The International Financial System and the Role of Central Banks in the Great 2007–9 Recession and the 'Monetary Peace'

Spyros Vliamos and Konstantinos Gravas

1 Introduction

The emergence of central banks in economic history as institutions serving the public interest is a phenomenon of the twentieth century.[1] '*As had been famously recommended by Bagehot (1873 [1897]), the source of the classic dictum that central banks should address panics by lending freely at a penalty rate*', their major role was the lending of last resort in times of crisis.[2] For this purpose, it was necessary for them to cooperate with the

[1] See Psalidopoulos (2014, p. 5).
[2] See Bernanke (2013, p. 4).

S. Vliamos (✉)
Neapolis University Pafos, Pafos, Cyprus
e-mail: s.vliamos@nup.ac.cy

K. Gravas
University of Athens, Athens, Greece
e-mail: k_gravas1@yahoo.gr

© The Author(s) 2018

S. Vliamos, M. S. Zouboulakis (eds.), *Institutionalist Perspectives on Development*, Palgrave Studies in Democracy, Innovation, and Entrepreneurship for Growth,
https://doi.org/10.1007/978-3-319-98494-0_10

State. This relationship has become more relaxed over time and their relative independence vis-à-vis the State became, until nowadays, institutionally established.[3]

The evolution of central banks as independent financial institutions, played an important role in the modern design of monetary policy[4] particularly in response to the '*Great Recession*' of 2008–9 after the bankruptcy of Lehman Brothers in the US and the perceived risk of the '*direct collapse of the global financial system*'.[5] Today not only is the number of central banks around the globe approximately ten times larger compared with what existed at the beginning of the twentieth century, but since the 1990s the central banks of thirty-four countries have amended their statutes in order to strengthen the institutional functioning of the financial system.[6] As a consequence, the scientific interest in the operation and the initiatives of central banks intensified from that decade, when the history of central banking institutions became a distinct and specialized subject of economic history with the aim of drawing conclusions from the past and defining the desired steps for the future, particularly with regard to their institutional role in the contemporary international economic system.[7]

[3] See Psalidopoulos (2014, p. 5); Pollard (2003, p. 24).

[4] For an excellent overview of the idea of independence of C.B. ('The Case for Central Bank Independence') see Bernanke (2010a, pp. 2–7); Mishkin (2007, pp. 37–42) summarizes '*seven basic principles that can serve as useful guides for central banks to help them achieve successful outcomes in their conduct of monetary policy.*' These are: price stability, fiscal policy in line with monetary policy, avoiding the problem of time inconsistency between short and long period, forward-looking monetary policy in advance of long lags from actions to their intended effects, accountability as a basic principle of democracy, monitoring of fluctuations in production and prices, prevention and maintaining of financial instability.

[5] See Bernanke (2009): '*This strong and unprecedented international policy response … averted the imminent collapse of the global financial system …*'; Greenspan (2013, p. 149) characterizes the financial crisis '*in the immediate aftermath of the Lehman bankruptcy*' as '*a once-in-a-century-event*' and '*once-in-a-lifetime-event*'.

[6] See Touffut (2008, p. 1). However, the number of central banks has increased not only because of changes in the international financial and monetary system. Geopolitical developments also played an important role. According to Pollard (2003, p. 11), at the time of the creation of the Federal Reserve of the United States of America (US Fed) in 1913, there were only twenty central banks in the world. Due to two important geopolitical factors, firstly, decolonization which took place in the period after the second world war, and secondly, the collapse and disintegration of the Soviet Union in the early 1990s that led to the establishment of separate former Soviet republics, the number of central banks around the globe reached 172 by the year 1997. One year later, in 1998, the European Central Bank (ECB) was founded as the institutional independent monetary authority for the entire Eurozone.

[7] See Psalidopoulos (2014, p. 6).

The purpose of this article is the study of '*monetary peace*' as an important treaty that defines the *political economy of the recent economic crisis* through the institutional role and the coordinated action of the two leading central banks worldwide.[8] We define *monetary peace* as the coordinated action and international cooperation among USA, Germany (within the Eurozone) and China, to maintain the status quo of the US dollar as a *global reserve currency* in order to preserve the global monetary regime.[9] The authors of this chapter believe that the effective functioning of the real world depends on the existence of adequate institutional infrastructure. As Sohmen puts it, '*many economists express their theories in a weird way: they first view a theory and then ask for the institutional conditions which would render the theory feasible*'.[10] We have followed exactly the reverse procedure: we first describe the institutional preconditions for the implementation and consolidation of 'monetary peace' and then we formulate our theory. This view is supported by both Eichengreen (2014, p. 154), '… *the economic historian's approach differs in that it pays more attention to context, to politics and to institutions when evaluating both the formulation and effects of monetary policy*', and Greenspan (2013, p. 54), '*Every policy initiative reflects both a forecast of the future and a paradigm of the way an economy works.*'

In this study, therefore, we approach the evolution of central banks as powerful institutions in the international economic system under the new ideological structure (paradigm) of 'monetary peace' to tackle the 'Great Recession'. For this to be achieved, we follow the '*case study method*'. In Bernanke and Mishkin's (1992, p. 185) words '[Case studies do two things]… *First, they can help establish the historical and institutional context, an essential first step in good applied work. Second, historical analysis of actual policy experiences is a natural way to find substantive hypotheses that subsequent work can model and test formally.*'

Within this epistemological framework, the questions which will be addressed are:

[8] According to Boulding (1972), 'the *uncertainty principle in quantum mechanics (Heisenberg's Uncertainty Principle) can be generalized and transferred also in the social space. This means that the neoclassical hypothesis for an economic world that is independent (not affected) by the science is completely non-existent. In truth the economic (social) science does not explore just the knowledge of the object, but it also manufactures it.*' (Karantonis 2006, p. 191).

[9] For an introduction in *Monetary Peace*, see our recent paper Vliamos and Gravas (2016).

[10] See Karantonis (2006, p. 119).

- What was the role of Central Banks initially?
- How was this role influenced by economic and financial circumstances of the time?
- What is the role of central banks today in ensuring monetary peace after the 'Great Recession' of 2007–9?

The structure of the article is as follows: Section 2 discusses the role of Central Banks as institutions for the stability of the international monetary system. Section 3 outlines the actions of the Central Banks after the 'Great Recession' of 2007–9. Finally, Sect. 4 provides a summary and states the conclusions.

2 Central Banks as Stability Factors of the International Financial System

Experience has shown that, in order to avoid inherent methodological and research shortcomings when recording the history of Central Banks, one has to bear in mind the following:

First, studies[11] based solely on the reports of Governors and the decisions of the General Councils do not identify the activities of Central Banks both, as lenders of last resort, and as regulatory and supervisory authorities. Instead, studies based on the institutional framework of rules and regulations—in particular the international coordination of actions—are an important field of information.

