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Post-Crisis Challenges for Central Banks[1]

Abstract. *The financial crisis forced central banks to rediscover the importance of financial stability. The aim of the article is to identify and analyze challenges that central banks face in a post-crisis environment. The main challenges include defining financial stability and systemic risk, as well as, quantifying those phenomena. Central banks also have to conduct macroprudential policy to mitigate systemic risk, along with coordinating it with monetary policy. Apart from that, minimizing risks of quantitative easing and introducing an effective exit strategy will also prove challenging. In the case of the EU, development of financial integration depends on implementing banking union and mitigating its current construction flaws. In conclusion, these challenges are linked with examples of policies that central banks can introduce into practice to better fulfill their financial stability mandate.*

Keywords: *central bank, financial stability, macroprudential policy, financial crisis*

Introduction

The global financial crisis underlined the need to increase central bank's involvement in safeguarding financial stability (perceived as a public good). Many views that dominated before the crisis are no longer valid when it comes to central banking. The financial crisis has made central banks change the way they operate

[1] The opinions expressed herein are those of the author and do not reflect those of the associated institutions. All remaining errors are my own.

and further develop their policies, adapting to the turbulent market environment. Central banks must i) work within a difficult economic context (e.g. sovereign-bank nexus, over-indebtedness), ii) undergo an intellectual makeover (the crisis opened up a gap between the theory and practice of central banking) and face institutional challenges (they are taking on an expanded role in financial regulation and supervision)[2]. Although they managed to limit the extent of systemic risk materialization, numerous challenges remain. After managing this crisis, it is time to reflect on the way central banks should function, as many of the pre-crisis policy certainties are gone.

Central banks are going back to their roots. The majority of central banks were established during times of crisis (most notably, during wars to finance governments) and also took on the role of financial crisis management in their early days[3], as they did during the recent crisis. Although central banks are partially blamed for not recognizing the build-up of systemic risk and underestimating pro-cyclicality, after a crisis, there is a trend to increase their powers in prudential supervision. This is done with the belief that the growth of the central banks' role is able to fill the gaps in the pre-crisis financial safety net arrangements and ensure effective division of tasks[4]. One contemporary challenge for central banks in the environment of global financial imbalances and excessive public debt is conducting monetary policy in a way that promotes financial stability[5]. The challenges for central banks result not only from the development of the crisis, but also from the extraordinary policies implemented by the central banks themselves. Addressing those challenges is indispensable for laying an effective preventive framework and making the financial system resilient before the next crisis.

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[2] J. Caruana, *Central banking between past and future: which way forward after the crisis?*, speech at South African Reserve Bank 90th Anniversary Seminar, Pretoria, 1 July 2011, p. 1.

[3] D. Schoenmaker, *Central Banks Role in Financial Stability*, in: *Handbook of Safeguarding Global Financial Stability: Political, Social, Cultural, and Economic Theories and Models*, vol. 2, ed. G. Caprio, Elsevier, Oxford 2013, p. 283.

[4] See Ernst & Young, OMFIF, *Challenges for central banks: wider powers, greater restraints. The financial crisis and its aftermath*, 2012, pp. 10-11. In times of crisis there is a tendency to intensify the role of safety net by creating new bodies, institutions, regulations, while safety net becomes more dormant in tranquil times. See A. Alińska, *Sieć bezpieczeństwa finansowego jako element stabilności funkcjonowania sektora bankowego*, "Studia i Prace", 2011/2012, no. 4 (8), p. 94.

[5] M. Puławski, *Odpowiedzialność banków centralnych za stabilność finansową*, in: *Współczesna bankowość centralna*, eds. W.L. Jaworski, A. Szelągowska, CeDeWu, Warszawa 2012, p. 125. Great Moderation is no more. Central banks have to operate in the economic and financial „new normal" environment characterized by: i) somewhat higher macroeconomic volatility and lower potential growth, ii) protracted periods of adjustment in housing markets and in the construction sector, iii) more rigorous scrutiny of valuation of property as collateral for credit, iv) an upward shift in the pricing of credit and liquidity risk, v) stricter regulation in order to strengthen the resilience of the financial sector. See J.M. González-Páramo, *The challenges of the European financial sector*, speech at a conference organized by the Spanish National Council of the Urban Land Institute (ULI), Barcelona, 26 May 2011.

