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Central Bank Independence and economic crises: how both the fed and ECB managed to rely on unconventional monetary policies

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Abstract. *The Central bank independence was viewed in the last decades as an essential prerequisite for ensuring good monetary policies. However, the global crisis of 2009 has shown that this concept was of little practical importance. The European Central Bank, which was built as one of the most independent central banks in the world, and the Federal Reserve System, a not so independent central bank from the point of view of legal independence, reacted in almost the same manner to the looming crises. Both of them used unconventional monetary policies, for which there was little theoretical support, to safeguard their economies. Quantitative easing, forward guidance and negative interest rate are now considered common instruments in the monetary authority's arsenal. Moreover, central banks now have an extended goal, i.e. to provide financial stability. This means that they are expected to take action to prevent future economic crises by using monetary policy as a counter-cycle instrument. Given this important modification regarding the expected actions which must come from the monetary authorities, we argue that central bank independence becomes irrelevant in times of economic downturn, when they will use whatever means necessary to ensure financial stability. Political short run need will surpass long run stability as a priority for monetary decision makers.*

Keywords: unconventional monetary policy, central bank independence, ECB, Fed, quantitative easing, negative interest rate.

Introduction

Since the 1990s, political independence of monetary authorities was considered a necessary prerequisite of modern central banking. The generally accepted view was that central banks must not become a tool which the government can use to cover expenses, but the means to assure price stability in the economy. Central Bank Independence (CBI) was designed as a theoretical concept to argue for autonomous central banks, which could use whatever instruments necessary to fulfil their mandate, unaffected by political pressure. However, after the global crisis of 2009, nothing much remained of CBI. Two of the world's most important central banks, the European Central Bank (ECB) and the Federal Reserve System (Fed), both decided to use unconventional monetary policies to safeguard their economies. Worth mentioning, the Fed is generally considered a not-so-independent central bank under the control of the US Congress, while the ECB is considered one of the most independent supranational monetary institutions, outside the reach of EU member

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states. Still, when crises struck their economies they used the same set of measures to achieve financial stability, measures which were considered experimental at that time and for which there was no solid theoretical backing.

We aim to show that, in spite of their institutional differences and their alleged independence, both institutions had the same type of response in times of economic turmoil. Therefore, the next sections give an explanation of the concepts we used and assess the state-of-the-art in what concerns unconventional monetary policy. They are followed by a narrative empirical analysis of central banks' behaviour and conclusions. Given the fact that unconventional monetary policies are experimental and relatively uncertain related to their long run effects, the only possible reason left for the ECB to adopt the same set of measures as the Fed is political pressure.

Literature review

A short literature review on central bank independence

The principles governing monetary policy in the last two decades require central banks to be independent and their instruments to target inflation (Bean et al., 2010; Johnson, 2016). Independence and inflation targeting would assure maintaining price stability, which, in turn, would keep the economy safe and sound, encouraging an overall increase in the welfare of citizens. An exception from the principle of democratic legitimacy, CBI refers to the insulation of monetary policy from political influence. The central bank's autonomy would help avoid political pressures in electoral cycles, when politicians would benefit from a rise in inflation on the short run, enough to create temporary economic growth at least in records, in order to get reelected. Also, the separation between monetary policy and fiscal policy would avoid the dangers of debt monetization. Capie (1995, p.8) defines independence as the *"right to change the operating variable without a challenge from or a consultation with government."*

The concept of central bank independence was first discussed during the interwar period (Whale, 1939), after over 250 years since the founding of the first precursor of a central bank in Sweden, in 1668. The high inflation of 1960-1980 brought back the idea that independent central banks could control inflation. One of the first efforts in assessing the effectiveness of an autonomous central bank are those of Milton Friedman in his 1962 book chapter, *Should There Be an Independent Monetary Authority?*. Friedman (1962) considered that control over the money supply and CBI could be compared to the judicial power when it came to their relationship with the government. In his view, the independent central bank would be part of the government, autonomous, outside direct parliamentary control, subjected to a monetary Constitution and judiciary control. Still, central bank independence would not be his favorite solution as it opposed democratic accountability and depends on the personalities of central banks' governors. He discussed the alternatives of a commodity-standard or a rule-based money creation systems.