Second, central bankers' personalities play an important role. Their ideas and principles form the framework within which they exercise their function. El-Erian (2014) stresses that '*Central bankers, a group of largely independent technocrats, wield more power over the fates of politicians, investors and regular folk than ever before. In the absence of government action, they are bearing most of the burden of supporting economic recoveries in the U.S. and Europe. With their bond purchases and other unconventional policies, they have become a major force holding up financial markets around the world.*'

[11] Psalidopoulos (2014, pp. 6–9) summarizes the relevant discussion about the question '*How to Write a History of a Bank*' based on an academic conference with the participation of the most respective economic and central bank historians who shared their arguments on methodological and research issues.

Third, since actions of central banking institutions do not unfold in a vacuum but at specific times loaded with particular economic and political circumstances and issues, a holistic approach of the historic route of central banks requires knowledge of both national and global economic environments. Actions at national level interact with international events and developments. Changes of this international context lead to changes of aims and objectives of the intervention of these banking institutions.[12]

The institutional arrangements in the evolution of central banks over the course of time watched the progress of globalization and the evolution of macroeconomic phenomena. '*The pattern is that each crisis leads to a new set of regulations. The banking crisis of 1907 led to establishment of the Federal Reserve. [...] The 2008 banking crisis led to Dodd-Frank,*[13] *which further limited the lending activities of banks*' (Kindleberger and Aliber 2015, pp. 239–240). As '*the political economy recognizes the fact that the performance of the economy depends ... largely upon the institutional mechanisms that society chooses to use*',[14] the gradual strengthening of the role of CBs as sovereign institutions in the international financial system should be seen as a reflection of changes in the (international) monetary system.

As these institutional arrangements gradually turned into practice, central banks '*became the repository for most banks in the banking system*'. They also '*allowed them to become the lender of last resort in the face of a financial crisis*', in other words, becoming '*willing to provide emergency cash to their correspondents in times of financial distress.*'[15]

In the post-2008 era, independent central banks in advanced economies proceeded in an unprecedented relaxation of monetary policy in order to prevent a repeat of the episode of the *Great Depression* of the 1930s. Both the Federal Reserve of the United States (*Fed*) and the

[12] Ibid.

[13] The *Dodd-Frank Wall Street Reform and Consumer Protection Act* is 'an act to promote the financial stability of the United States by improving accountability and transparency in the financial system, to end "too big to fail", to protect the American taxpayer by ending bailouts, to protect consumers from abusive financial services practices, and for other purposes.' (Congress, Public Law 111–203); 'The *Federal Reserve's post-crisis efforts to strengthen its regulation and supervision of large banks have focused on promoting the safety and soundness of these firms and on limiting the adverse effects that their distress or failure could have on the financial system and the broader economy. This orientation is consistent with section 165 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), which directs the Board to impose enhanced prudential standards on large banking organizations "in order to prevent or mitigate risks to financial stability"*' (Yellen 2016).

[14] See Vliamos (1992, p.5).

[15] See Bordo (2007, p. 1).

European Central Bank (*ECB*) which, according to Buiter, have already been '*the only two truly systemically important central banks*'[16] even before the global financial crisis, exceeded their differences relating to monetary objectives dictated by their statutes and worked in *coordination* based on the institutional and operational independence from respective governments.[17]

In practice, all actions of major central banks (mainly through the cooperation between the Fed and the ECB), which followed the outbreak of the 2008 crisis, aimed at keeping '*monetary peace*' in order to support the current monetary regime with the dominant status of the dollar as a global reserve currency.[18] For this to succeed, cooperation in the conduct of monetary policy is a necessary condition which was realized through the mutually beneficial moratoria (economic cooperation) between the three dominant Global Powers of our times: a. the United States, in America, b. Germany, in Europe (within the Eurozone), and c. China, in Asia. In light of this coordinated action, we recall that '*The problem is a general one in politics and business and centers on who should look out for the public interest*.'[19]

[16] See Buiter (2007, p. 3).

[17] In this context, 'transparency …' (with the meaning of 'information disclosure') which is '…the most dramatic difference between central banking today and central banking in earlier historical periods' (Dincer and Eichengreen 2008, p. 1), led to the strengthening of the institutional role of central banks as a crucial factor preserving financial stability within the International Financial System. '*Transparency is seen as a key element of accountability in an era of central bank independence*' (Dincer and Eichengreen 2013, p. 2); For an excellent focus on the '*world's two most prominent central banks—the Federal Reserve System and the European Central Bank*', see Pollard (2003) and especially for the differences between their respective statutes, monetary goals and tools, see ibid., pp. 19–21.

[18] See Vliamos and Gravas (2016, pp. 90 & 101). The crisis began in the United States and threatened the dominant status of the dollar as a global reserve currency. USA, China and Germany had a shared interest to preserve this currency regime. Firstly, the interest of the US to preserve greenback's '*exorbitant privilege*' was obvious. Secondly, for China, dollar stability has been vital regarding foreign exchange reserves and SAFE investments in US treasuries; a possible massive selling of both dollars and treasuries to hedge against the exchange rate risk would only accelerate the collapse of the global reserve currency. Thirdly, Germany shared the same interest to prevent the risk of a dollar collapse, because exports would have been significantly hit in case of an (abruptly) overvalued euro as a shadow Deutsche Mark; therefore, Germany cooperated with '*Chimerica*', a neologism put by Ferguson (2008) to describe the close relationship between China and [the United States of] America.

[19] See Kindleberger and Aliber (2015, p. 102).

However, current developments are hardly windfall effects. The role of Central Banks now is based on the internationalization of financial affairs and the *mentalité* developed then. Therefore current developments have evolved over time, starting from the 'first globalization' era. The so-called '*first age of globalization*' today from (roughly) 1870 until the start of WWI in 1914,[20] is regarded as crucial, both for the evolution of the role of central banks and for international currency and trade relations. The growth of global trade created favorable conditions for the expansion of lending. The development of international capital markets has contributed to better functioning of borrowing between debtors and creditors, who through the grid of trade were also producers of products and customers respectively. The monetary regime assisted the proper functioning of the system. This regime existed throughout the period of early globalization, with the system of fixed exchange rates between currencies to prevent adverse effects on international trade by sudden changes in the exchange rate or monetary crises.[21] As Eichengreen (1992, p. 3) argues in his famous *Golden Fetters*, '*The gold standard had been a remarkably efficient mechanism for organizing financial affairs.*'

The stability of the monetary regime, namely the prewar gold standard, during this first globalization period was not coincidental; it was instead the result of two different factors: *credibility* and *cooperation*.[22] Specifically concerning the period between 1880 and 1913, Eichengreen (1992, p. 5) notes that '*it was exclusively in this period that the political and economic elements necessary to establish the credibility of the system and facilitate international cooperation were all present at the same time.*' Kindleberger (1986) argues that the stability of the prewar gold standard resulted from effective management by its leading member, Great Britain, and her agent, the Bank of England, which stabilised the monetary system by acting as an *international lender of last resort*.[23]

[20] See Psalidopoulos (2014, p. 11); According to Borio and Toniolo (2006, p. 5), '*With the Reichsbank's commitment to convert its notes into gold in 1876, the yellow metal became the unchallenged monetary standard of the developed "core" of the world economy. For the following 40-odd years, until the outbreak of World War I in 1914, the "classical gold standard" provided the background for a relatively efficient and stable system of international payments, in an epoch of rapidly expanding commodity trade, record-high labour migration, and free and growing capital mobility, often called the "first globalisation".*'

[21] See Eichengreen and Bordo (2002, pp. 3–4).