The aim of this article is to identify, analyze, and elaborate on ways to address the challenges for central banks, functioning in a post-crisis environment. The main research question is identifying those challenges. The most important challenges are explored in subsequent sections of the article[6]. The conclusion includes linking the challenges with examples of the policies that central banks can introduce in practice to better fulfill their responsibilities. The research methods include literature review and a comparative method. This article is a continuation of research that focused on lessons learned from the financial crisis.

1. Defining financial stability and systemic risk

Before the crisis, there dominated a view that the central bank can best contribute to financial stability by achieving price stability, which excluded explicitly reacting to an increase in asset prices. Yet the crisis has proven that financial stability is just as important as price stability, and that achieving price stability does not automatically make the financial system stable. This leads to a new consensus for the optimal central bank policy – flexible inflation targeting, with "embedded" financial stability[7]. A longer policy horizon has to be included in the monetary policy considerations, taking into account the risks to financial stability arising from the financial cycle, as systemic risk builds up over time. In the long term, goals of price stability and financial stability are complementary, and thus, one cannot be sustainably achieved without the other.

There is a wide range of different financial stability definitions[8]. This creates a need for the central bank to determine what exactly fits under this term. This impacts the extent of a financial stability analysis and (both preventive and emergency) measures taken to safeguard it. The definition indicates what central bank considers a sign of instability, and therefore, is likely to intervene to prevent it. Lack of an explicit financial stability definition does not foster transparency of the central bank's policy. However, lack of a formally adopted definition could be the result of a constructive ambiguity policy, or an effort not to limit central bank's discretion in times of crisis. The majority of definitions adopted by central banks in the EU apply a broad approach and are often placed in the first

[6] A great account of key challenges for central banks is made by Claudio Borio, who rightfully notes that central banking will never be quite the same again after the global financial crisis. See C. Borio*, Central banking post-crisis: What compass for uncharted waters?*, BIS Working Papers 353, BIS 2011.

[7] W. Przybylska-Kapuścińska, *Krytyka celów i instrumentów polityki pieniężnej współczesnych banków centralnych*, in: *Współczesna bankowość centralna...*, pp. 38-39.

[8] A review of financial stability definitions can be found e.g. in: W. Rogowski, C. Mesjasz, *Definicje stabilności finansowej*, in: *Nadzór korporacyjny a stabilność sektora finansowego*, ed. P. Urbanek, Wyd. UŁ, Łódź 2012, pp. 15-26.

editions of financial stability reports[9]. There is still some divergence concerning the scope of financial stability and its concept, which is probably due to a myriad of factors that determine financial stability[10]. Nevertheless, it is the operationalization of the financial stability that constitutes a significant challenge for the central banks.

Central banks focus on providing definitions for financial (in)stability, rather than the definitions of financial crisis and systemic risk. Those concepts are, however, interrelated. The impairment of the function of a financial system to a significant extent marks an occurrence of a financial crisis. The crisis may result from a shock that causes accumulated systemic risks to materialize, which can build-up over the years, thus increasing the financial system's vulnerability to shocks. Systemic risk can be described as the risk that occurs when financial instability becomes so widespread, that it impairs the functioning of a financial system to the point where economic growth and welfare suffer materially[11]. This applies to situations where financial instability, through various channels, spreads so widely that it negatively affects the real economy, thus disrupting the functioning of the financial system.

Central banks do not have to necessarily provide comprehensive definitions of the discussed concepts, however, they should be required to elaborate on their understanding (both internally and externally), and explore ways in which adopted concepts influence their financial stability analysis and fulfillment of responsibilities. This would not only enhance communication policy and the central banks' transparency, but also foster policies in this field, by providing ex-ante central banks' strategic guidelines concerning financial stability.

2. Quantifying systemic risk

Despite central banks having established methods and tools of achieving price stability, urgent research is necessary into the concept of financial stability/systemic risk and developing the necessary tools to contribute to the stability of the financial system as a whole. The current research on financial stability is at a similar research on financial stability is at a similar stage, at which the research on price stability was a few decates ago.

[9] P. Smaga, *Assessing Involvement of Central Banks in Financial Stability*, Center for Financial Stability Policy Paper, 23 May 2013, pp. 14,17.

[10] Assessing them is not easy and requires involvement of all institutions responsible for safeguarding financial stability, adequate tools to maintaining or restoring it, as well as analyses and monitoring of threats to financial stability that might be of various nature. See M. Iwanicz-Drozdowska, *Definicje i determinanty stabilności finansowej*, "Bank i Kredyt" 2011, no. 1, p. 15.