Nonetheless, the concept of (legal) independence of central banks was based on academic articles published by Kydland & Prescott in 1977, Barro & Gordon in 1983 and Rogoff in 1985. The first two demonstrated and detailed the *time inconsistency theory* (or the *dynamic consistency problem*), according to which future anticipations and reactions to policy changes modify in real time the outcome of these public policies, becoming

inconsistent with the initial expected results. Predictable rules are preferred to discretionary decisions, as they deliver better results and avoid inflation bias. Rogoff (1985) developed a model that could explain why central banks around the world were given at the time *"a significant measure of political and fiscal independence"* (p. 1180).

In practice, two events from 1989 set the trend onwards: the Delors Report on Economic and Monetary Union in Europe established the framework for the future European Central Bank (ECB) and incorporated a high degree of monetary policy independence while the Reserve Bank of New Zealand received a clear mandate of maintaining price stability (and a target for inflation) and significant independence from the government.

Research in the following years developed measures of independence and investigated the relationship between CBI and price stability and its effectiveness. Although not all studies were conclusive, they helped build the aforementioned consensus on CBI and inflation targeting as essential to optimal monetary policy[1].

Finally, we have today what the ECB (2017) defines as being an independent central bank, a concept that actually overlaps with the definitions once reviewed by Eijffinger and de Haan (1996). Thus, maybe the most important component, *functional and operational independence* (known also as *instrument independence*) presumes that central banks can use whichever tool they consider suitable to achieve their goals. Also, in the ECB's (2017) provisions, functional and operational independence include the central bank being prohibited from directly financing government debt[2]. Eijffinger and de Haan (1996) puts instrument independence together with goal independence (who decides on the mandate of the central bank and monetary policy objectives) under the umbrella of policy independence. *Institutional independence* means that a central bank *"does not seek or take instruction from any institution, government or other body"* (ECB, 2017). Another subcategory, independence of the personnel hired in a central bank, known as *personal independence*, refers to protection against arbitrary dismissal, but also to the manner in which appointments of the central bank executive board members are made, in connection to government/political interference. *Financial independence* assumes the central bank has all the resources it needs to conduct its everyday activities by having access to part of its income generated by seignorage.

The global economic crisis of 2009 and the proliferation of unconventional monetary policy have undermined the foundations of CBI. Central banks' response to the recent crisis meant that policy decisions were actually politically motivated as we shall further see. The interaction between central banks' asset purchases strategies and government debt management has cast a shadow on the relevance of central bank independence and whether the concept can carry any practical use.

The theory behind unconventional monetary policies

Unconventional monetary policies are a rather recent story. Japan was the first to use them back in the 1990s (Kuroda, 2014). They gained an important role during the severe period of economic downturn known as the *"Great Recession"* in the US. Between 2007 and 2009, the world's most developed economy experienced a severe economic bust fueled by the financial sector[3].

During the *"Great Depression"* back in 1929, Fed was criticized, even by relatively liberal economists like Milton Freedman, for not using its lending powers in a sufficiently aggressive manner. The American central bank was determined not to make the same mistake in 2007, when the recent economic crisis struck. Moreover, the Fed was forced to innovate monetary policy by introducing different instruments which are now usually referred to as *unconventional* monetary tools.

A central bank, regardless of country, is expected to design and implement monetary policy. Monetary policy is nothing else than a set of instruments by which the central bank influences the monetary stock in circulation, i.e. the quantity of money. *The traditional levers* used by central banks to attain this goal are: *open market operations, the reference interest rate and minimum reserves requirements*.

Unconventional monetary policies commonly refer to a different set of policies among which one could include (Federal Reserve Bank Of St. Louis, 2016): *quantitative easing, forward guidance and negative interest rates*.

While variations in the minimum reserves requirements have relatively evident effects on the total money stock, let us dwell on the other two mechanisms*. "Open market operations"* is a term commonly used to refer to operations by which the central bank can buy or sell assets. The assets which the Fed normally buys are Treasury Bills with a maturity of 3 months. The purpose of this strategy is to influence the short term interest rate on the loan market. However, in the case of *quantitative easing*, which is a specific case of open market operations, the central bank buys *"unconventional"* assets like long term Treasury Bills (with a maturity of, for example, 30 years) or other assets which are not government issued securities (Federal Reserve Bank Of St. Louis, 2016). The purpose of such an action is the attempt of the central bank to control the long term interest rate which was traditionally outside the scope of monetary policy.