[22] See Eichengreen (1992, p. 5).

[23] Ibid., p. 4.

The preservation of financial stability was also the primary goal of the '*Great Experiment*', as the founding of the Fed is characterized in academic literature.[24] Over time, '*the stability need—i.e. the need of a public institution to establish "public" confidence in a currency that has no intrinsic value—remains an uncontested argument in favour of the central bank solution*.'[25] As Akerlof and Schiller (2009, pp. 204–6) put it in terms of *Animal Spirits*, the lack of *trust* that is created in the system, a lack of *confidence* to banks as well as among banks themselves, exacerbates or even multiplies *panic*, thus creating an atmosphere of defeatism. '*After another particularly bad panic and ensuing recession in 1907, bankers and the Congress decided it was time to reconsider a centralized national bank*'.[26] Therefore, '*a collective body was, first and foremost, needed in order to treat and prevent with combined strength a prospective crisis—instead of every single bank or local association of banks struggling to meet its needs.*'[27]

3 Central Banks Actions After the 'Great Recession' of 2007–9 and 'Monetary Peace'

Therefore, today the prevailing view about central banks is that they are institutions charged with the conduct of monetary policy and protect the banking system in general and the currency in particular, i.e. institutions serving the public interest.[28] Goodfriend (2014) argues that '*Monetary policy is suitable for delegation to an independent central bank because monetary policy is about managing aggregate bank reserves, currency, interest on reserves and the general level of interest rates for the whole economy.*' and also that '*Central bank initiatives must be regarded as legitimate by the legislature and the public, otherwise such initiatives will lack credibility essential for their effectiveness.*'[29]

In the historical evolution of central banking, '*a key force has been central bank independence*'. The original central banks, which were private

[24] See Bernanke (2013, pp. 3–4).

[25] See Padoa-Schioppa (2003, p. 272).

[26] See Federal Reserve Bank of Minneapolis. 'A History of Central Banking in the United States', available at: https://www.minneapolisfed.org/community/student-resources/central-bank-history/history-of-central-banking.

[27] See Akerlof and Schiller (2009, p. 206).

[28] See Psalidopoulos (2014, p. 58).

[29] See Goodfriend (2014, pp. 113 & 118).

and independent, '*depended on the government to maintain their charters but were otherwise free to choose their own tools and policies.*'[30] In the United States, today, '*Fed independence is … the institutional foundation for effective monetary policy*'.[31] In the Eurozone since 1999, the European Central Bank is the independent monetary authority in accordance with the Treaties of the European Union that constitute primary legislation. The ECB is a (supranational) institution of the EU, responsible for monetary policy decision-making in the euro area.[32] The main objective of the Eurosystem, which is constituted by the European Central Bank and the national central banks in the Eurozone, is to maintain *price stability*,[33] thus safeguarding the value of the euro.[34]

The authors of this article believe that the lessons of the interwar period and the evolution of economic thought parallel with the globalization of the economy have prevented a recurrence of such a '*period of unease of the central banks*' (Psalidopoulos 2011, p. 44). Friedman and Schwartz[35] studied the American economic history using empirical data, developing the monetarist counter-revolution against the Keynesian view of the Great Depression in the realm of economic theory. As the latency of the Fed in the United States is attributed to reluctance or inability to '*exercise of national economic policy, as Friedman and Schwartz would have wished*' (Psalidopoulos 2011, p. 44), monetary peace today requires monetary policy cooperation and coordination at an international, not national, level.

3.1 The Cooperation of Central Banks

As early as 1921, the Governor of the Bank of England Montagu Collet Norman issued a 'manifesto' with the four principles of good operation of Central Banks:

[30] See Bordo (2007, p. 3).

[31] See Goodfriend (2014, p. 119).

[32] For a historical review of the political and economic developments that led to the Maastricht Treaty and the birth of the European System of Central Banks and the Euro, see Issing (2008, pp. 22–26).

[33] For the definition of 'price stability', see ECB (2003, pp. 11–13); ECB (2011, p. 64).

[34] See the ECB's official website, https://www.ecb.europa.eu/ecb/html/index.en.html; For the ECB's monetary policy strategy (general principles and key elements), see ECB (2011, pp. 62–64).

[35] Friedman, M., & Schwartz, A. (1963). *A Monetary History of the United States, 1867–1960.*

a. independence from national governments,
b. separation from commercial banks,
c. banking supervision and
d. (international) cooperation.[36]

The inclusion of 'international cooperation' of Central Banks as a basic principle of their institutional operation, demonstrates the important role it has always had for the functioning of the international monetary system. This, of course, does not mean that throughout the period since the adoption of the gold standard in 1876, until today, the form and the eagerness of central banks to cooperate remains the same. While economic historians disagree on the extent of central bank emergency cooperation during the classical gold standard and on its usefulness for the viability of the system, they do agree that whatever cooperation did occur was carried out on a strict bilateral basis and was undoubtedly less intense than in the years following 1914.[37] Moreover, in the academic literature, views differ as to whether at certain times there is cooperation (*monetary peace*) or controversy (*currency war*).[38]

There is also a different approach among researchers on whether the result is positive or negative in relation to the scope of international cooperation. Rogoff refers to Taylor's review for the coordination of monetary policy at an international level (*International policy coordination*) considers that '*in normal times, when economies are not over borrowed and international credit markets are fully operational, international coordination of monetary policy may be considered to be a secondary problem*' (Taylor 2013, p. 29). Still, Borio and Toniolo (2006, p. 18) studying the financial cooperation of central banks indicate that 'not *all episodes of financial instability could act as a trigger for cooperation*' and that 'as *long as such instability remained a domestic affair, there was no need [for cooperation]*'. But 'in *an increasingly globalised economy, in which financial markets knew no borders, instability could not entirely be contained within national boundaries.*'

[36] See Borio & Toniolo (2006, p. 8).

[37] See Borio and Toniolo (2006, pp. 6 and 25–26).

[38] Eichengreen (2013a) discusses the issue of 'Currency war or international policy coordination?'; See also other works of Eichengreen, Eichengreen & Sachs, Reinhart & Rogoff, Taylor; See references in Vliamos and Gravas (2016); Interestingly, in a recent blog-post, Bernanke (2016) finds '*little support for the claims that the Fed's monetary policies of recent years has engaged in currency wars*'.

