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## CENTRAL BANKING IN THE NEW ERA\*

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### Abstract

This paper analyzes the evolution of central banking, and in particular the American experience of central banking. It provides projections for the future of central banking in the new era of post 2008. The paper initially demonstrates recent improvements in the financial and banking sectors, regulations and different measures of monetary and financial rules both in the USA and the rest of the advanced economies. Then, it claims institutions, such as central banks, will gain new objectives and more significance in this new era and thus will be given new roles, over time and along with the improvements and deepening in the financial system. The paper argues centuries long central bank evolution is not complete yet and that more objectives should be expected to come forward. In that line, there is need for a shift in the conventional policy measures. New trends in central banking such as the helicopter money, popular nominal GDP targeting regime and the retro developmental central banking are all critically analyzed. The paper provides a breakdown of financial development and central banking activities in a historical context and provides a rationale and a new basis for possible future innovations.

**Keywords:** Monetary Policy, Central Banks, Quantitative Easing, Inflation Targeting, Nominal GDP Targeting

**JEL Classification:** B25, E42, E58, F33, G28

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### 1. Introduction: Central Banking Practices

We are witnessing birth of an all-new era, both for the world economy and the financial system. Post the Global Financial Crisis of 2008-09, the world economies are converging downward and are in urgent need of new stimulative policy actions. As pointed out in Bagis (2017), monetary policies have also been diverging, given the downward convergence in real economic activity. The Washington Consensus era of the post-1980s around the world and the Gramm–Leach–Bliley Act (GLBA) of 1999 already mark turning points in the financial system. Yet, they also point to a new era of growing substance of central banks as the ultimate power holders. They have even occasionally stepped in to even “Save the World” and their power has been increasing monotonously ever since (Ramo, 1999).

The Global Financial Crisis of 2008-09 was, indeed, a great opportunity to start a promising new era for national economies. Most world economies had a chance to jump-start their sluggish economies, bring down the unprecedented leverage, increase regulation and ensure sustainable economic growth looking forward. Instead, they missed that opportunity by just focusing on the expansionary, large-scale Quantitative Easing (QE) policies of the Fed and

\* This paper was inspired by an economic history class at UC Berkeley.

various other forms of rate cut policies. Hence, central banks further increased their market power.

Many economists agree, today, that the QE policies were actually needed to escape another Great Depression (see among others Del Negro *et. al.* 2010). Yet, as for the possible effects so far, there is also a significant concern that the unconventional policies of the post-2008 period might actually have distorted the equilibrium of the world economies. Meanwhile, there is a harsh criticism that the majority of the extra money (such as the QEs in the US) might actually have been transferred solely to the very rich.

One thing is for sure, though, that the central banks have eventually turned into the only game in the town of policymaking, El-Erian (2016). Governments, especially those in advanced economies, have turned to central banks as the only source of stimulus. Other possible policy measures were ignored for the most part. As summarized by El-Erian (2016), the Central Banks have done more than they should usually do. And that, now, it is time that the governments step in to take more responsibility to improve on conditions for the long-term growth.

King (2016) also provides an insightful discussion on how to suit up with and change the banking and the financial system in this new era and an objective analysis of the key issues the modern financial market setup is yet missing. King (2016) rightly specifies that the Great Recession of 2008 seems more like a natural outcome of the weird incentive mechanism of the modern financial system. The problem now is that, even eight years after one of the biggest financial crisis of the post WWII crisis, these bad incentives (along with excessive risk taking, exploitation and increased capitalization) are still alive in the money markets.

What we recommend here, instead, is that central banks should also change their focus. The focus should change from a pure inflationary obsession towards a combination or midcourse of more realistic objectives such as real economic growth, financial stability, inequality, unemployment as well as more international cooperation. The value-added of this paper is that it provides a historical perspective on the changing nature of central banking and provides rationale for shift towards a new era in central banking. The new era also requires a focus and a dwelling on the history of how we ended up with such a financial stewardship.

This importance is also partly about the growing power the central banks have gained particularly since the early 1980s, and post-the-Volcker period at the Fed. After the 2008 crisis, this power has increased further as it was believed to be needed more. Past-the-1980s and in parallel to the central bank independence arguments, economists had a broader consensus on having the monetary policy implemented by technocrats, who would be exempt from political pressures and could easily focus on lower inflation targets. Especially given the fact that fiscal policy was a common tool used by politicians to create political business cycles. Independence of the Fed was taken more seriously and countries such as England even handed over full autonomy to their central banks. This idea eventually led to the central bank independence concept of the modern world.