[11] ECB, *Financial Stability Review*, June 2010, p. 129.

Central banks have various methods for quantifying financial stability. These include financial stability indicators, financial stability indexes, stress testing, modeling and network analysis. Each method has its strong and weak points[12]. The absence of a commonly accepted definition of financial stability implies lack of universal method of measuring financial stability or systemic risk. Therefore, each central bank has to take into account the specific characteristics of the national financial system when attempting to assess systemic risk. There is a myriad of financial stability indicators and selecting the most important ones is not easy, as is the setting of threshold values that would signal the accumulation of systemic risk. At the same time, aggregating them into a financial stability index also seems difficult, as it requires expert judgment and the creation of a forward-looking indicator based on retrospective data. In case of stress tests, they provide flexibility and enable formulating explicit policy responses (e.g. capital shortfalls that need to be covered). However, the results are highly dependent on the assumptions and balancing between low, but not insignificant probability, and significant, but not too extreme shock scenarios. Network analysis, by importing knowledge from biology and physics, gives a chance of quantifying contagion channels and interlinkages between institutions and financial systems. This new stream of systemic risk measurement enables assessing the domino effect of a SIFI failure. Central banks, which usually also oversee payment systems, can make noteworthy use of payment system data for network analysis purposes.

It remains a constant challenge to monitor and upgrade the analytical toolkit, for example, to enhance the hitherto models with financial stability add-ons. Furthermore, measuring systemic risk requires access to adequate data sources, so any data gaps have to be covered. It is crucial for central banks to analyze the transmission mechanisms of systemic risk and the ways in which macroprudential tools influence macrofinancial development. Proper quantification of systemic risk is an indispensable prerequisite for an adequate and timely response to the accumulation of imbalances[13].

3. Conducting macroprudential policy

The financial crisis has proven that preventing materialization of systemic risk might be less costly (in terms of GDP loss and fiscal costs) than crisis management. The Jackson Hole consensus that was so dominant before the crisis is no longer valid at present – it is better to "lean against the wind" than to "clean" up

[12] P. Smaga, *Rola banku centralnego w zapewnianiu stabilności finansowej*, CeDeWu, Warszawa 2014, p. 128.

[13] The accurate and well-timed identification of built-up of asset price bubble, although difficult, is crucial to successfully apply the *leaning against the wind* strategy.

after the crisis. Although central banks played a successful role in limiting the fallout of the global financial crisis, they still have to strengthen their preventive policies to safeguard financial stability against the next crisis. Mitigating systemic risk requires establishing a robust, countercyclical and proactive macroprudential policy.

Macroprudential policy is in a nascent stage of development both in terms of theory and in practice[14]. Macroprudential policy, as opposed to microprudential policy, focuses on the stability of the system as a whole, as well as on mitigating systemic risk of systemic risk and procyclicality. As financial stability is more than the "sum of" the stability of all financial institutions, it is important for macroprudential policy to focus on interlinkages and contagion. As opposed to monetary policy, macroprudential policy tools can be implemented selectively, impacting only one part of financial system, as opposed to "blunt" interest rates[15]. Interest rates cannot be effectively used to stabilize both economic and financial cycles at the same time, yet the impact of interest rate policy is broad, making it tougher to circumvent, which is possible in the case of macroprudential policy[16]. However, hitherto practice with macroprudential policy has been a "learning-by-doing" process and some experiences have been gathered mainly in developing economies, so that central banks in developed countries may try to learn from their example.

Central banks are best suited to play a key role in macroprudential policy as they:

– can effectively coordinate both macro- and microprudential supervision, thus achieving synergy effects (e.g. analyzing macrofinancial developments from different perspectives),

– already have a broad knowledge of the functioning of the economy, which can facilitate the search for systemic risk sources,

– enjoy a high degree of independence, and thus, can act countercyclicaly, as well as, irrespectively of the political cycle,

– have gathered extensive experience in preparing financial stability reports and analyzing financial system as a whole.

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[14] More on the concept of macroprudential policy in P.J. Szpunar, *Rola polityki makroostrożnościowej w zapobieganiu kryzysom finansowym*, "Materiały i Studia" 2012, no. 278.