Therefore, a counter argument to support the need for monetary policy cooperation could be developed as follows. Once the financial crisis broke out in 2008, the global economy was in a status of, on the one hand, over-leverage of both the public and the private sector due to a loose monetary policy in a low interest-rate environment, and on the other hand, complete financial market liberalization in a relatively weak supervisory and regulatory environment. The globalization of the economy changed the 'domestic' problem into an international one very quickly. Even six years after the onset of the financial crisis, Lo and Rogoff (2015)[39] observed that '*recent years have seen a sharp increase in public debt, private domestic credit, and external debt, all as a percentage of GDP*'.[40] Therefore in the context of this study we consider that, since the recent episode of financial instability was global, international cooperation and coordination of monetary policy held by the major central banks (especially the Fed and the ECB) is a primary need. Let alone when it comes to '*a once-in-a-century-event*' (Greenspan 2013, p. 149).

The thesis of these authors indicates that the institutional evolution of central banks may gradually, in the medium-to-long-term either lead to a *multipolar* monetary system,[41] or approach, in a next phase longer-term, a model of a *world currency*[42]; both provided that the perceptions of policy makers coexist in the direction of cooperation (*monetary peace*) rather than conflict (*currency war*).[43]

The need for policy coordination at an international level arises from the recognition of the risk of a mutually destructive outcome in the case of unilateral policy options. King (2015b) reports historical examples of policy coordination, first, in the 1980s with the *Plaza* (in September 1985)[44] and the *Louvre* (in February 1987)[45] *Accords*, and second, in 2009

[39] They examine the average statistics across twenty-two advanced countries.

[40] See Lo and Rogoff (2015, p. 9).

[41] For an excellent analysis, see the chapter 'Monopoly No More' in Eichengreen (2011, pp. 121–153).

[42] See Mundell (2012).

[43] Bernanke (2016) separates Fed's monetary policy to tackle the *Great Recession*, from the classic interpretation of '*currency wars*'.

[44] The Plaza Accord '*was probably the most dramatic policy initiative in the dollar foreign exchange market since Richard Nixon originally floated the currency in 1973. […] US officials and their counterparts among the Group of Five largest industrialized countries [G-5] agreed to act to bring down the value of the dollar. Public statements from the officials were backed up by foreign exchange intervention, selling dollars in exchange for other currencies in the foreign exchange market. The Plaza is justly celebrated as a high-water mark of international policy coordination*' (Frankel 2015).

[45] See Eichengreen (2008, p. 147).

with the meeting of G-20 countries in London. In this context he underlines that '*Today's outbreak of deflationary currency wars threatens something similar*' and he wonders '*How should the world break away from this cycle of deflationary devaluations?*'[46]

We believe that international cooperation is most likely in the following circumstances. (Eichengreen 2013b, pp. 43–44). First, when '*cooperation is institutionalized*[47]' in the sense that '*procedures and precedents create presumptions about the appropriate conduct of policy and reduce the transactions costs of reaching an agreement.*' Second, when there is an existing '*policy regime' (a set of policies and behaviors)* as '*an incentive for policymakers [central banks] to cooperate in its preservation*'. In this sense, '*much successful international cooperation is therefore of the regime—preserving type.*'[48]

This study, as it will be shown further on,[49] supports that:

a. The institutional and operational independence of the central banks (Fed, ECB) implies de jure but also de facto institutionalized cooperation in the fields of monetary policy and the safeguarding of financial stability.
b. The existing 'policy regime' should support *monetary peace*, which serves the mutually beneficial economic cooperation framework between the United States, Germany and China. The preservation of this regime leads to international cooperation between Fed and ECB, which reinforces their role as institutions within the international financial system.

By the 1880s there had been an established international monetary regime to preserve. The leading central banks provided emergency assistance to the system with the goal of preserving this regime. A typical example back in 1890 was the preservation of the sterling exchange rate and, therefore, the protection of the sovereign status of the British currency in the inter-

[46] See also King (2015a).

[47] '*One definition of an institution is a set of durable rules and understandings shaping expectations, interests, and behaviors—rules and understandings that can range from informal norms to formal obligations for what constitutes acceptable behavior and that are sometimes embodied in an organization, sometimes not*' (Eichengreen 2013b, p. 44).

[48] Ibid.

[49] In the following analysis we draw heavily on facts and arguments presented in Eichengreen (2013b, pp. 52–71).

national monetary system during the Baring crisis. More than a hundred years later, during the great financial crisis of 2008, the leading central banks provided analogous emergency assistance; the dollar and euro swap lines extended by the Fed and the ECB, with the goal of protecting a fragile banking and financial system.

International cooperation at the level of central banks also observed in two consecutive episodes in economic history, both related to the normal economic cycle: ascendant, overheating, boom (bubble), bust (burst of the bubble). In particular, it is interesting that the first episode happened to prevent the adverse effects of a financial '*boom*' in the United States which drew gold from the London market in the early twentieth century, while in contrast, the second episode refers to concerted central banks actions aiming to halt the banking crisis which occurred when the bubble created during this boom finally burst ('*bust*'). In the first case, there has been cooperation between the Bank of England and the Bank of France as both central banks '*were in contact with one another*'.[50] They cooperated in the sense that sterling support movements by the latter (Bank of France) were made in light of the mutual interest of both central banks. In the second case, the Bank of France and the German Central Bank (Reichsbank) protected the gold standard and British sterling's status in the international monetary system, as the Bank of England found itself in the eye of the storm because of the banking crisis on the other side of the Atlantic.

The reconstructing of the monetary system after World War I, founded, in a sense, the need for even greater international cooperation among sovereign institutional actors. The International Conference in Genoa, in 1922, resulted in '*an agreement under which central banks could supplement their gold holdings with reserves of convertible foreign exchange.*'[51] The aim of the systematic application of this alternative rule, i.e. restoration of the prewar status of the gold standard, was to avoid a deflationary spiral due to a mismatch between global gold production, on the one hand, and the significant rise in prices due to the War, on the other. However, it is not controversial that the agreed in Genoa connection of monetary policies in different countries, had planted the seeds of instability in the monetary system of the interwar period, which was just one factor that made the international cooperation among the central banks of these countries necessary.

[50] Ibid., p. 53.
[51] Ibid., p. 54.

The above has been questioned by academic writers such as Rogoff, Meltzer and Buiter, among others. Their position strongly opposes the thesis that international cooperation is beneficial. Rogoff (1985) demonstrates that increased international monetary cooperation may actually be counterproductive. Meltzer (2003) invokes the case of '*moral hazard*' during England's rehabilitation phase in the gold standard during the 1920s: the deviation from normal Fed monetary policy within the gold standard in order to support the Bank of England in the context of international cooperation, has led to an extremely loose monetary policy that fueled the rampant credit expansion and the credit bubble that popped abruptly at the end of the 1920s.[52] Buiter (2007), finally, states that '*coordination could make sense if monetary policy were an effective instrument for fine-tuning the business cycle*', however, '*in a world with unrestricted international mobility of financial capital … the lingering belief in the effectiveness of monetary policy as a cyclical stabilization instrument is evidence of the 'fine tuning illusion' or 'fine tuning fallacy' at work.*'[53]

Nevertheless, the monetary crisis of 1992–93 with the speculative attack on the British pound and the instability of the Exchange Rate Mechanism (ERM) highlighted the need for further institutional collaboration of monetary policy, as '*it was necessary to create a European central bank and a single European currency, as foreseen in the Delors Report in 1989 and endorsed in the Maastricht Treaty of 1992.*'[54] We consider the creation of the ECB, which is '*the monetary pillar of the Economic and Monetary Union*',[55] as a case of monetary policy coordination and a decisive step towards *monetary peace* within the European continent.