Along with central bank independence, management of expectations, transparency and accountability have all been key policy tools of policy makers, in particular post the 1970s. They were indeed helpful in dealing with nominal volatilities of the post 1960s period. Together, they all built the Neo-liberal approach in central banking. However, as we witness emergence of a new era, it is clear that the central bank benefits should not be limited to the 'lower inflation' achieved post the Washington Consensus period. The Washington Consensus period, itself, corresponds to a new global economic governance time period of free market policies adopted by leading western governments. It required more emphasis on a democratic society; and individual property rights were considered as necessary requirements for a sustained economic growth path.

Elias and Jorda (2013) show, for instance, that over the past few centuries the financial crises have been less frequent and the damage they have created has lessened since the formation and dominance of the central banks. Likewise, Jorda *et al.* (2012) show that the number of countries affected by a shock to a big economy has been consistently decreasing, excluding in the exceptional 2008 crisis. In that sense, central banks and effectiveness of their policies are crucial components of a process towards preventing repeat of the Great Depression.

The crisis tendency is overall downward trended over the course of the past two centuries, Jorda *et al.* (2012). This trend is clear up until the late 1960s. This period corresponds to a time-period when both the number and the independence of the central banks around the world have increased over time. Yet, considering just the central bank independence trend since late 1970s, the crisis tendency seems to go up again. We believe, this is a good sign that the central bank policies have not always been effective after the 1970s.

As another example for the importance of central banks, it could be argued that the modern central banks, with their independent positions, could be a guarantor that countries will not need any other alternative costly measures or new institutions against any adverse scenarios. This is a major issue, in particular if you consider that many today believe that the main reason countries had protectionism back in the 1930s was that they did not have any alternatives due mainly to the Gold standard of that period. In that sense, maybe the institutional development of today's world and even further cooperation, as proposed by Eichengreen *et al.* (2011), Eichengreen and Irvin (2009) and Krugman (2013), is a guarantee and necessity for prevention of the repeat of the Great Depression.

The paper is an attempt to contribute to the critical analysis of the evolution of the modern central banking practices. In this context, it analyzes and discusses whether the amount of regulation and the goals really matter and whether there are any new objectives deeply needed to be added to the current mandates. It further attempts to foresee what new objectives we would need to add to the current central bank mandates for a better functioning (and more effective) financial system. In addition, the paper asks whether the type of banking or regulation going on in a country do indeed matter for the economic development of the country.

The paper claims that institutions such as central banks will be given new objectives and tools to use, and possibly more authority and expanded roles with the developments to come and the evolution of the financial system. Over time, as the financial markets get deeper and more complicated, the central bank functions and their primary roles will be more critical. This increasing importance is out of necessity rather than a choice. More importance, placed upon the central banks, may also require complete independence for better functioning. This paper is built upon a question as to whether the evolution of central banking is complete. It contemplates on answers to a question such as 'what else should we expect to be added to those current mandates?'

The paper will continue as follows. The rest of this section discusses transformation of the central banks over time. The second section analyzes the new era of post 2008 and the world economy in this new period. The third section talks about new trends about central banking and new objectives in the new era. The fourth section goes over suggestions regarding the future of central banking. The fifth section concludes the discussion, and finally the last section summarizes the paper.

### **1.1. Central Banks: Evolution of the Primary Goals over Time**

The role and responsibilities of the central banks have been changing ever since they first emerged in the late 17th century. Following Capie *et al.* (1994) and Epstein (2005) and in an effort to capture their evolution over time better, we will shortly mention a list of their functions over time. They have, indeed, obtained a wide range of objectives, spreading out from the bank of the banks in the funds market (the commercial banks' bank) to being the bank of the governments (providing funding for government deficits) and from the lender of last resort (in particular during the crisis), to the ultimate monetary policy authority.

They have even been using capital and exchange rate controls to maintain the exchange rates stable and broadly speaking, central banks have been expected to follow one or more of the following three available paths;

- The distributive role of the central bank allows it to redistribute the resources via its interest and credit policies, to different group of people or industries.
- The allocative role lets the central bank impact the access to credit and profitability of various industries of the economy.
- Their political role (depending on whether they are independent of the governments

or not) and the focus on primary goals (of whether inflation or growth for instance).

The modern neo-liberal central banks, for the most part, focus on the distributive and the political roles amongst all the three, Epstein (2005). They redistribute income to different groups or classes of people and promote their neo-liberal policies over all the others. There is yet a new and growing focus on the long-forgotten allocative role via the recent developmental central banking trend (especially in developing economies).

