

TOWARD THE "NEW NORMAL" AFTER COVID-19 – A POST-TRANSITION ECONOMY PERSPECTIVE

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5. Central Bank Policy toward the Covid-19 pandemic: Seeking patterns among the most powerful central banks



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Abstract

Purpose: The main objective of this chapter is to identify the role of central banks in managing the crisis created by the Covid-19 pandemic. In order to explore this subject, the chapter attempts to identify similarities and differences in the behavior of selected central banks, those most important from the viewpoint of the global economy.

Design/methodology/approach: The study encompassed 29 countries, mostly European economies (16) and other economies that bear the impact on the global output. The empirical analysis was based on k-means clustering analysis, which enabled us to identify groups of countries that followed similar solutions in response to the Covid-19 crisis.

Findings: The analysis conducted in this chapter indicates the diverse nature of central banks' policies and, in many cases, to a specific bias toward an increase in monetary or financial policies. The intensification of the use of the tools of certain policies must be seen from the perspective of the purpose of those policies, but also in the context of the legal or statutory constraints imposed on central banks.

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Research limitations/implications: An interesting direction of research into the diverse nature of central bank policies will undoubtedly be to seek answers to the question of the effectiveness of these policies in the context of crisis. Such a study, carried out *ex post*, may provide a starting point for designing future central bank crisis policy and implementing institutional solutions of a national or even supranational nature.

Originality and value: The chapter shed some light on the regulatory and statutory sphere of central banking. We may clearly state that key central banks of the world do not operate within the framework of a single universal rule and that there simultaneously is no optimal combination of crisis policy tools even for the same crisis. Therefore, when looking for regulatory and legal solutions, we should treat each case individually by designing regulations in a way that corresponds to the specific features and conditions prevailing in the given financial and economic system.

Keywords: central banks, COVID-19, monetary policy, pandemic, regulatory framework.

5.1. Introduction

The Covid-19 started in China in Autumn 2019 but after a short time it spread all around the world. Undoubtedly, the original nature of the crisis should be referred to the issue of people's health, but we cannot avoid its deep financial, economic, and social impact. Although we still do not know everything about the course of the crisis and its consequences, a consensus has undoubtedly been reached with regard to the basic channels of transmission of the Covid-19 crisis in the macro-economic and business spheres, i.e., a negative supply chain shock to the world economy by locking down the economy, shutting down factories, and disrupting global supply chains (OECD, 2020; Boissay & Rungcharoenkitkul, 2020; Fornaro & Wolf, 2020). It is almost certain that the aggregate demand channel is also active in spreading the crisis, but the scale of its impact is questionable.

The Covid-19 crisis must undoubtedly be perceived as a real threat, not only in terms of people's health and lives but also in terms of its microeconomic and macro-economic impact (cf. Kowalski, 2021). Governments and institutions that regulate and supervise the financial markets, along with national and supranational bodies, are taking numerous, often unconventional measures to mitigate the potential negative effects of this crisis. Central banks around the world are one of the most active players, responding quickly and forcefully to the economic and financial disruptions engendered by the Covid-19 crisis. Such an activity makes central banks a particularly interesting subject of in-depth research.

The main objective of this chapter is to identify the role of central banks in managing the crisis created by the Covid-19 pandemic. In order to explore this subject, the chapter attempts to identify similarities and differences in the behavior of selected central banks, those most important from the point of view of the

global economy. The hypothesis that central banks increasingly assume the goal of financial stability – despite their statutory goal of price stability – will be verified in this chapter.

The structure of the chapter is the following. First, we will conduct a multi-faceted analysis of the Covid-19 crisis to identify the basic mechanisms for the spread of the crisis and its impact on the global economy. Then we will discuss the evolution of central bank functions and reviewed the tools used by central banks in the crisis policy. In the next section, we will present the results of empirical research carried out on the activity and nature of central banks in anti-crisis policy. We will present some general conclusions at the end.

5.2. The Covid-19 impact: A macroeconomic perspective

Not having a laboratory at hand where they can carry out experiments, economists most often conduct considerations based on experience from similar past events. Therefore, the frequent approach in the literature is the use of the perspective of the Global Financial Crisis¹ (GFC) in assessing the effects of the Covid-19 crisis is not surprising. Table 1 includes the most important features of both crises.

