

BAFFI CAREFIN
Centre for Applied Research on International
Markets, Banking, Finance and Regulation

Working Paper

Aleksandra Masłowska-Jokinen and Anna Matysek-
Jędrych

Post-Crisis Regulatory and Supervisory Arrangements – The New ‘Old’ Central Banking

**BAFFI CAREFIN Centre Research Paper Series
No. 2016- 32**

This Paper can be downloaded without charge from The Social
Science Research Network Electronic Paper Collection:
<http://ssrn.com/abstract=2815851>

Post-Crisis Regulatory and Supervisory Arrangements – The New ‘Old’ Central Banking

Introduction

The Global Financial Crisis (GFC) exposed clear gaps in the pre-crisis regulatory and supervisory framework in most of financial systems worldwide, but not in all financial systems. Optimal design of supervisory and regulatory arrangements in the post-crisis perspective requires identifying elements that failed in helping predicting current slowdown, and those that directly or indirectly affected vulnerability of financial markets. Both tasks appear to be as challenging as twelve labors of Hercules: demanding, covering wide aspects of financial and macroeconomic environment, requiring cooperation of many key agents in all markets; hence truly virtually impossible.

Instead of identifying ‘failed’ elements, we propose the positive approach to the post-crisis regulatory and supervisory framework, which is proving that some institutional arrangements and basic elements of financial safety net helped some countries avoid the crisis.

There are many important questions, which should be treated as a starting point for discussing changes in supervisory and regulatory framework, especially in relation to the central banking. Should central banks become less powerful and be made more subject to political control, or be given more tools to achieve financial stability? Should the trend of removing central banks from direct supervisory responsibilities be reversed? Is the period of ‘central banks’ triumph’, a period in which their independence and autonomy was widely accepted, now over?

Literature

The institutional framework for central bank policy is evolving. Changes tend to occur after the most significant financial and economic crises. The period following the Great Depression saw a wave of state ownership of central banks [Capie *et al.* 1994, Elgie & Thompson 2002, Wood 2005], the period following the Great Inflation resulted in growing transparency and accountability of central bank policy [Capie *et al.* 1994, Elgie & Thompson 2002, Wood 2005]. The global financial crisis probably will be another defining moment in the history of central banking.

Over the last several years many central banks have made significant strides towards greater accountability and transparency (according to Cukierman [2001] both concepts should be even perceived as *twin issue*). Although, it seems to be impossible to define the optimal level of central bank transparency, many researchers attempt to measure the current level of transparency and indicate current tendencies in this particular aspect of the central bank policy [Geraats 2001, Oosterloo, de Haan & Jong-A-Pin 2007, Dincer & Eichengreen 2010, Čihák *et al.* 2012]. Greater accountability has run hand-in-hand with moves towards greater central bank independence [Fischer 1995, pp. 201-206, Eijffinger & Hoeberichts 2000, pp. 73-96, Lastra 2006]. The last one qualitative aspect of central bank policy arrangement – no less important than the three mentioned above – is its credibility and reputation.

Central bank communication became a critical element of monetary policy after the financial crisis [Siklos 2014]. Recent experience showed that the content of communication matters

* Turku School of Economics, University of Turku, Finland; aamasl@utu.fi

† Department of International Competitiveness, Poznan University of Economics and Business; anna.jedrych@ue.poznan.pl

the most [Siklos 2014], and clear statements about the banks future actions could even help to avoid financial crisis [Schwartz 1986]. Finally, the times when a central bank was considered a *modern one*, that is excluding supervisory role out of its jurisdiction seems to be soon over. Although the literature still divides itself between supporters and opponents of a central bank being involved in financial supervision (*the integration and separation view*, see for example [Masciandaro 2012a, 2012b]), but a few countries have already delegated financial supervisory responsibility to their central banks.¹

Discussion

In a recent report for the National Bank of Poland [Masłowska-Jokinen & Matysek-Jędrych 2016] we identify differences among seemingly similar countries (OECD) in respect to the design of their regulatory and supervisory framework and a role played by central banks in financial safety net.