However, to make this cooperation effective, there must be a '*collective interest*'.[56] An additional strong indication for the existence of monetary

[52] Ibid., p. 55.

[53] See Buiter (2007, p. 1).

[54] See Eichengreen (2013b, pp. 70–71).

[55] See Issing (2011, p. 748).

[56] Interestingly, Eichengreen (2013b, p. 61) refers to the Gold Pool arrangement at the beginning of the 1960s, '*through which the European members committed to reimbursing the reserve-currency country, the United States, for a portion of its gold losses*'. Although this ad hoc rather than fully institutionalized arrangement '*did not resolve the fundamental contradictions of the gold-dollar system, it bought time to seek a permanent solution.*' As Eichengreen states, '*the contrast with the early 1930s is apparent. On both occasions there was an established international monetary and financial system in whose preservation the leading countries had a shared interest. But, in contrast with the high tensions of the 1930s, the principals this time were allies in the Cold War*'.

policy coordination between these two central banks of the leading economic powers came in January 2012, when under Bernanke the Fed formally adopted an explicit 2 percent inflation objective,[57] which is the same numerical inflation target according to the Statute of the ECB.[58]

The coordination of ECB's monetary policy with the non-conventional measures taken by the US Fed was a milestone for the capital markets at the height of the Eurozone debt crisis by mid-2012. In Mario Draghi's own words, '*within our mandate, the ECB is ready to do whatever it takes to preserve the euro.*' (ECB 2012a). In September 2012 the Governing Council of the ECB decided on the modalities for undertaking Outright Monetary Transactions (OMTs)[59] in secondary markets for sovereign bonds in the euro area, effectively committing itself to providing unlimited liquidity in the Government bond market of the Eurozone. This fact certainly constituted a '*regime change*' in the Eurozone and contributed to a significant decline in interest rate spreads between North and South bond yields.[60] *Monetary peace* was secured even using the loosest definition of non-(monetary) war.

3.2 IMF and Monetary Peace

Following the 2001 Argentine crisis, the International Monetary Fund (IMF) has modified the institutional framework with regards to exceptional access arrangements for a member country to borrow from the IMF. The lending framework that was in force since 2002 and was still valid with minor modifications and revisions up to 2009, provided that in exceptional circumstances, a member country could be granted a loan in

[57] See Federal Open Market Committee (2012, pp. 7–8).

[58] Particularly because this happened one year after the replacement of Jean-Claude Trichet, head of the ECB in 2011, by current ECB chairman Mario Draghi who is considered to belong to the same school of economic thought with both former Fed president Bernanke and his successor Janet Yellen.

[59] See ECB (2012b, pp. 7–9); Greenspan (2013, p. 222) characterizes ECB's OMT program as '*the ultimate weapon in the fight to preserve the euro*'.

[60] See De Grauwe (2013, p. 520); For the pressure on the central bank to support government bond prices, see also Eichengreen et al. (2011, p. 24); From an alternative point of view, Kindleberger and Aliber (2015, p. 229) argue that '*in effect, the ECB has moved beyond the role of a lender of last resort and become an informal deposit insurance agency.*' In this sense, one can assume that the ECB functioned as a hybrid of both the Fed and the FDIC (Federal Deposit Insurance Corporation).

excess of its quota. For this to be held the member's public debt had to be sustainable in the medium term.[61]

Bypassing this specific criterion of the lending institutional framework under extraordinary conditions, the IMF decided in May 2010 to grant Greece a three-year loan of EUR 30 billion (SDR 26.4 billion or 3,212 percent of quota).[62] To justify this exception, the IMF has invoked the 'systemic' risk of spreading of the Greek crisis across Eurozone, since Greece was a member of a monetary union that constitutes the second largest global economic bloc, thus requiring more flexibility in lending by the Fund in exceptional circumstances.[63] As the world economy went through its worst crisis in several decades, the IMF reformed its functions to facilitate the needs of its Member States.[64]

However, the authors of this study argue that the main reason for the participation of the IMF and the exception to the Greek program in 2010 has been to serve the objective of *monetary peace*. As the European Monetary Union still lacks an institution comparable to the IMF, the euro area made use of the expertise and assistance of IMF's fiscal adjustment programmes for the economies of southern Europe.[65] As Schadler (2016, p. 6) puts it, '*the case for IMF involvement stemmed in large part from a conviction that the IMF was the best-equipped institution for the technical rigors of negotiating and monitoring the program.*'

3.3 The Fourth Era of Central Banks

Academic literature after the 2007–9 financial crisis, questions if there is a new era in the role of central banks. Goodhart ([2010] 2011) mentions that central banks bear the following four main objectives over time:

1. price stability, financial stability,
2. support of financial needs of the State in times of war,
3. limitation of State power in normal periods (peace) from the misuse of monetary policy for political benefits.

[61] See Schadler (2016, p. 3).
[62] See IMF (2010b); Xafa (2014, p. 14).
[63] See Xafa (2014, p. 14); '*The Greek case is quite unique in the sovereign debt Literature … The debt sustainability criterion was waived based on the systemic concerns arising from spillover risks if the program was not approved.*' (Ibid., p. 12 & 14).
[64] See IMF (2010a).
[65] See Vliamos & Gravas (2016, pp. 100–101).

Furthermore, he characterizes the period from 1980 to 2007 as a '*triumph of markets*'.[66] This period coincides with the third phase as described by Reinhart and Rogoff (2013). In their words, '… *from 1979, beginning with an aggressive inflation stabilization plan until the crisis of 2007, the third phase, (an independent) Fed was guided by a mandate of price stability and macroeconomic stabilization.*' (p. 49).

These authors consider, in Goodhart's words, that we have already entered '*a fourth epoch, in the aftermath of the financial crisis of 2007–9*'.[67] In our view though, not only will the institutional dependence of Central Banks not be harmed as Goodhart (2010, 2011, p. 15) speculates,[68] but on the contrary, they will remain powerful independent institutions within the international financial system. The fourth era that we already live in, after 2010, is the epoch of *monetary peace*.

4 Conclusions

It is claimed that '*in the level of macroeconomics, overall, confidence comes and passes … It is not simply a rational prediction. It is the first and most important of our animal spirits.*' (Akerlof and Schiller 2009, pp. 60–63).

Similarly this chapter claims that self-preservation forces of the international system were developed to address the severe risks coming from the *Great 2007–9 Recession*. Central Banks as independent monetary authorities rushed to cooperate in order to preserve the global monetary regime that existed before the great financial crisis. In the words of Eichengreen (2013b, p. 44), first, '*history suggests that international policy coordination is more likely when it is institutionalized*', and second, 'a condition that favors cooperation is when there already exists a set of policies and behaviors as a "*policy regime*" that must be preserved.'