The reference interest rate is a simple concept and refers to the interest rate at which commercial banks can borrow funds overnight from the central bank. However, in the case of the Great Recession, the record low interest rates practiced by the Fed (reaching practically 0 percent interest) were not enough. They needed to be backed-up by the promise of the central bank to also keep interest rates down in the future. This was thought to act like a verbal guarantee offered by the monetary authorities to the commercial banks that they can continue to issue new credits without the fear of a future bankruptcy. This type of promise made by the central bank to act in specific ways in the future is now referred to as *forward guidance*.

Were all these innovative policy tools backed up by economic theory? Not really. The theoretical framework behind unconventional monetary policies consists solely of ad-hoc concoctions of scattered theoretical fragments and of what is commonly referred to as New Keynesianism (Williamson, 2014). The general idea behind the latter is that central banks must do everything in their power to prop up aggregate demand. If the reference interest rate has already reached zero, the only additional action that central banks can take is to promise to keep the same rate in the future. This can affect *expectations* on the market and it is the main reasoning behind *forward guidance* (Federal Reserve Bank Of St. Louis, 2016). Regarding quantitative easing, the issue is more complicated. There seems to be no consistent theoretical reasoning behind it, but it is largely believed to be a success because,

as the former Fed chair Ben Bernanke (2014) said, "*The problem with QE is that it works in practice, but it doesn't work in theory*".

Even if we do not take Mr. Bernanke's claim at face value and continue to look for a theoretical justification for QE, we can find little results. In a speech held in 2014, Haruhiko Kuroda, the governor of Japan's central bank, mentioned that among the first prescriptions for QE came in 1998 from Paul Krugman when the aforementioned bank was confronted with deflation at near zero interest rates. Krugman's solution consisted in heavily raising the monetary stock and inflation expectations by the central bank. His theoretical justification consisted largely in a form of *naïve Keynesianism*[4]. If the authorities would not address the problem in that particular way, they would be confronted with a *liquidity trap*. Krugman's original thesis was further developed by economists such as Michael Woodford and Gauti Eggertsson to formulate policy prescriptions based on the expectations of private entities (Kuroda, 2014) . However, these are the theoretical claims that lie behind the idea of forward guidance, but do not prove that increasing the central banks' balance sheets with risky and illiquid assets can in any way benefit the economy.

There seems to be a general consensus that in spite of their possible short run benefits, unconventional monetary policies are at best unpredictable and at worst detrimental in the long run (Borio and Zabai, 2016). One obvious effect of using unconventional monetary policies is that central banks converted overnight in one of the most active and important players on the market. The market became dependent on the actions of the central bank, both in the case of the Fed and the ECB. Moreover, there is the problem that central banks will have absolutely no maneuver space for the following recession because they already hit rock bottom. It appears that the traditional role of targeting inflation (keeping the consumer price index at approximately 2%) became a secondary goal of central banks which now move towards a broader approach to monetary policy.

Methodology

The paper intends to clarify concepts before giving an empirical narrative explanation on the topic of central bank independence and its relevance to unconventional monetary policy. Therefore, we use the case study method and basic statistical analysis in our research.

In terms of central bank independence, we will discuss the analysis and comparison of the two central banks' institutional architecture in a future paper. We use previous research to prove our point on the difference of autonomy between the ECB and Fed. Dincer and Eichengreen (2013) evaluated in 2010 central bank independence worldwide by using four different well-known measures of CBI. In each case, the European Central Bank ranked third out of 89. In opposition, the Federal Reserve System, the central bank of the United States of America, ranked at the bottom of the list, among the ten least independent central banks in the world.

Next, we assess the effects of monetary policy instruments by analysing official empirical data provided by ECB Statistical Data Warehouse, when it comes to the European Central Bank, and by Federal Reserve Bank of St. Louis Economic Data Add-In for Excel, when we investigate the Federal Reserve System's policy measures. We created visual

figures to better explain the narrative behind the ECB's and Fed's actions. Tabels summarize official information found on the institutions' websites.