Table 1. Diagnosis of pre-crisis and post-crisis landscape of central banking

Pre-crisis consensus	Post-crisis landscape
Neat separation between monetary and financial stability functions. Central banks as an ultimate source of liquidity have the classical lender of last resort role, but there was intellectual permission for decoupling of the two functions in crisis management process: monetary policy for prices stability goal, while regulation and supervision for financial stability goal. Price stability is sufficient for macroeconomic stability (i.e. price stability is the best monetary policy contribution to macroeconomic stability) – canonical macroeconomic models with the primary role of price rigidities as a form of departure from a fully equilibrating and well-functioning economy [Woodford 2003, Walsh 2010]. Short-term interest rate was sufficient to capture the impact of monetary policy on the economy. This was reinforced by the believe that central banks would not have to drive policy rates to zero in nominal terms. The specific version of the ‘keep-your-house-in-order’ doctrine, which is analogues to the reasoning behind the microprudential approach: when each country on a stand-alone basis is sound, the world will be sound, as well. In a consequence, all central banks did everything to ensure price stability in their own economy.	There is no agreement on whether or how far monetary policy regimes should be adjusted to lean against the build-up of financial imbalances. One view is that monetary policy regime should focus on price stability and financial stability is best ensured through the established macroprudential framework, and central banks are not exposed to the risk of losing credibility [Bernanke 2009, Blanchard, Dell’Ariccia, Mauro 2010, Bean 2010, 2011]. Another view is that macroprudential framework might not be sufficient, and central banks through the monetary policy should play active role in stabilizing the financial system [Cechetti <i>et al.</i> 2000, Borio & Lowe 2002, Papademos & Stark 2010]. It is agreed that ‘cleaning’ the debris of financial crisis through monetary policy is costly and that interest rate policy is not enough. Central banks have introduced additional tools to influence longer-term interest rate and financial conditions, such as credit term and credit spread through so-called unconventional or balance-sheet policy [Bini-Smaghi 2009, Borio & Disyatat 2010, Curdia & Woodford 2010, Matysek-Jędrych 2013]. There is a broad consensus that financial regulation and supervision needs go beyond a microprudential perspective and adopt broad, macroprudential orientation. It is also widely believed that central banks should play a key role in the macroprudential policy. There is general agreement that low and stable inflation does not guarantee financial and macroeconomic stability. The sources of global financial crisis emerged during the Great Moderation era. There is no agreement on the primary tool of monetary in the aftermath of global financial crisis: interest rate or balance-sheet policy. One view is that policy should be accommodative as possible. Another view is highlights the collateral damage of such an accommodative policy kept beyond the crisis management phase [Borio & Disyatat 2010, Hannoun 2010].

Source: Authors’ compilation on Borio [2011] and Eichengreen *et al.* [2011].

¹ The Bank of England and the Bundesbank are the key examples.

The study's major theme that designing general "one for all" supervisory and macroprudential standards does not make a country immune to the crisis was verified with a series of empirical tests.

Although, central banks could not be blamed for the genesis of the crisis, most of them appeared to be ineffective in relation to most of crisis resolution tasks. Interest rate cuts – some of them on an unprecedented scale – proved to be inadequate, massive injections of liquidity failed to rebuild confidence for a long time. Thus, it is not surprising, that the crisis has shaken the fundamentals of the central banking world (Table 1).

3.1. The possible new role of monetary policy tools – the case of reserve requirements

Literature on GFC causes and consequences announces possible changes in the way monetary policy is made in the future. There is also a view that monetary policy tools can be used to foster financial stability objectives. Stein [2013] discusses superiority of monetary tools and fallibility of supervisory instruments. Regardless the type of financial intermediary, they all face the same market interest rates, and "changes in rates may reach into corners of the market that supervision and regulation cannot". Both monetary and macroprudential policies affect the cost of credit, and therefore the instruments used by one policy can affect the instruments used by other [Kohn 2015]. In our report we show that "death of classical monetary policy" might have been called too soon.