[15] Over the past decades, central banks have tended to loosen monetary policy aggressively during a crisis, but to tighten only cautiously into the recovery. As a consequence, interest rates in many economies have gradually trended lower, remaining consistently below the average natural level that theory would predict for the cycle. This narrows policymakers' room for manoeuvre and, by entrenching distortions, complicates the task of normalising the policy stance. Instead, a more symmetrical approach is called for over the financial cycle, with monetary policy tightening more aggressively in the boom and easing less persistently during the bust. See J. Caruana, *Central banking between past and future...*, p. 3.

[16] See S. Aiyar et al., *Does macropru leak? Evidence from a UK policy experiment*, Working Paper No. 445, Bank of England 2012.

Central banks face many challenges concerning macroprudential policy. Establishing a robust macroprudential framework requires central banks[17] among others to:

– have a clearly enshrined mandate in the legislation,

– have the power over macroprudential tools to fulfill the mandate,

– establish an analytical and organizational framework for macroprudential policy within the central bank (focused not only on day-to-day analysis but also researching transmission channels of macroprudential tools),

– operationalize the macroprudential toolkit,

– establish an effective follow-up mechanism to warnings and recommendations.

Apart from that, another substantial challenge is to coordinate macroprudential policy with monetary policy, so as to limit the cases of conflicting objectives and provide an adequate policy mix[18]. It will also be necessary to upgrade financial stability reports in order to better serve macroprudential purposes and to strike a reasonable balance between rules and discretion when applying macroprudnetial tools. Moreover, adequatly calibrating macroprudential measures, i.e. setting requirements high enough to successfully contain the build-up of systemic risk and increase the resilience, will be challenging as well. As there is some progress on the macroprudential policy toolkit concerning the risks in the banking sector, the systemic risks in many other parts of the financial system have to be explored (e.g. insurance sector, financial infrastructure). In the case of the EU, macroprudential policy has to remain, to a large extent, on a national level, as financial cycles are not synchronized and structures of financial systems differ. Thus, various structural systemic risks can emerge. It will therefore be a challenge for the ESRB and the ECB (within the banking union) to effectively coordinate national macroprudential policies and limit cross-border externalities. Central banks, in their macroprudential capacities, will also likely be facing the dilemma of having to impose short

[17] In more general terms, in order to maintain financial stability, central banks should have a structure in place that enables them to i) identify potential vulnerabilities at an early stage, ii) take precautionary measures, which make it less likely that costly financial disturbances occur, and iii) undertake actions to reduce the costs of disturbances and restore financial stability after a period of distress. See D. Schoenmaker, op. cit., p. 276.

[18] Monetary policy and macroprudential policy act through largely the same channels. Both the policy rate and most macroprudential tools affect, for instance, credit growth in the economy and developments in various asset prices. This also means that the two policy areas affect one another's objectives. Monetary policy affects the credit cycle – which was the whole point of "leaning against the wind", and macroprudential policy has effects on the business cycle. It is therefore desirable to find the right policy mix – the combination of policy rate and macroprudential tools that give the best overall outcome for the economy. The conditions for finding the right mix are normally improved if the two types of policy are coordinated, rather than determined separately. See S. Ingves, *Central bank policies - the way forward after the crisis*, speech at the Royal Bank of Scotland, Stockholm, 4 October 2013, p. 9.

term visible costs (applying macroprudential tools), while expecting to achieve long term indirect effects – financial stability and the building-up of buffers.

4. Quantitative easing

During the financial crisis, standard monetary policy measures (like lowering interest rates to almost zero), were insufficient to counter the financial market meltdown, so the central banks had to embark on "uncharted waters" and introduce unconventional policy measures aimed at stabilizing the markets and improving the economic outlook. The evaporation of trust of financial markets led to a liquidity squeeze and central banks had to flood financial markets with liquidity in the form of quantitative easing – QE. With monetary policy transmission mechanisms impaired, central banks hoped that injecting liquidity through QE would not only revive the markets, but also feed into the economy by increased lending activity by banks. Expanding hitherto liquidity facilities and introducing new liquidity support programs was mainly the domain of the Fed, the ECB, and the Bank of England, which led to a substantial increase in their balance sheet size[19]. Liquidity injections to banks were in the form of asset purchases by the central banks that included buying from other banks different forms of securities, including sovereign bonds. In that way, central banks transferred part of the risks from the financial markets to their balance sheets, and started to act as a substitute for the interbank market.