The relationship between the two central banks' key policy interest rates is revealed both by visuals and by using the STATA programme when computing Pearson correlations. Also, we make use of basic statistical processing of official data regarding central banks' balance sheets to further discuss unconventional monetary policies.

Results and discussions

The death of CBI and the proliferation of unconventional monetary policy

Both central banks, although inflation targeters, lowered their key interest rates in order to deal with the Great Recession and the euro-zone debt crisis. Below, in Figures 1 and 2, we have the overnight interest rates that show real negative interest rates in both cases (inflation higher than monetary policy interest rate) – for Fed since January 2008, except for the deflation period of January-October 2009; for ECB since September 2010. Inflation has been volatile, but hasn't skyrocketed.

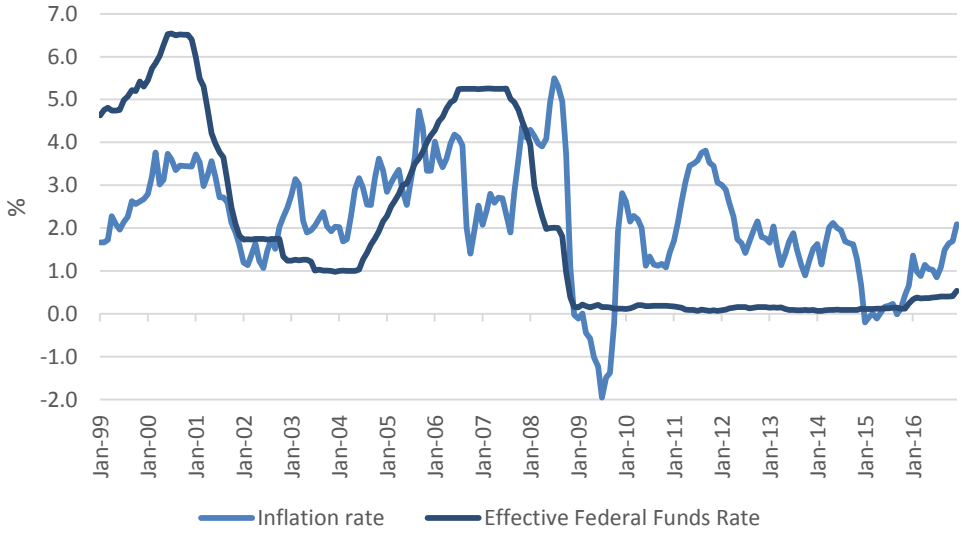

Figure 1. Monetary policy interest rate & inflation: Fed

Source: Federal Reserve Bank of St. Louis.

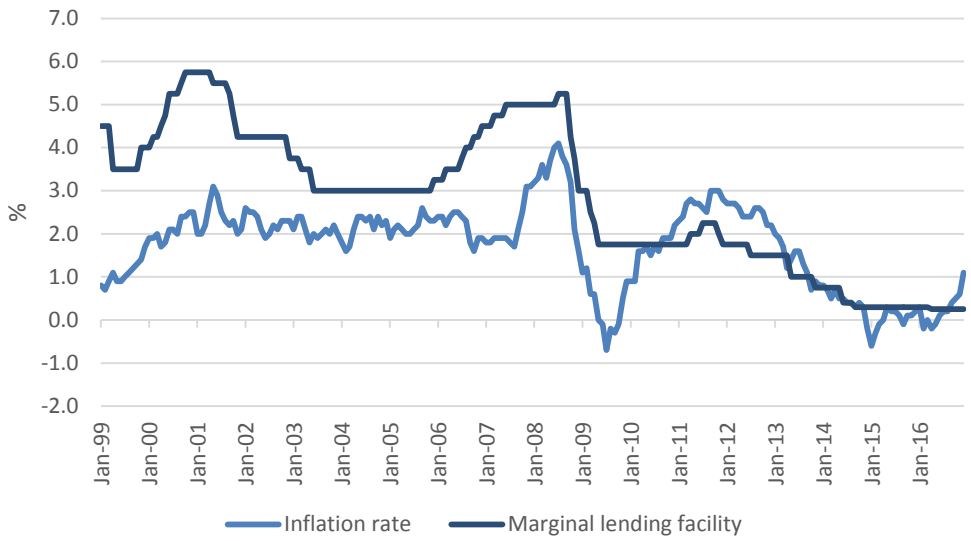

Figure 2. Monetary policy interest rate & inflation: ECB

Source: http://sdw.ecb.europa.eu/.

