loan-repayments-applied-light-COVID-19-crisis (access 05.04.2020).

Komunikat ws. „odmrożenia" terminów w postępowaniach administracyjnych prowadzonych przez Komisję Nadzoru Finansowego, https://www.knf.gov.pl/knf/pl/komponenty/img/Komunikat_ws_odmrozenia_terminow_w_postepowaniach_administracyjnych_prowadzonych_przez_KNF.pdf (access 20.05.2020).

Pracę i opiekę nad dzieckiem łączy połowa mam, https://media.bik.pl/informacje-prasowe/516055/prace-i-opieke-nad-dziecmi-laczy-w-pandemii-polowa-mam-nie-jest-latwo (access 25.05.2020).

Statement on actions to mitigate financial crime risks in the COVID-19 pandemic, Statement on dividends distribution, share buybacks and variable remuneration, Statement on supervisory reporting and Pillar 3 disclosures in light of COVID-19, 31 March 2020, https://eba.europa.eu/eba-provides-additional-clarity-on-measures-mitigate-impact-COVID-19-eu-banking-sector (access 05.04.2020).

Statement on the application of the prudential framework regarding Default, Forbearance and IFRS9 in light of COVID- 19 measures, 25 March 2020, https://eba.europa.eu/eba-provides-clarity-banks-consumers-application-prudential-framework-light-COVID-19-measures (access 05.04.2020).

Supervisory Stimulus Package for Security and Development to support the banking sector, https://www.knf.gov.pl/dla_rynku/Koronawirus_informacje_dla_podmiotow_nadzorowanych (access 06.04.2020).