[66] See Goodhart (2010, pp. 5–6).

[67] Ibid., p. 15.

[68] Commenting on Goodhart (2010), Stanley Fisher stresses the benefits of having an independent central bank which can take an apolitical view of what is good for the economy longer term. '*One interpretation is that even an independent central bank needs to get used to the idea of working cooperatively with the government in those areas that are of mutual concern, while jealously guarding its independent right to make key decisions according to the authority granted it under the law. If not, the benefits of having a central bank that can take a longer term and apolitical view of what is good for the economy and take actions in support of that view will be lost – and that would be a costly mistake*' (p. 19).

If indeed '*social peace (consistency) is included in the value of social securing in both theory and practice of economic policy*' (Karantonis 2006, p. 248), then monetary policy of central banks which either serves exclusively the objective of price stability (ECB) or the dual objective of price stability and full employment in the economy (Fed), aims to safeguard social peace. In the words of Bernanke (1995, p. 1), if we really accept that, '*understanding the Great Depression is the Holy Grail of macroeconomics*', as '*… the experience of the 1930s continues to influence macroeconomists' beliefs, policy recommendations, and research agendas..*', then, it is not too much to say that the study of the recent period of the Great Recession starting in 2007 is an equally '*… fascinating intellectual challenge*'.

As the lessons of the Great Depression were learned for tackling the Great Recession after 2007–9, *monetary peace*, i.e., the coordinated action by central banks among U.S., Germany (Eurozone) and China, in order to maintain the status quo of the US dollar as a global reserve currency—[69] healed two fundamental mistakes made after the Great Crash of Wall Street in 1929 which led to the global economic crisis in the early 1930s. First, the contraction of the money supply, which deepened the financial crisis turning it from a recession to depression, under the assumption that the crisis was rather isolated in a domestic sphere, mainly in the USA,[70] and second, the misplaced return to the 'gold standard', reconstructed amid a different political and economic context to link currencies with gold as in the pre-war era, under the alternative assumption that the crisis was in the international sphere, hardly isolated in the American economy.[71]

Regarding the former, Friedman and Schwartz (1963, 2012) have shown that monetary policy exercised by the Federal Reserve in 1929 restricted the money supply to the domestic economy, thus worsening the recession and the financial crisis, and causing the Great Depression. On the contrary, in 2008, the successive 'Q*uantitative Easing*' Programs (*QE1, 2, 3*),[72] which were adopted by the Fed after the outbreak of the crisis with the collapse of Lehman Brothers, aimed exactly in this direc-

[69] See Vliamos and Gravas (2016).

[70] The classic interpretation of this view is Friedman and Schwartz (1963) and, particularly for the Great Depression period, Friedman and Schwartz (2012).

[71] The most influential expression of this view is Kindleberger (2013).

[72] See Bernanke (2015, pp. 417–421), where the former Fed chairman refers to the 'US Treasury Large-Scale Asset Purchase Program' which, in his view, defers in many respects from the classic term 'quantitative easing' known from Japan experience.

tion: the provision of liquidity to the financial system to direct monetary injections in overleveraged balance sheets of the banking sector. At the same time, the Federal Reserve quickly lowered short term interest rates near the zero lower bound (ZLB).[73]

Regarding the latter—the interwar return to the 'gold standard'—, international monetary relations under the regime which existed in the period prior to World War I, were more vulnerable and less effective in the interwar period that followed. Kindleberger (2013) argues that imbalances of the interwar period in the international monetary system have destabilized the global economy. The basic imbalance was created by the time lag between the decline of Britain's hegemony—and consequently of the sterling currency's status—after WWI, and the emergence of the United States as the dominant economic power—and hence the dollar as the global reserve currency—in the period after World War II.[74] The time gap concerning the transitional period until the new equilibrium in international monetary arrangements, destabilized the global economy as the political and economic landscape had changed.

Mutatis mutandis after the global financial crisis of 2008, *monetary peace* addressed the need to prevent a U.S. currency collapse as long as the Eurozone—and hence the euro—lacked the institutional conditions for approaching the status of an optimum currency area.[75] Following the outbreak of this crisis, senior officials representing supranational organizations and institutions such as the European Union and the International Monetary Fund underlined the risk of a catastrophic monetary war. In the event of the euro's failure and the demise of the Eurozone, '*Europe today would be in the throes of monetary war. France against Germany, Germany against Italy, Italy against Portugal and Spain, and so on and so forth.*', [candidate for] President of the European Commission, Jean-Claude Juncker, stated in his Opening statement in the European Parliament plenary session (July 2014), stressing that '*Thanks to the discipline and the ambitions of the euro, we have a monetary order which protects us. The euro protects Europe.*'[76]

[73] For a detailed review of academic literature, see the paragraph 'Monetary peace: the interest rate conundrum' in Vliamos and Gravas (2016).

[74] For the international role of the dollar, see also Krugman (1984).

[75] See Mundell (1961).

[76] See European Commission (2014).

Yet, monetary peace for the sake of the international financial and monetary system came at a cost of an undeclared 'economic war' in the Eurozone between North and South, which had collateral damage and casualties. The wounds are still great and many: unemployment (particularly youth), enlarged social inequality, inadequate demand for investments and asymmetry between North-South in the absence of the necessary surplus recycling mechanism. The authors of this chapter believe that the euro was always, first and foremost, a political project, not just a financial one. In the case of France a great battle was won, but not yet the war. Stratfor's Friedman predicted a war in our century by arguing that there had never been a century without a systemic war and giving the historical examples of the Napoleonic Wars of the 19th and the two World Wars of the twentieth century.[77] We would urge European leaders to end this economic war while still protecting monetary peace. At the Bretton Woods conference, Keynes suggested a 'surplus recycling mechanism'. While we are not quite sure if his ideas are more needed today than in 1944, we are certainly convinced that *in the long run we will all be dead*.

According to ECB's president Mario Draghi, the year 2016 '*ended with the [euro area] economy on its firmest footing since the crisis*',[78] while Fed chairman Janet Yellen stated in a recent speech that '… *the considerable progress the economy has made toward the attainment of the two objectives that the Congress has assigned to the Federal Reserve—maximum employment and price stability*.'[79] The '*unusual uncertainty of the economic outlook*' described by Bernanke (2010b) in the Humphrey-Hawkins testimony,[80] has nowadays been reduced as the institutional arrangements during the Great Recession shaped the scope of policy action and the successful implementation of *monetary peace*. Of course, the question put forward by Minsky (1982), '*Can this [crisis] happen again?*' requires an answer that will ultimately be given by real life. After all, '*money [as it has evolved over time] is a social institution*.'[81] In the words of Mervyn King

[77] See http://www.businessinsider.com/stratfor-george-friedman-predictions-for-the-future-2016-2.

[78] See ECB (2017).

[79] See Yellen (2017).

[80] '…*even as the Federal Reserve continues prudent planning for the ultimate withdrawal of extraordinary monetary policy accommodation, we also recognize that the economic outlook remains unusually uncertain*.'