Each time, the ECB seemed to react slower than Fed and at a smaller extent. One can observe just by looking at the two figures, how the marginal lending facility mimics the evolution of the effective federal funds rate. Additionally, Table 1 shows a strong positive association between the two types of monetary policy interest, with a time lag taken into consideration. The results are significant and confirm the hypothesis that ECB is following the Fed's lead.

Table 1. Pearson correlations for the time period January 1999 – December 2016

Variable 1	Variable 2	Coefficient	N
Effective Federal Funds Rate	Marginal lending facility (lag of 2 months)	0.8156***	224
Effective Federal Funds Rate	Marginal lending facility (lag of 10 months)	0.9070***	216

Note: significance at ***p<0.01. Source: Authors' own calculations.

The Federal Reserve implemented quantitative easing before the ECB started its own purchasing programmes, buying especially toxic assets. It started in November 2008 and operated five such programmes, the last one ending in October 2014 (see Table 2).

Table 2. Quantitative easing programmes implemented by Fed

Programme	Period	Purchase
QE1	25.11.2008 – 31.03.2010	MBS, T-bills
QE2	3.11.2010 – 30.06.2011	T-bills, government bonds, treasury certificates
Operation Twist	21.09.2011 – 12.2012	Long-term treasury certificates
QE3	13.09.2012 – 10.2014	MBS – 40 billions USD per month
QE4	01.2013 –10.2014	Treasury certificates – 45 billions USD per month

Source: http://www.federalreserve.gov/.

The European Central Bank began using unconventional monetary policy in particularly the same way, only that its response to the crisis was somewhat slower. After

lowering it refinancing rates, it reached the conclusion that the measure was not sufficient. The contraction of credit on international financial markets influenced the European banking structure as well, where a lack of credit due to nationalistic pressures was already present. This geographical fragmentation of the financial markets led to the second period of the European crisis – the sovereign debt crisis of 2011-2012. The ECB responded with quantitative easing programs, raising the maturity of their operation and diversifying the assets they purchased. Still facing deflationary pressures in 2013, the ECB took an additional step concerning the use of monetary policies – it became the first major bank to practice *negative interest rates* on their deposit facility (Cœuré, 2016).

The ECB changed temporarily the requirements for eligible collaterals, accepting junk bonds from the indebted countries with financial problems as collateral[4]. The ECB also established a temporary framework, the securities markets programme through which it directly purchased Greek, Irish, Italian, Portuguese and Spanish government worth 219,5 billion euro in two episodes: May 2010 – March 2011 and August 2011- February 2012. The programme was followed by Outright Monetary Transactions in September 2012, continuing the purchase of sovereign bonds from the secondary market. In June 2014 and March 2016 Targeted longer-term refinancing operations were initiated, while the Asset purchase programmes, active since March 2015, manage the purchase of different assets on a monthly basis, including government bonds (ECB official website, 2017).

As Cukierman (2013) notes, both central banks expanded their balance sheets by acquiring dubious financial assets, with the Fed having a much higher expansion rate which also let to *de facto* negative interest rates. Figures 3 and 4 show the size and composition of the two central banks' balance sheets (assets side). Basically, any operation for which the central bank pays money creates an entry on the assets side. In 2016, the world's largest central banks held assets in a total of approximately 30 percent of the world economy (Mourmouras, 2016).