Based on a series of estimations, we demonstrate that countries, which had reserve requirement (RR) present prior to the crisis had observed smaller growth of banking credit, as well as their credit-to-GDP gaps were not rising before the crisis. By introducing a dummy for countries, which experienced crisis before 2007, we show that learning mechanism might be working here [Masłowska-Jokinen & Matysek-Jędrych 2016].

RR, in general, can be analyzed as a tax on bank intermediation [Walsh 2012]. And, since taxes lead to taxes-avoidance, the role of RR depends on the existence of non-taxed institutions – the market structure of the banking system. The less developed financial system, the more effective RR is in suppressing credit growth. In a study analyzing Latin American experience prior and post GFC, Tovar, Garcia-Escribano and Vera Martin [2012] show that RR have a moderate and transitory impact in slowing the pace of credit growth. Particularly in Colombia and Peru, unsuccessful interest rate tightening in response to an unsustainable flow-driven credit boom in Colombia and Peru during 2006-2008 was supported with reserve requirement to contain the risk. Reserve requirements were also successfully used in the aftermath of the 2009-10 global crisis to manage excessive liquidity [Montoro & Moreno 2011]. In a more heterogeneous sample of 49 countries and period 2000-2010, Lim *et al.* [2010] find RR to be effective in reducing the procyclicality of credit growth, at least in the short run.

Raising reserve requirements decreases probability of attracting capital inflows, which might occur in result of an increase in policy rate. They tighten domestic financing conditions, while keeping deposit rates stable. Therefore, RR can be used individually or to strengthen the effectiveness of monetary policy. Especially during periods of rising inflation or rapid credit growth, raising RR may be more effective because they directly affect the supply of credit [Montoro & Moreno 2011]. Moreno [2008] underlines this to be important in countries where financial markets are less developed and pass-through mechanism is smaller.

The role of obligatory reserve requirements has been decreasing steadily and some countries have chosen to eliminate this monetary instrument (for example Australia, Denmark or Sweden).²

² Based on the IMF survey [Gray 2011] over 90% of 120 countries oblige depository institutions to hold minimum reserves.

Table 2. Role of monetary policy in fostering financial stability

Tool set	Goal	Instruments
Monetary policy	price stability	policy rate, standards repos
	liquidity management	collateral policies, interest on reserve, policy corridors
	lean against financial imbalances	policy rate, reserve requirements, mop-up of liquidity, FX reserve buffers

Source: Galati and Moessner [2011] and Hannoun [2010].

A central bank, despite eliminating of such reserve, as Woodford [2002] explains, can still actively participate in a market for overnight central bank balances. But the role of RR is not one-sided. Existence of RR and public knowledge about them can reduce vulnerability to bank runs. Thus, information about obligatory required reserves could lead to ‘*transparency-effect*’ of RR, especially in countries without an explicit DIS. Some advocate that reserve requirements can serve as an insurance policy against the risk of inflation [Calomiris 2014], whereas Gray [2011] underlines that the role of RR is predominantly prudential, monetary and that of liquidity management (Table 2).³

3.2. Central bank transparency and its effect on minimizing the costs of financial crisis

Importance of clear communication for successful monetary policy has been discussed recently to a greater extent. The analysis of benefits and costs of increased communication between a central bank and financial market, however, is still not sufficiently exhausted. Analyzing the role of CBT for guiding private sector forecasts, Ehrmann, Eijffinger and Fratzscher [2010] find empirical evidence that several of transparency measures are effective in smoothing forecasts updates and in result reducing of forecasters’ disagreement. CB financial transparency contains important information for financial market; it eliminates noise and move stock markets in the expected direction. Financial Stability Reports are in this respect superior to speeches and interviews, since, as Born, Ehrmann and Fratzscher [2011] explain, the latter affect the market only moderately and cannot reduce market volatility.