Although QE polices were somewhat successful in stabilizing the markets in the short term, the effect of supporting economic growth was rather limited. At the same time, the implemented QE programs created many challenges for the central banks[20]:

– increasing inflation in the medium term and the depreciation of the domestic currency,

– limiting the destabilizing impact of QE on emerging economies (unsustainable capital inflows, inflationary pressures and exchange rate appreciation),

– lowering interest rates to almost zero created a favorable environment for the search for yield and increased risk-taking by financial institutions,

– reducing pressure on fiscal consolidation, when a central bank buys government bonds, despite high yields,

– excessive growth of public and private indebtedness as a result of easy access to central bank liquidity,

[19] The review of those policies can be found in e.g. Z. Polański, *Przemiany funkcji pożyczkodawcy ostatniej instancji w czasie kryzysu*, in: *Współczesna bankowość centralna*..., pp. 85-112.

[20] P. Smaga, *Bank centralny i jego działania na rzecz stabilności finansowej*, in: *Stabilność finansowa*, ed. M. Iwanicz-Drozdowska, "Bank i Kredyt", NBP, Warszawa 2014, p. 49-50.

– growing reliance of financial institutions on the central bank support facilities (moral hazard),

– mounting credit risk in the central bank's balance sheet as a consequence of purchased securities,

– increasing the risk of weakening bank incentives to repair their balance sheets and improve their financial standing,

– growing risk of the central bank losing its credibility when purchasing government bonds or securities of poor quality,

– deciding on the inclusion of unconventional policy measures into a "standard" monetary policy toolkit,

– implementing an exit strategy that would, on the one hand, alleviate the abovementioned risks and, on the other, not harm the nascent economic recovery, while taking into account public debt management strategy.

5. Banking union

The first pillar of the banking union is a significant step forward in European integration. The Single Supervisory Mechanism (SSM) bases on transferring majority of microprudential tasks from national supervisors to the ECB in the euro area countries (based on art. 127(6) of the Treaty on the Functioning of the European Union). Apart from that, the ECB will have the right to impose stricter macroprudential measures. National authorities will conduct their supervision according to the ECB's guidelines and instructions. The ECB's involvement in direct supervision will depend on the systemic importance of a particular credit institution. However, the ECB will be responsible for the overall functioning of the mechanism. Even non-euro countries can join the SSM at any time by "opting-in".

Establishing the SSM creates numerous challenges for central banks (the ECB and a majority of national central banks) in their supervisory capacities. Since there is no common deposit guarantee fund, responsibility for the costs of the financial crisis will still, to some extent, be born on the national level, while supervisory decisions will be taken on pan-european level. The opt-in countries will not have access to fiscal and liquidity backstops and will have limited influence in the decision making process. This may give rise to an uneven level of the playing field, and reduce the consistency of the mechanism, especially if an opt-in country decides (or is forced to by the ECB) to "opt out". It will be challenging for the ECB to encompass, and take into account, systemic risks in all countries belonging to the SSM and coordinate preventive actions, while countering national bias and forbearance. Furthermore, balancing the home-host relation both within, as well as outside the SSM will be demanding. The powerful position of the ECB

may cause the concerns of particular countries to be less acknowledged and raise questions about the accountability and transparency of the ECB's actions. The ECB itself will face an internal struggle – the ability to effectively separate monetary policy from supervisory responsibilities, while maintaining synergy effects avoiding conflicts of interest and organizing the division of work between the Supervisory Board and the Governing Council. Another challenge will be making the SSM operational with the ECB, which has no prior microprudential experience, and without excessive drainage of national resources. Moreover, the division of macroprudential tasks between the ECB, the ESRB, and the national authorities remains blurred and it will be challenging to set an effective cooperation framework.

Conclusion

Central banks should fulfill their role in striving to maintain confidence in the financial system by being pro-active, engaging in stabilizing financial markets, and pursuing a more symmetrical approach throughout financial and economic cycles. They can no longer afford to be passive and reactive, relying on "the invisible hand of the market" and self-correcting mechanisms of markets. Still, they now face the dilemma between failing to recognize systemic risk on time and raising a false alarm. What central banks should have learned from the crisis is that they cannot remain "prisoners" of their own economic dogmas and they have to widely cast their net when searching for sources of systemic risk. Expansive monetary policy is not enough to achieve financial stability. On the contrary, maintaining a prolonged period of ultra-low interest rates induces moral hazard and excessive risk-taking, which partially contributed to the global financial crisis in the first place. Currently, it seems unreasonable for central banks to apply the same policy as a remedy.