As Covid-19 differs as a crisis from its predecessors and from the GFC (see Table 1), the mechanism of its impact on the global economy and the tools for its mitigation will also be different this time. The analytical study of the Covid-19 crisis should start with the original source, i.e., the coronavirus. Many studies have found that population health – as measured by life expectancy, infant and child mortality, and maternal mortality – is positively related to economic welfare and growth (Pritchett & Summers, 1996; Bloom & Sachs, 1998; Bhargava, Jamison, Lau, & Murray, 2001; Cuddington, Hancock, & Rogers, 1994; Cuddington & Hancock, 1994; Robalino, Jenkins, & El Maroufi, 2002a; Robalino, Voetberg, & Picazo, 2002b; WHO Commission on Macroeconomics and Health, 2001; Haacker, 2004; Arnold, De Sa, Gronniger, Percy, & Somers, 2006; Barro, Ursua, & Weng, 2020; Correia, Luck, & Werner, 2020). There are many channels through which an infectious disease outbreak influences the economy.

Therefore, the Covid-19 pandemic impact on the global economy (aggregate, macroeconomic approach) and the firm (micro approach) is multifaceted and differentiated according to many factors and many direct and indirect channels. The observed regularities illustrated on Table 1 result from the impact of a complex set

¹ The Global Financial Crisis is used to refer to the financial crisis that began in the U.S. subprime mortgage market in 2007. Very quickly, this crisis spread – through financial and trade contagion channels – to other economies, leading to the deepest economic collapse since the 1920s and 1930s (see e.g., Blankenburg & Palma, 2009; Crotty, 2009).

Table 1. Covid-19 crisis versus the Global Financial Crisis

Feature	Covid-19 Crisis	Global Financial Crisis
Primary source of the crisis	Coronavirus (medical dimension, Chinese market)	Subprime mortgage segments (financial dimension, American market)
Primary nature of the crisis	Human, determined by the growing number of infections	Financial, mostly limited to the banking crisis
Direct transmission channels	Globally synchronized lockdowns (sudden stop in economic activity) Supply chain disruption Financial markets (sharp repricing with the increase of uncertainty, flight to safe assets, rush to liquidity) Credit market (lenders hold back on extending credit) Unemployment (increase in the risk of defaults)	Financial markets (dramatic fall of commodity prices, increased exchange rate volatility) Credit market and banking sector channel (global liquidity squeeze, problems of “mother” banking institutions) International trade (weaker global demand, FDI channel) Stock exchange market
Scale of the crisis	Global	Global (with dominance of highly developed countries)
Primary anti-crisis policy measures	Fiscal policy-related	Monetary policy-related
Anti-crisis policy nature	“Act fast and do whatever it takes” (Baldwin & Weder di Mauro, 2020)	“Whatever it takes” (Draghi, 2012)
Uncertainty level	Extremely high	Very high
Process	Crisis is immediately and completely spreading across the real economy, evaporating supply and demand simultaneously	Crisis was gradually spreading from the financial markets to the real economy (gradual contagion process)

Source: Own elaboration based on (Draghi, 2012; Baldwin & Weder de Mauro, 2020; Boissay & Rungcharoenkitkul, 2020; Fornaro & Wolf, 2020; OECD, 2020).

of factors such as the pathway of the pandemic, the intensity and efficacy of containment policies, the scale of the economies’ openness, the dependence of the economy on a particularly fragile industry, shifts in spending patterns, behavioral changes. These are uncertain factors that interact in ways hard to predict.

Establishing precise cause-and-effect relationships among these factors and observed trends, determining the direction of these relationships, and measuring their strength seems impossible at present and would be a task that well exceeds the framework outlined in this research proposal.

Hence, from a pragmatic point of view, the following assumptions could be formulated regarding the impact of Covid-19 on the macroeconomic level (Bofinger et al., 2020; Fornaro & Wolf, 2020; Kowalski, 2021):

- the real economic impact of Covid-19 is channeled through three different optics: a) manufacturing supply chains, b) services, including tourism and transportation, and 3) energy and commodity demand and prices,
- the financial market channel impact of Covid-19 includes both the insolvency phenomenon and credit crunch,
- the development of uncertainty (i.e., behavioral lens of analysis) is crucial in assessing the long-term impact of Covid-19 on business.

There is one important trade-off that must be stressed here (Gourinchas, 2020): “flattening the infection curve inevitably steepens the macroeconomic recession curve.” The social distancing policies are purposefully inducing an economic slowdown; hence, containment policies worsen the economic recession.

5.3. Central Bank’s anti-crisis policies: Tools

The Covid-19 pandemic significantly contributed to the increase in economic instability and – according to some economists and politicians – it will be the foundation of a deep economic crisis. It should not come as a surprise, therefore, that individual countries, – but also supranational bodies – are trying to intensify all possible anti-crisis measures. In the context of the Global Financial Crisis, it is the central banks that one of the most important “guardians of stability” and, therefore, even in the current crisis, it is the central banks on which eyes of many market participants are focused.