Although high transparency is considered a positive factor improving market efficiency, there are doubts whether transparency size is limitless. Analyzing central banks’ behavior after the burst of financial crisis in 2007, one cannot keep unnoticed a fact of sudden backward trend. Monetary policy-makers found themselves in an unknown territory and decided at first to limit the amount of information sent to the public. Soon after that, several central banks (Reserve Bank of New Zealand, Norges Bank – Norway, Riksbank – Sweden and Federal Reserve in U.S.) decided to increase their transparency by publishing a variety of macroeconomic predictions. These actions prove that degree of central bank communication is evolving and gives the basis for hypothesis: clear central bank communication ex-ante and ex-post financial crisis about monetary and supervisory policy helped to decrease the proneness of financial market to that crisis.

By including indicators of CBT (especially transparency regarding financial stability) into the model explaining variability in credit, we have verified this hypothesis and contributed to the existing literature with new recommendations [Masłowska-Jokinen & Matysek-Jędrych 2016]. Based on the estimations for the period prior the crisis, we conclude that CBT worked as an additional cushion against excess credit growth. Using credit-to-GDP gap and credit-to-GDP growth as dependent variables, empirical analysis showed that smaller growth of credit is present in countries having more open central banks. This effect is especially visible among

³ In a historical overview of RR in the United States, Carlson [2015] explains that the goal of introducing reserve requirements in the US was to provide prudential supervision, to secure banks’ solvency and liquidity.

non-crisis countries. Introducing greater monetary and financial transparency early enough (for example in 2000) is associated with output staying above its potential level also during the crisis. Central banks financial stability reports have become more and more important for financial markets and, based on the series of empirical tests, we underline the importance of proper central bank communication, also in the area of financial stability (e.g. central banks covering financial stability issue; publishing financial stability reports, their coverage and forward-looking character; publishing stress test results).

Taking Finland as a case study, we have shown that communication is important not only between monetary authority and a market. The right level and content of communication is also crucial for institutions co-responsible for macro- and micro-supervision. The Bank of Finland, not being officially responsible for macroprudential duties, performs macro-level stress tests and analysis of early warning indicators on a macro- scale. At the same time Finnish supervisory agency FIN-FSA makes analysis on the company level. Close cooperation between institutions in sharing a common pool of data required for regulation, supervision and macroprudential policy is additionally complemented with the legislative responsibilities of the Ministry of Finance. The Ministry, after recommendations provided by the former two institutions, makes a decision about introducing particular macroprudential instruments (for example caps on loan).

Conclusions

The Global Financial Crisis once again proved that central banks are the key participants in economics and finance, perhaps even the most important ones. As such, they require clear objectives, instruments and communication about them. They do not, however, need a “total makeover”. Importance of clear communication between a central bank and various market participants was proved unquestionable long before the crisis. Recent experience strongly confirmed, though, that the content of the messages matters the most. Additionally, we have shown that intensification of financial transparency before the crisis was associated with smaller credit growth. This effect was especially visible in states, which were classified after year 2008 as non-crisis countries.

Academics and policymakers have been searching for a new set of monetary policy instruments, which would allow the central bank to fulfil both goals, i.e. monetary and financial stability. Based on results from our report, we think that a decision to eliminate reserve requirements from a standard monetary policy array may be ill-conceived. Financial markets in many countries, including some European Union states, are still considered as underdeveloped and face threats of excessive capital flows. Therefore, central banks, should actively adjust its reserve requirements accordingly to the size of credit growth, because, next to being a typical instrument of monetary policy, it seems to be effective as a macroprudential policy instrument, as well.

Based on the literature review we observe evolving institutional arrangements in relation to the central bank. Some countries have already decided to delegate a new set of goals and instruments to their monetary authority, creating a new standard of an institution responsible for price and financial stability. Others, including international advisors, still try to define what would be the next central banking model. Our report has a clear answer to this quest for standardization: “one size does not fit all” in relation to the broadly defined financial safety net and a central bank’s role in it. By comparing similar broader arrangements among countries, we show that the same regulations, structured in exactly the same manner, do not guarantee immunity to crisis. Therefore, we see the new perspective of central banking to be defined by, among others: the possibility of targeting financial stability, the trade-off between central bank credibility, independence and the policy of financial system procyclicality reduction and the arrangements for relations between central bank and government.