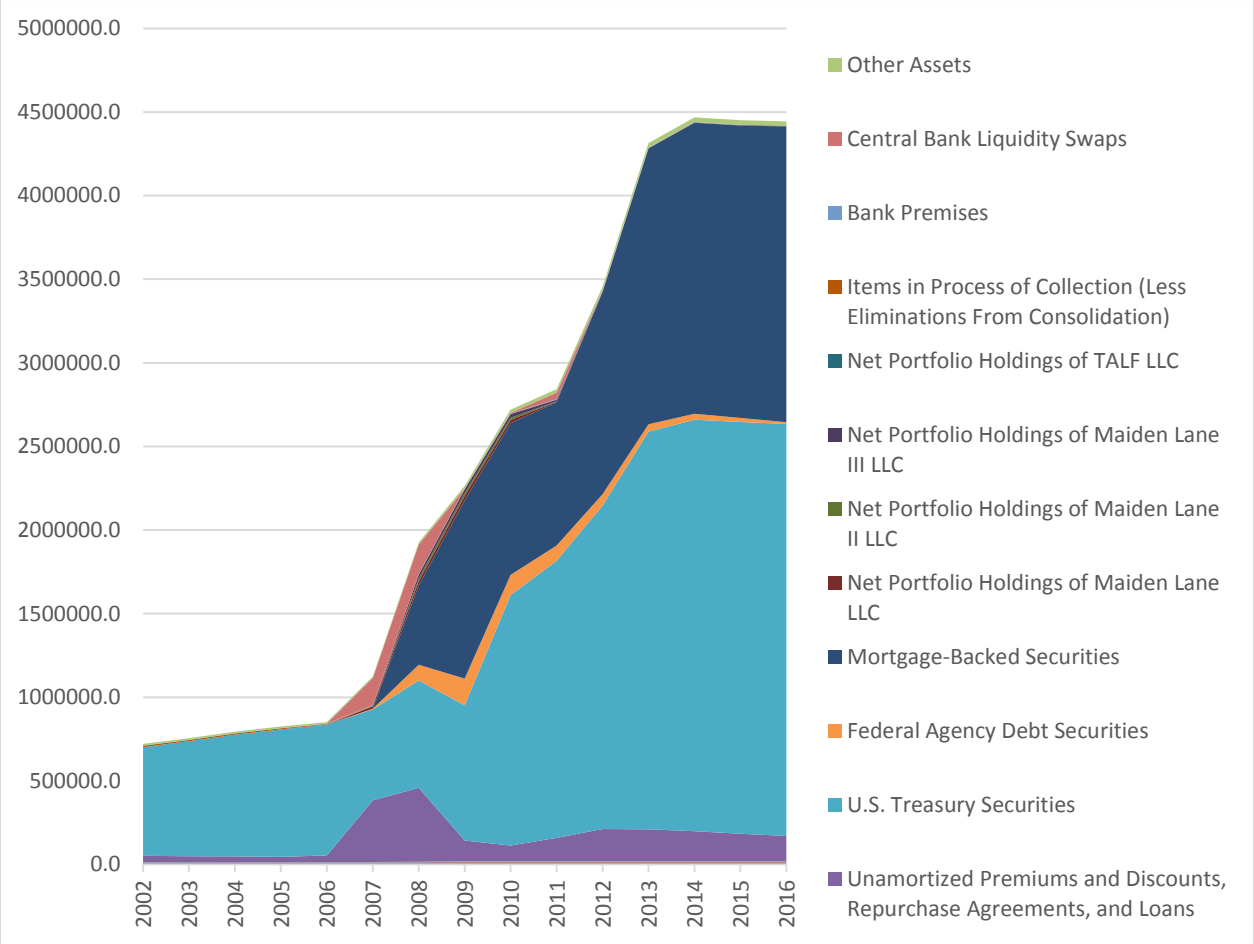

Figure 3. Fed's balance sheet : assets

Source: Federal Reserve Bank of St. Louis.