[81] See Bank of England (2014, p. 4); For an excellent discussion of the ascent of money as a social institution, see King (2006).

(2006, p. 2), a market economy requires social institutions which represent collective agreements about how to constrain our actions. '*For example, a market economy cannot flourish in a world of anarchy in which we suspect that everyone else will cheat.*' Since the Central Banks' collective agreements prevented the collapse of the International Financial System in the Great 2007–9 Recession and established '*Monetary Peace*', they can be viewed as social institutions as well.

References

Akerlof, G., & Schiller, R. (2009). *Animal spirits: How human psychology drives the economy, and why it matters for global capitalism* (E. Kotsifou, Trans.). Princeton and Oxford: Princeton University Press.

Bagehot, W. (1873 [1897]). *Lombard street: A description of the money market*. New York: Charles Scribner's Sons.

Bank of England. (2014). Money in the modern economy. *Quarterly Bulletin*, Q1. Retrieved from http://www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q1prereleasemoneycreation.pdf.

Bernanke, B. (1995). The macroeconomics of the Great Depression: A comparative approach. *Journal of Money, Credit and Banking, 27*(1), 1–28 https://doi.org/10.2307/2077848.

Bernanke, B. (2009). Reflections on a year of crisis, Speech at the Federal Reserve Bank of Kansas City's Annual Economic Symposium, Jackson Hole, Wyoming. Retrieved from https://www.federalreserve.gov/newsevents/speech/bernanke20090821a.htm.

Bernanke, B. (2010a). Central bank independence, transparency, and accountability. Speech at the Institute of Monetary and Economic Studies International Conference, Bank of Japan, Tokyo, Japan, 26 May. Retrieved from https://www.federalreserve.gov/newsevents/speech/bernanke20100525a.htm.

Bernanke, B. (2010b). Semiannual monetary policy report to the Congress. testimony before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate, Washington, D.C., July 21. Retrieved from https://www.federalreserve.gov/newsevents/testimony/bernanke20100721a.htm.

Bernanke, B. (2013). A Century of US central banking: Goals, frameworks, accountability. *Journal of Economic Perspectives, 27*(4), 3–16 https://doi.org/10.1257/jep.27.4.3.

Bernanke, B. (2015). *The courage to act: A memoir on a crisis and its aftermath*. New York: W. W. Norton.

Bernanke, B. (2016). What did you do in the currency war, Daddy?, Brookings. Retrieved from http://www.brookings.edu/blogs/ben-bernanke/posts/2016/01/05-currency-war-daddy.

Bernanke, B., & Mishkin, F. (1992). Central bank behavior and the strategy of monetary policy: Observations from six industrialized countries. *NBER Macroeconomics Annual, 7*, 183–228.

Bordo, M. (2007). A brief history of central banks. Federal Reserve Bank of Cleveland Research (December). Retrieved from https://www.clevelandfed.org/en/newsroom-and-events/publications/economic-commentary/economic-commentary-archives/2007-economic-commentaries/ec-20071201-a-brief-history-of-central-banks.aspx.

Borio, C., & Toniolo, G. (2006). One hundred and thirty years of central bank cooperation: A BIS Perspective (February). BIS Working Paper No. 197. Available at SSRN: https://ssrn.com/abstract=891902 or https://doi.org/10.2139/ssrn.891902.

Boulding, K. (1972). Toward the development of a cultural economics. *Social Science Quarterly, 53*(2), 267–284.

Buiter, W. (2007). *Central Banks as economic institutions.* Cournot Centre for Economic Studies. Retrieved from http://willembuiter.com/cournot.pdf

De Grauwe, P. (2013). The European Central Bank as lender of last resort in the government bond markets. *CESifo Economic Studies 2013, 59*(3), 520–535. https://doi.org/10.1093/cesifo/ift012.

Dincer, N., & Eichengreen, B. (2008). *Central bank transparency: Where, why, and with what effects? in Touffut, J. (ed) Central banks as economic institutions* (1st ed.). Cheltenham, UK: Edward Elgar Retrieved from http://www.nber.org/papers/w13003.pdf.

Dincer, N., & Eichengreen, B. (2013). Central bank transparency and independence: Updates and new measures. *SSRN Electronic Journal.* https://doi.org/10.2139/ssrn.2579544

Eichengreen, B. (1992). *Golden fetters: The Gold Standard and the Great Depression, 1919–1939.* New York: Oxford University Press.

Eichengreen, B. (2008). *Globalizing capital: A history of the international monetary system*. Princeton: Princeton University Press.

Eichengreen, B. (2011). *Exorbitant privilege*. Oxford: Oxford University Press.

Eichengreen, B. (2013a). Currency war or international policy coordination? *Journal of Policy Modeling, 35*(3), 425–433.

Eichengreen, B. (2013b). International policy coordination: The Long View. In R. Feenstra & A. Taylor. (2014). *Globalization in an age of crisis: Multilateral economic cooperation in the twenty-first century.* National Bureau of Economic Research. Chicago: University of Chicago Press, pp. 43–82.

Eichengreen, B. (2014). Methodology of economic history as an approach to assessing monetary policy. *Journal of Economic Dynamics and Control, 49*, 154–155.

Eichengreen, B., & Bordo, M. (2002). Crises now and then: What lessons from the last era of financial globalization. doi:https://doi.org/10.3386/w8716.

Eichengreen, B., El-Erian, M., Fraga, A., Ito, T., Pisani-Ferry, J., Prasad, E., et al. (2011). *Rethinking central banking*. Washington, DC: Brookings Institution.

El-Erian, M. (2014). Why you should care about Jackson Hole. *BloombergView*, 19 August. Retrieved from https://www.bloomberg.com/view/articles/2014-08-19/why-you-should-care-about-jackson-hole.

European Central Bank. (2003). *Background studies for the ECB's evaluation of its monetary policy strategy* (Otmar Issing, Ed.). Frankfurt: European Central Bank, pp. 10–13.

European Central Bank. (2011). *The Monetary policy of the ECB*. Frankfurt: European Central Bank.

European Central Bank. (2012a). Verbatim of the remarks made by Mario Draghi, Speech by Mario Draghi, President of the European Central Bank at the Global Investment Conference in London, 26 July 2012. Retrieved from https://www.ecb.europa.eu/press/key/date/2012/html/sp120726.en.html

European Central Bank. (2012b). *Monthly Bulletin*, October. Retrieved from https://www.ecb.europa.eu/pub/pdf/mobu/mb201210en.pdf.

European Central Bank. (2017). Annual Report 2016. Retrieved from https://www.ecb.europa.eu/pub/pdf/annrep/ar2016en.pdf?f7090bb266c06d6c8857f41220370bfb.

European Commission. (2014). A new start for Europe. Opening statement in the European Parliament plenary session. Retrieved from http://europa.eu/rapid/press-release_SPEECH-14-567_en.htm.

Federal Open Market Committee. (2012). Minutes of the FOMC Meeting, January 24. Retrieved from https://www.federalreserve.gov/monetarypolicy/files/fomcminutes20120125.pdf.