Literature

- Bean C., 2010, The Great Moderation, the Great Panic and the Great Contraction, *Journal of the European Economic Association*, Vol. 8, No. 2–3, pp. 289–325.
- Bean C., 2011, *Central banking then and now*, BIS Review, No. 110720.
- Bernanke B.S., 2009, *Monetary Policy and the Housing Bubble*, paper presented at the annual meeting of the American Economic Association, Atlanta, Georgia, 3 January.
- Bini Smaghi L., 2009, *Conventional and unconventional monetary policy*, BIS Review, No. 52.
- Blanchard O., Dell’Ariccia G., Mauro P., 2010, *Rethinking Monetary Policy*, IMF Position Note, February.
- Borio C., 2011, Central banking post-crisis: what compass for uncharted waters? in: *The Future of Central Banking*, ed. by R. Pringle and C. Jones, Central Banking Publications, London.
- Borio C., Lowe P., 2002, *Asset Prices, Financial and Monetary Stability: Exploring the Nexus*, BIS Working Paper, No. 114, July, Bank for International Settlement, Basel.
- Borio, C., Disyatat, P., 2009, *Unconventional monetary policies: an appraisal*, BIS Working Papers, No. 292, Bank for International Settlement, Basel.
- Born B., Ehrmann M., Fratzscher M., 2011, How Should Central Banks Deal with a Financial Stability Objective? The Evolving Role of Communication as a Policy Instrument, in: *Handbook of Central Banking, Financial Regulation and Supervision. After the Financial Crisis*, ed. A. Eijffinger & D. Masciandaro, Edward Elgar, Cheltenham.
- Calomiris C.W., 2014, Phony Deflation Worries, Shadow Open Market Committee Meeting, New York, November 3, 2014.
- Cao, J., Illing G., 2011, Endogenous Exposure to Systemic Liquidity Risk. *International Journal of Central Banking* Vol. 7, No. 2, pp. 173–216.
- Carlson M., 2015, Lessons from the historical use of reserve requirements in the United States to promote bank liquidity, *International Journal of Central Banking*, Vol. 11, No. 1, January.
- Capie F., Goodhart C., Fischer S., Schnadt N., 1994, *The Future of Central Banking. The Tercentenary Symposium of the Bank of England*, Cambridge University Press.
- Cechetti S.G., Genberg H., Lipsky J., Wadhvani S., 2000, *Asset Prices and Central Bank Policy*, Geneva Report on the World Economy, No. 2, May.
- Čihák M., Muñoz S., Sharifuddin S.T., Tintchev K., 2012, *Financial Stability Reports: What Are They Good For?* IMF Working Paper, No. 1, International Monetary Fund.
- Cukierman A., 2001, Accountability, Credibility, Transparency and Stabilization Policy in the Eurosystem, in: Ch. Wyplosz. *The Impact of EMU on Europe and the Developing Countries*, Oxford University Press.
- Curdia V., Woodford M., 2010, *The Central-Bank Balance Sheet as an Instrument of Monetary Policy*, NBER Working Paper, No. 16208.
- Dincer N., Eichengreen B., 2010, Central Bank Transparency: Causes, Consequences and Updates, *Theoretical Inquires in Law*, Vol. 11, No. 1, pp. 75–123.