However, the active role of central banks in dealing with the Covid-19 crisis repercussions is not so obvious, due to their statutory restrictions. Originally, the primary function of central banks was a monopoly on the issuance of legal tender. Later, central banks began to be seen as guarantors of the stability of the monetary system, and after the introduction of inflation targeting in many countries, most agreed that the central bank’s objective should be price stability. Such an approach strongly limited central banks in terms of crisis policy. Hence, there increasingly appeared opinions and specific legislative measures that indicated possibility of imposing a financial stability objective on central banks. The question whether

there might be drawbacks to involving central banks in financial stability has arisen rather recently (Svensson, 2000; 2003; Padoa-Schioppa, 2003). The main argument against giving central banks any sort of responsibility in the area of financial stability is that the latter objective would not always align with the primary price stability objective, thereby leading to socially suboptimal monetary policy. To counter that argument, scholars often stress that financial stability and price stability do not conflict with each other and that, on the contrary, one cannot be achieved without the other (Schwartz, 1988; Bordo, Dueker, & Wheelock, 2000). The more broadly defined the purpose of the central bank, the wider the range of instruments available for the central bank in anti-crisis policy.

Central banks worldwide are seeking to mitigate the immediate impact on real economy through traditional monetary policy measures, but also through some extraordinary monetary, financial and macroprudential measures. Currency devaluation, capital controls, and bail-in are the main tools available to national financial authorities, however there is no universal playbook. Basically, the tools used by central banks can be classified into three different policies, which are entirely made up of central bank policies but are assumed to have slightly differently defined main objectives:

- monetary policy focuses on the objective of price stability, i.e., the strict and direct control of money supply and the promotion of stable economic growth as an additional objective;
- external policy mitigates the effects of external economic shocks and using the exchange rate tool;
- financial policy (macro-prudential and micro-prudential) focuses on the stability of the banking sector and support for borrowers.

The use of tools of the above policies primarily depends on the institutional and legal solutions adopted, e.g., the participation of a country in a monetary union makes it impossible to use devaluation as a tool of anti-crisis policy and to prevent the spread of crisis on identified channels. The crisis triggered by the Covid-19 pandemic is not a classic financial or currency crisis, hence the actions taken by central banks are often unprecedented and, for the most part, significantly ahead of theoretical considerations in this area.

5.4. Methodology and results

The empirical analysis was based on k-means clustering analysis, which enabled us to identify groups of countries that followed similar solutions in response to the Covid-19 crisis. Clustering refers to grouping entities (here: countries) in such

a way that entities belonging to one group (cluster) display similar features and at the same time are different to those grouped in other clusters. First, we ran hierarchical cluster analysis based on Ward's minimum variance technique so as to name the appropriate expected number of clusters. The expected number of clusters is the number of groups that are optimum; any lower or higher number would mean that the objects are not properly categorized. Second, we applied k-means clustering analysis to identify which economies shared similar approach to monetary and fiscal policies during the pandemic. Both the Ward's minimum variance technique and the k-means clustering analysis were performed twice, once for monetary policy tools and, separately, for financial policy tools.

We based the study on two separate groupings, one that concerned monetary policy tools and the other that referred to financial policy tools. While the monetary policy aims to control the money supply and promote stable economic growth, financial policy focuses mostly on supporting the banking system stability, expanding access to capital, and providing borrowers with direct relief. Monetary policy must therefore be seen through the lens of macro-economic policies, while financial policies through the optics of sectoral and micro-economic policies.

In the monetary-based clustering analysis, we identified the following grouping factors:

- introduction of policy rate;
- introduction of central bank's liquidity support;
- introduction of central bank's swap lines;
- introduction of central bank's asset purchase scheme.

In the financial-based clustering we have applied the following grouping factors:

- introduction of capital buffers;
- introduction of liquidity buffers;
- introduction of adjustments to provisioning requirements;
- introduction of state loan or credit guarantees;
- introduction of restructuring of loan terms.

The study encompassed 29 countries, mostly European economies (16) and other economies that bear the impact on the global output. The grouping was made for 2 a priori identified clusters in each of the attempts. According to the variance analysis, the F-values for all factors included into the study were high, and therefore the factors reflected well on cluster breakdown. The results indicate that the aim of minimizing the within-cluster variance and maximizing the between-cluster variance was fulfilled and is presented in Table 2 below. The mean values for the identified clusters are presented in Table 3.