Ferguson, N. (2008). *The ascent of money: A financial history of the world*. New York: Penguin.

Frankel, J. (2015). The Plaza Accord, 30 years later (No. w21813). National Bureau of Economic Research. Retrieved from https://sites.hks.harvard.edu/fs/jfrankel/PlazaAccord-PIIE2016.pdf.

Friedman, M., & Schwartz, A. (1963). *A monetary history of the United States, 1867–1960*. Princeton: Princeton University Press.

Friedman, M., & Schwartz, A. (2012). *The great contraction, 1929–1933*. Princeton: Princeton University Press.

Goodfriend, M. (2014). Lessons from a century of FED policy: Why monetary and credit policies need rules and boundaries. *Journal of Economic Dynamics and Control, 49*, 112–120.

Goodhart, C. (2010). The changing role of central banks. *BIS Working Papers, 326*(November). Retrieved from http://www.bis.org/publ/work326.htm.

Goodhart, C. (2011). The changing role of central banks. *Financial History Review, 18*(2), 135–154. https://doi.org/10.1017/S0968565011000096.

Greenspan, A. (2013). *The map and the territory: Risk, human nature, and the future of forecasting*. New York: Penguin Books.

IMF. (2010a, April). The IMF is changing – facing the crisis. Retrieved from http://www.imf.org/external/lang/Greek/np/exr/facts/changingg.htm.
IMF. (2010b, May). Greece: Staff report on request for stand-by arrangement. Retrieved from https://www.imf.org/external/pubs/ft/scr/2010/cr10110.pdf.
Issing, O. (2008). *The birth of the euro*. Cambridge: Cambridge University Press.
Issing, O. (2011). The crisis of European Monetary Union â lessons to be drawn. *Journal of Policy Modeling, 33*(5), 737–749.
Karantonis, E. (2006). *Theory of economic policy*. Athens: Typothito.
Kindleberger, C. (1986 [2013]). *The world in depression, 1929–1939* (1st ed.). Berkeley: University of California Press.
Kindleberger, C., & Aliber, R. (2005 [2015]). *Manias, panics, and crashes*. London: Palgrave Macmillan.
King, M. (2006). Trusting in money: From Kirkcaldy to the MPC. Speech at The Adam Smith Lecture. Bank of England. Retrieved from http://www.bankofengland.co.uk/archive/Documents/historicpubs/speeches/2006/speech288.pdf.
King, S. (2015a). Deflation poses central banks with an existential problem. *Financial Times*, March 5. Retrieved from https://www.ft.com/content/115e2c52-0940-31d2-9eed-156379abe486.
King, S. (2015b). Deflation is a global problem and needs collective action. *Financial Times*, April 1. Retrieved from https://www.ft.com/content/3f32ab43-cd32-31ec-b4ec-abd53ddaf1b3.
Krugman, P. (1984). The international role of the dollar: theory and prospect. In *Exchange rate theory and practice*. Chicago: University of Chicago Press, pp. 261–278.
Lo, S., & Rogoff, K. (2015). Secular stagnation, debt overhang and other rationales for sluggish growth, six years on, BIS Working Paper No. 482. Retrieved from http://ssrn.com/abstract=2552574.
Meltzer, A. (2003). *A history of the Federal Reserve, Volume 1, 1913–1949*. Chicago: University of Chicago Press.
Minsky, H. (1982). Can "it" happen again? A reprise. Hyman P. Minsky Archive. Paper 155. Retrieved from http://digitalcommons.bard.edu/hm_archive/155.
Mishkin, F. (2007). *Monetary policy strategy*. Cambridge: The MIT Press.
Mundell, R. (1961). A theory of optimum currency areas. *American Economic Review, 51*, 657–665.
Mundell, R. (2012). The case for a world currency. *Journal of Policy Modeling, 34*(4), 568–578.
Padoa-Schioppa, T. (2003). Central banks and financial stability: Exploring a land in between. In European Central Bank (2003). *The transformation of the European financial system* (V. Gaspar, P. Hartmann, & O. Sleijpen, Eds.). Retrieved from http://central.banktunnel.eu/pub/pdf/other/transformationeuropeanfinancialsystemen.pdf#page=270.

Pollard P (2003, January/February). A look inside two central banks: The European Central Bank and the Federal Reserve. Federal Reserve Bank of St. Louis Review pp. 11-30. Retrieved from https://research.stlouisfed.org/publications/review/2003/01/01/a-look-inside-two-central-banks-the-european-central-bank-and-the-federal-reserve/.

Psalidopoulos, M. (2011, July). *Monetary management and economic crisis. The policy of the Bank of Greece, 1929–1941*. Bank of Greece.

Psalidopoulos, M. (2014). *History of the Bank of Greece 1928–2008*. Centre for Culture, Research and Documentation. Bank of Greece.

Reinhart, C. M., & Rogoff, K. S. (2013). Shifting mandates: The Federal Reserve's first centennial. *The American Economic Review, 103*(3), 48–54. https://doi.org/10.1257/aer.103.3.48.

Rogoff, K. S. (1985). Can international monetary policy cooperation be counterproductive? *Journal of International Economics, 18*(3–4), 199–217.

Schadler, S. (2016). Living with rules: The IMF's exceptional access framework and the 2010 Stand-by Arrangement with Greece. Independent Evaluation Office of the International Monetary Fund. Retrieved from http://www.ieo-imf.org/ieo/files/completedevaluations/EAC__BP_16-02_08__Living_with_Rules_-_The_IMF_s_Exceptional_Framework_and_the_2010_SBA_with_Greece.PDF.

Taylor, J. (2013). *International monetary policy coordination: Past, present and future (December)*. BIS Working Paper No. 437. Available at SSRN: https://ssrn.com/abstract=2384452.

Touffut, J. (2008). *Central banks as economic institutions* (1st ed.). Cheltenham: Edward Elgar.

Vliamos, S. (1992). *Economic theorising and policy making*. International Economic Conflict Discussion Paper No. 56. Economic Research Center, Nagoya University. Retrieved from https://hephaestus.nup.ac.cy/handle/11728/6631.

Vliamos, S., & Gravas, K. (2016). Monetary war and peace. *Foreign Affairs The Hellenic Edition, 42*, 86–105 Retrieved from https://hephaestus.nup.ac.cy/handle/11728/8850?show=full.

Xafa, M. (2014). *Sovereign debt crisis management: Lessons from the 2012 Greek debt restructuring*. CIGI Paper No. 33, June. Retrieved from www.cigionline.org/publications/sovereign-debt-crisis-management-lessons-2012-greek-debt-restructuring.

Yellen, J. (2016). *Supervision and regulation. Testimony before the Committee on Financial Services*. Washington, DC: U.S. House of Representatives Retrieved from https://www.federalreserve.gov/newsevents/testimony/yellen20160928a.htm.

Yellen, J. (2017). *The economic outlook and the conduct of monetary policy*. Speech at the Stanford Institute for Economic Policy Research, Stanford University, Stanford, California. Retrieved from https://www.federalreserve.gov/newsevents/speech/yellen20170119a.htm.