- Ehrmann M., Eijffinger S., Fratzscher M., 2010, The role of central bank transparency for guiding private sector forecasts, *ECB Working Paper Series*, No. 1146, January.
- Eichengreen B., El-Erian M., Fraga A., Ito T., Pisani-Ferry J., Prasad E., Rajan R., Ramos M., Reinhart C., Rey H., Rodrik D., Rogoff K., Song Shin H., Velasco A., Weder di Mauro B., Yu Y., 2011, *Rethinking Central Banking*, Committee on International Economic Policy and Reform, September.
- Eijffinger S.C.W. Hoeberichts M.M., 2000, Central Bank Accountability and Transparency. Theory and Some Evidence, *International Finance*, Vol. 5, No. 1, pp. 73–96.
- Elgie R., Thompson H., 2002, *The Politics of Central Banks*, Taylor & Francis.
- Fischer S., 1995, Central-Bank Independence Revisited, *The American Economic Review*, Vol. 85, No. 2, pp. 201–206.
- Galati G., Moessner R., 2011, *Macroprudential policy – a literature review*, BIS Working Papers, No. 337, Bank for International Settlements.
- Geraats P., M. 2001, *Why adopt transparency? The publication of central bank forecasts*, ECB Working Paper, No. 41. January
- Gray S., 2011, *Central Bank Balances and Reserve Requirements*, IMF Working Paper, No. 36.
- Hannoun H., 2010, *The Expanding Role of Central Banks Since the Crisis: What are the Limits?*, Speech delivered at the 150th Anniversary of the Central Bank of the Russian Federation, 18 June, Moscow, <http://www.bis.org/speeches/sp100622.pdf>
- Kohn D., 2015, Implementing Macroprudential and Monetary Policies: The case for two countries, speech delivered at FRB Boston Conference, October 2.
- Lastra R.M., 2006, *Legal Foundation of International Monetary Stability*, Oxford University Press.
- Lim C., Columba F., Costa A., Kongsamut P., Otani A., Saiyid M., Wu X., 2011, *Macroprudential policy: What instruments and how to use them?* IMF Working Paper, No. 238.
- Masciandaro D., 2012a, Determinants of financial supervision regimes: Markets, institutions, politics, law or geography? in: K. Alexander & R. Dhumale (eds.), *The research handbook of international financial regulation*, Edward Elgar, Cheltenham.
- Masciandaro D., 2012b, Monetary policy and banking supervision: still at arm's length? a comparative analysis, *The European Journal of Comparative Economics*, Vol. 9, No. 3, pp. 349–366.
- Masłowska-Jokinen A., Matysek-Jędrych A., 2016, 'One Size Does Not Fit All' – Institutional Determinants of Financial Safety Net Effectiveness, NBP Working Paper Series, forthcoming.
- Matysek-Jędrych A., 2013, *Quantitative easing w polityce europejskiego banku centralnego a proces integracji gospodarczo-walutowej w Europie*, in: ed. K. Opolski, J. Górski, *Perspektywy integracji gospodarczej i walutowej w Unii Europejskiej w czasach kryzysu*, Uniwersytet Warszawski Wydział Nauk Ekonomicznych, Warszawa.
- Moreno R., 2008, *Monetary policy transmission and the long-term interest rate in emerging markets*, BIS Papers, No. 35, pp. 61–80.
- Oosterloo S., de Haan J., Jong-A-Pin R., 2007, Financial Stability Reviews: A First Empirical Analysis, *Journal of Financial Stability*, Vol. 2, No. 4, pp. 337–55.

- Papademos L., Stark J., 2010, *Economic Monetary Analysis*, European Central Bank, Frankfurt.
- Schwartz A.J., 1986, Real and Pseudo-Financial Crisis, in: *Financial Crises and the World Banking System*, eds. F. Capie, G.E. Wood, MacMillan, London.
- Siklos P.L., 2014, Communication Challenges for Multi-Tasking Central Banks: Evidence, Implications, *International Finance*, Vol. 17, No. 1, pp. 77–98.
- Stein J.C., 2013, ‘Overheating in Credit Markets: Origins, Measurement, and Policy Responses’, speech delivered at ‘Restoring Household Financial Stability after the Great Recession’, research symposium sponsored by the Federal Reserve Bank of St. Louis.
- Tovar C.E., Garcia-Escribano M., Vera Martin M., 2012, *Credit growth and the effectiveness of reserve requirements and other macroprudential instruments in Latin America*, IMF Working Paper, No. 142.
- Walsh C.E., 2010, *Monetary Theory and Policy*, MIT Press, Cambridge.
- Walsh C.E., 2012, Discussion of “Reserve requirements for price and financial stability: when are they effective?”, *International Journal of Central Banking*, March.
- Wood J.W., 2005, *A History of Central Banking in Great Britain and the United States*, Cambridge University Press.
- Woodford M., 2002, Financial market efficiency and the effectiveness of monetary policy, *FRBNY Economic Policy Review*, May.