Table 2. Variance analysis

Factor	Between cluster	df	Within cluster	df	F-value	p
Monetary policy tools						
policy rate cuts	7.24	1.00	0.00	27.00		
central bank swap lines	1.33	1.00	3.43	27.00	10.47	0.00
central bank asset purchase scheme	1.42	1.00	5.61	27.00	6.83	0.01
central bank liquidity support	0.00	1.00	0.00	27.00		
Financial policy tools						
use of capital buffers	2.36	1.00	2.95	27.00	21.60	0.00
use of liquidity buffers	2.76	1.00	2.00	27.00	37.24	0.00
adjustments to provisioning requirements	2.36	1.00	2.95	27.00	21.60	0.00
state loan or credit guarantees	0.75	1.00	4.03	27.00	4.95	0.03
restructuring of loan terms	0.74	1.00	4.02	27.00	4.94	0.03

Note: In the case of the policy rate cuts and central bank liquidity support the within-cluster variance is 0, which does not allow for calculating the F-value.

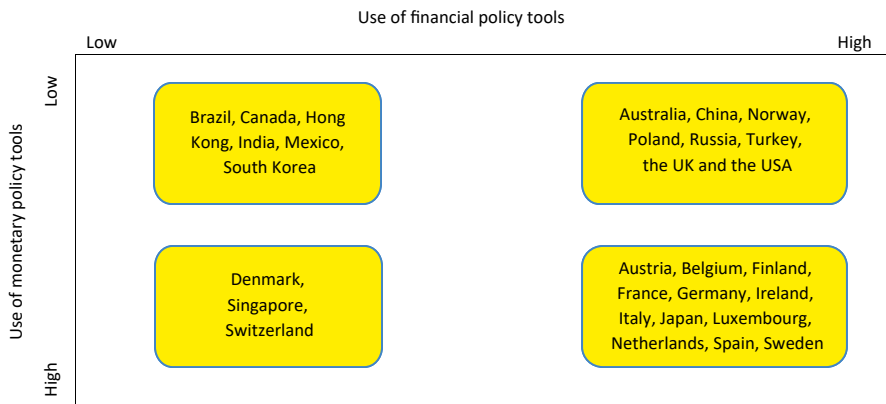
Source: Own elaboration.

The cluster analysis has created a matrix reflecting the scale of use of monetary and financial policy instruments by central banks worldwide in the context of the crisis triggered by the Covid-19 pandemic (cf. Figure 1). In the group of countries with low activity in both monetary and financial policy, there are the central banks of Brazil, Canada, Hong Kong, India, Mexico, and South Korea. In contrast, the central banks of Denmark, Singapore, and Switzerland are highly active in monetary policy (i.e., growth-enhancing measures) and low in financial policy. The situation is the opposite in Australia, China, Norway, Poland, Russia, Turkey, the United Kingdom, and the United States. This group of countries is dominated by instruments aimed at directly supporting the stability of the banking sector or borrowers. The relatively largest group of central banks are those that make extensive use of both monetary and financial policy tools. These countries include the Member States of the Economic and Monetary Union, Sweden, and Japan.

Table 3. Means for grouping measures in respective clusters

Variable	Cluster 1	Cluster 2
Monetary policy tools		
policy rate cuts	0.00	1.00
central bank swap lines	1.00	0.57
central bank asset purchase scheme	0.80	0.36
central bank liquidity support	1.00	1.00
Fiscal policy tools		
use of capital buffers	0.95	0.33
use of liquidity buffers	1.00	0.33
adj, to provisioning requirements	0.95	0.33
state loan or credit guarantees	0.90	0.67
restructuring of loan terms	0.90	0.56

Source: Own elaboration.

**Figure 1. Countries breakdown into clusters**

Source: Own elaboration.

5.5. Conclusions

The crisis triggered by the Covid-19 pandemic is currently a major challenge for central banks. Operating in many countries in an environment of low or near-zero interest rates, the banks must act using a wide range of central bank policy instruments.

The analysis carried out in this chapter points to the diverse nature of these policies and, in many cases, to a specific bias toward an increase in monetary or financial policies. The intensification of the use of the tools of certain policies must be seen from the perspective of the purpose of those policies, but also in the context of the legal or statutory constraints imposed on central banks. It can be clearly stated that the key central banks of the world do not operate within the framework of a single, universal rule, that there is a clear justification for saying “one policy does not fit all” and that there simultaneously is no optimal combination of crisis policy tools even for the same crisis. The crisis itself – although triggered by the Covid-19 pandemic – has a different course of action from one country to another, as the channels of its spread and the scale of materialization vary greatly.

An interesting direction of research into the diverse nature of central bank policies will undoubtedly be to seek answers to the question of the effectiveness of these policies in the context of crisis. Such a study, carried out ex post, may provide a starting point for designing future central bank crisis policy and implementing institutional solutions of a national or even supranational nature.

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