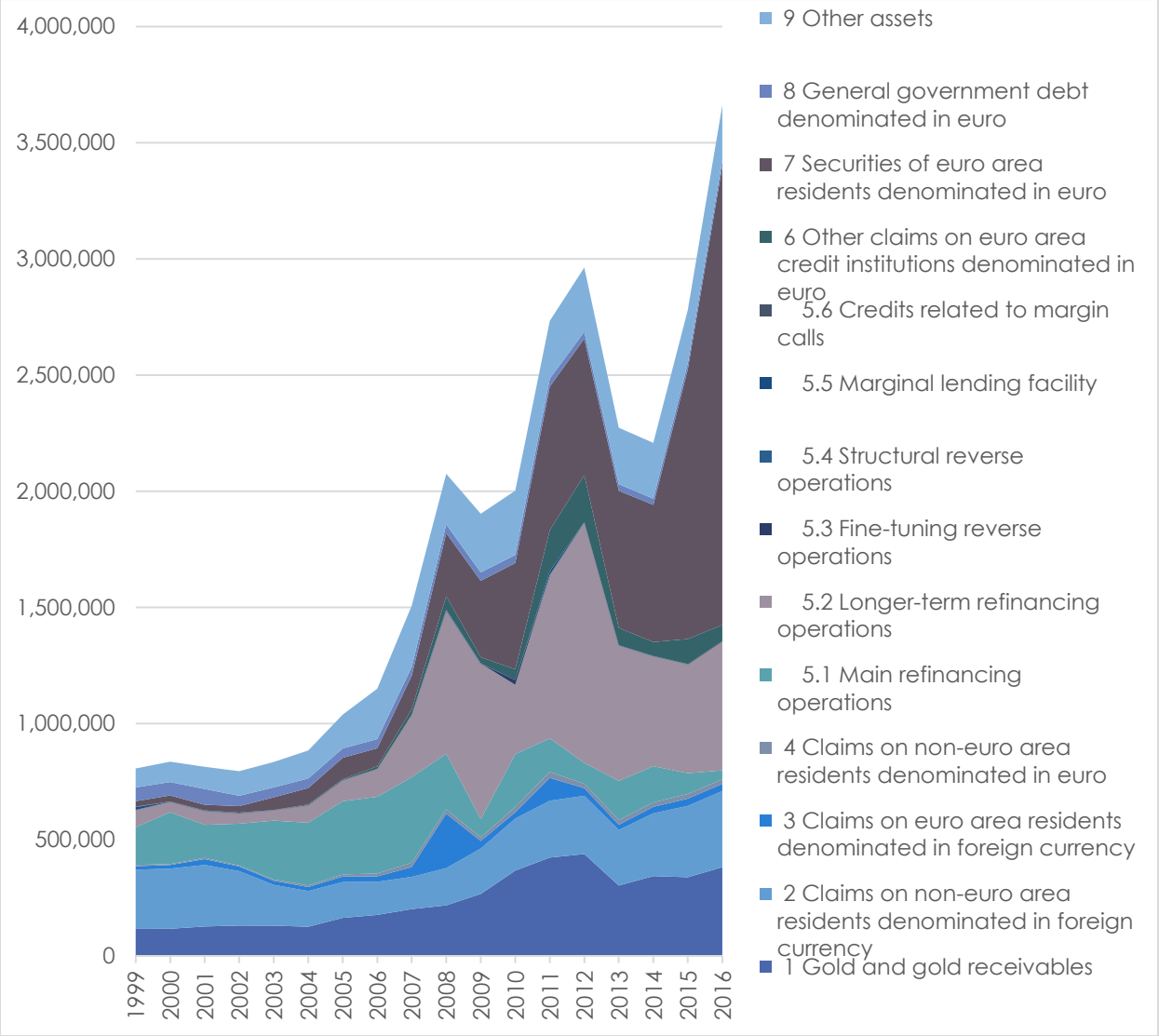

Figure 4. ECB's balance sheet : assets

Source: http://sdw.ecb.europa.eu/.

In both cases we can see that there was a tendency to increase the balance sheet until 2016. The effects of quantitative easing (QE) are equally visible. As we previously explained, QE referred to the situation in which a central bank buys *"unconventional"* properties. A considerable part of the assets held by the Fed are now mortgage backed securities and not the traditional T-bills, although these have also increased in number. In the case of the ECB, there was a visible increase in long term refinancing operations (LTROs)[5]. There is no doubt that mortgage backed securities were *"toxic assets"* (Liebowitz, 2008) and that a lot of debt issued in the Eurozone by bankrupt governments (such as the case of Greece) is not likely to be paid back. Thus, both the ECB and the Fed have accumulated a large amount of debt of a somewhat dubious nature.