However, the increase in central banks' roles and powers should be accompanied by a greater transparency of their activities, such as the publishing of financial stability reports. As it is hard to measure systemic risk and central banks' effectiveness in contributing to financial stability, it remains an open question to what extent central banks have to follow the principle of "democratic accountability". After the outbreak of the crisis, central banks have become institutions with an even greater impact on the financial system, the economy, and fiscal policy, which may increase political pressures on their operation and reduce their independence. It is therefore important that their responsibilities, mandates, and tools are well-established and their independence is safeguarded.

There is a risk that there will be a disproportionate increase in public expectations of the actions of central banks, as they successfully stepped in dur-

ing the crisis. Greater clarity about roles and responsibilities can be conducive to effective and rapid decision-making, to managing trade-offs smoothly, and to accountability. Clarity can also help prevent gaps from opening up between what the public expects and what central banks can deliver[21]. Central banks can "buy time" for necessary adjustments in the financial system and fiscal consolidation but they cannot solve every problem, like those of a structural nature. Therefore, it is important that in times of crisis, the government and other financial safety net institutions need to cooperate and take decisive actions.

The challenges identified in the article are interrelated, yet not the only ones that central banks face. It will be harder for them to maintain price and financial stability after the crisis. Concerning the main research question, the challenges are linked with examples of the ways to address them and listed in table 1.

Table 1. Challenges for central banks and ways of addressing them

Challenge	Possible solutions
Defining financial stability and systemic risk	elaborate on the central bank's understanding of those concepts; provide policy guidelines and operationalized definitions
Quantifying systemic risk	conduct extensive research on systemic risk (both quantitative and qualitative); focus on creating systemic risk indicators and different measurement approaches
Conducting macroprudential policy	work on the macroprudential policy framework, strategy, and operationalization of instruments and learn from experiences in other countries
Quantitative easing	implement a gradual exit strategy without undue delay; coordinate between major central banks and with the macroprudential policy
Banking union	create a full banking union; amend the treaties and establish an effective cooperation framework within the SSM

Source: own elaboration.

Addressing those challenges would also require international cooperation between the central banks themselves. Central banks need to be engaged in a constant dialogue and exchange of experiences, so as to limit cross-border externalities in the wake of increased interconnectedness of their financial systems. They have to remain ready for a rapid coordinated action in exceptional circumstances, should strive to strengthen the global financial safety nets to better address global or regional liquidity crises, and limit the cases of self-insurance by countries. Central banks also need to further improve analytical frameworks so as to better un-

[21] J. Caruana, *Central banking in a balance sheet recession*, panel remarks during the conference on "Central banking: before, during and after the crisis", Washington, 23-24 March 2012, p. 4.

derstand the international propagation mechanisms of unconventional monetary policies, both at a macro and at a micro level, as well as, to share their findings with other central banks[22].

Lastly, new central bank tasks create the need for changes in the organizational structure and formation of organizational units designed to fulfill financial stability/macro-prudential policy responsibilities. As was mentioned above, the process of operationalizing new powers of central banks will probably be done by "trial and error", while attempting to reconcile conflicts of interest (e.g. between monetary and prudential policies).

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Pokryzysowe wyzwania dla banków centralnych

Streszczenie. *Kryzys finansowy na powrót unaocznił bankom centralnym znaczenie stabilności finansowej. Celem artykułu jest identyfikacja i analiza wyzwań stojących przed bankami centralnymi po kryzysie. Do najważniejszych z nich można zaliczyć definiowanie stabilności finansowej i ryzyka systemowego oraz kwantyfikację tych zjawisk. Banki centralne są w coraz większym stopniu zobowiązane do prowadzenia polityki makroostrożnościowej zapobiegającej ryzyku systemowemu oraz do koordynowania jej z polityką pieniężną. Oprócz tego znaczące wyzwanie stanowi ograniczenie zagrożeń związanych z quantitative easing i wprowadzenie skutecznej strategii wyjścia. W przypadku UE rozwój integracji finansowej zależy od wdrożenia unii bankowej i zniwelowania jej obecnych wad konstrukcyjnych. W podsumowaniu wskazane wyzwania są powiązane z przykładami działań, jakie banki centralne mogą podjąć, aby w praktyce lepiej przyczyniać się do stabilności finansowej.*

Słowa kluczowe: *bank centralny, stabilność finansowa, polityka makroostrożnościowa, kryzys finansowy*