The investigation in Table 3 of the two central banks' expansion of their balance sheets (assets side) reveals the peak of the crisis, 2008. This is when the highest rates were registered, with Fed playing a more active role on the financial market. There is one difference, however: ECB implemented monetary policy operations aimed at sterilizing its previous liquidity injections – see for example, year 2013.

Table 3. Expansion rates (%) of central banks' balance sheets between 2003-2016

	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16
ECB	5.0	5.9	17.5	10.7	31.1	37.6	-8.3	5.2	36.5	8.4	-23.3	-2.9	25.9	31.7
FED	4.9	5.0	3.8	3.2	37.7	73.4	11.2	18.6	4.4	21.3	24.7	3.5	-0.4	-0.2

Source: Authors' own calculations.

What persuaded central banks to take such unprecedented actions? As discussed in previous sections, behind these extreme measures was not economic theory. The only plausible answer in this case appears to be political pressure. It is true that central banks were *experimenting* with unconventional monetary policies, but their goals cannot exist in a political vacuum. There is ample room for debate whether such a public policy is desirable or not. The Fed has always been considered a not-so-independent central bank. But we have shown above that the ECB, one of the world most independent central banks, has been using the same monetary policies as the Fed, the only difference being a time lag between the two. It becomes evident that CBI, if it ever was anything other than an abstract notion, will be first sacrificed during economic turmoil. Even today, when the global crisis has been replaced with fragile economic growth, the prospects of CBI in the future look pretty dim.

Conclusion

Two of the most important economic and political actors in the world, the United States of America and the European Union, have a different institutional architecture of their central banks. The Fed is considered one of the least independent against the government central bank, while the ECB is seen as a model for monetary policy autonomy.

Still, they both undertook similar unconventional monetary policies that led to somewhat different results. At least at a first look, it may seem that Fed managed to end the recession and avoid unwanted inflation effects, although one cannot say exactly how these results were achieved. The ECB followed the lead with a time lag and obtained somewhat weaker results. Despite liquidity injections, inflation is under 2%. Cukierman (2013) explains this anomaly, high rates of money creation and no or small inflation, as a result of banking system's increased demand for liquidity coupled with increased demand for safe assets. The latter can easily be observed just by looking at the high rates of excessive reserves held by banks with the Fed. Finally, they both modified their balance sheet, expanding them by purchasing assets of low quality.

The general consensus on optimal monetary policy may change again, now that the role of lender of last resort not only to commercial banks, but to governments as well, has received such an attention. Central bank independence doesn't seem to play the crucial role it once had anymore. The Fed didn't need autonomy to act in times of crisis, while the ECB

stretched its prerogatives into fiscal and economic policy during the sovereign-debt crisis and also reduced its formal independence by submitting to the member states' needs of debt financing.

Notes

1. For a thorough literature review summarizing the research results of tens of studies or/and adding their own findings, see Eijffinger and de Haan (1996), Berger et al. (2001), Cukierman (2008), Hayo and Hefeker (2010) and Balls et al. (2016).
2. The interdiction to lend to public-sector authorities is referred to as financial independence in Eijffinger and de Haan (1996). We find the name to be misleading and therefore remain to ECB's terminology that also overlaps with recent studies, such as that of Balls et al. (2016).
3. It is not the purpose of the present article to explain the causes of the crises. Suffice to say that it was fueled by credit expansion and that the housing market played a key role. For a detailed analysis of the role played by the housing market in economic crises see Liebowitz (2008).
4. We used the term naïve Keynesianism because it utilizes a highly inflationary interpretation of Keynes' arguments, which most probably Keynes himself would not agree with. There are numerous documented sources which point out this fact. For example, Humphrey (1981) clearly states that Keynes was generally against inflation and warned the public about its perils.
5. See *"Monetary policy instruments: Expired legal acts"* at <https://www.ecb.europa.eu/ecb/legal/1002/1014/html/index-tabs.en.html>
6. A LTRO represents a low interest rate credit offered to Eurozone banks, with the acceptance of sovereign debt as collateral. Depending on the case, the loans can be repaid in three months, six months, one year or three years.

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