Central banks, conventionally (commonly in the conservative neo-liberal tradition), buy and sell the short-term government bonds and other notes to conduct the monetary policy. Yet, they are separate institutions from the finance ministry or the other commercial and investment banks in the market. They must also remain independent of any political pressure due from fiscal policy or political concerns. The nature of relationship between the governments and the central bank authorities also varies a lot among countries.

It should be kept in mind that most of the central banks were founded either as banks of the governments or as banks of the financial system, in order to fund the fiscal deficits of the governments or the liquidity needs of the banking industries. Indeed, the Fed itself was established in response to the need for a lender of last resort; in particular, it was founded during the most severe banking crises of the pre-1914 national banking era.<sup>1</sup> It was designed as a lender for the regional banks to avoid financial panics and the bank runs that the American economy had to face almost every decade before the WWI (Shachmurove, 2011). When the Fed was first founded, it was a very passive institution, and its main mandate was only the discount window, used to provide elastic currency to the banks in need. Then, in the 1920s, it started using OMOs, by buying and selling bonds in the open market.

At its core, the central banks have so far been basically the ultimate monetary authority and the lender of last resort. On the other hand, in developing economies (such as Turkey) and advanced economies (such as England) they claim to focus on domestic price stability mainly and are rarely concerned with the economic recovery. Eichengreen *et al.* (2011) characterize the entire standard (or the post 1980s neo-liberal) central bank objectives and the current framework as a mere flexible inflation-targeting course. This conventional focus on price stability was formed by high inflation period in most of the advanced economies during the 1970s; and the same problem was observed in emerging economies in the 1980s and the 1990s (Eichengreen *et al.* 2011).

While the ideal initial goal had been just to focus on financing governments and printing money; the more recent conventional focus has shifted to fighting high inflation and in some cases high unemployment rates. Especially, after the Great Recession, a lot more newcomers have been discussed to be added up to the conventional objectives. More emphasis on financial stability, bank supervision and international coordination; as well as a new focus on allocative (developmental) central banking are just a few of the proposed goals that have been brought forward recently.

This is, indeed, a huge improvement. In particular, considering the BOE, even until very recently during the 1920s, used to function mainly as a bank for the British textile industry. It resulted in a catastrophe, though. The Fed, on the other hand, was initially founded as an institution that maintained gold convertibility and kept the dollar stable. It was focusing on (in addition to providing emergency lending to the banks in need) providing enough money for retail and wholesale transactions (medium of exchange) only. Admittedly, the two not-promising examples above show that the central banks, with their expertise on banking, money and credit, should only be charged with the basic macroeconomic and financial market issues: Nothing more or less.

Yet, recently they have been under attack. Broadly speaking, from the past few centuries' experience, it seems as if they are needed for and should primarily focus on monetary policy at macro level. Friedman and Schwartz (1963) famously argued that the banking sector

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<sup>1</sup> The 1907 financial crisis (or the banking panic) to be precise. Before that, and from 1864 to 1913, the US had a federally regulated national banking system (in which each bank was issuing commodity-backed money).

with its fractional reserve system was 'inherently-unstable'. This instability, he meant, comes from the mismatch between the long-term assets (loans provided) and short-term liabilities (deposits) accompanied by the fractional reserve system. The role and authority of central banks have been evolving consistent with that argument and in parallel with the developments in the financial system. More recently, supervision and financial stability, as proposed by Pellegrina *et al.* (2013) and Eichengreen *et al.* (2011), have been offered as new mandates to be added to that list.

Back in the days, it was believed that the FDIC had made the banking sector 'panic-free' (Friedman, 1959; Gorton and Metrick, 2010). However, the time has shown that the financial system is indeed still, if not more, panic-prone. With a certain amount of deposits being insured by the government (via FDIC), the banks actually have started to take more risky portfolios into their balance sheets (Rajan, 2005). Kareken and Wallace (1978) argue that it is, indeed, the FDIC itself that necessitates a regulatory or supervisory authority. They show that, under the assumption that the bank balance sheets are transparent and open to all creditors and depositors and that the bankruptcy is also costly, bank liabilities are indeed safe and there is no need for the FDIC (or any other type deposit insurance).

Overall, the role and responsibilities of the central banks have been growing ever since they first emerged in the late 17th century. Since then, they have actually been very active on the financial markets. Yet, the modern central banking did not come about until the emergence of the commercial banking problems of the 20th century. So, the modern central banks and their functions have been moving together with innovations in the commercial banking activities.

## **1.2. The Post 1980s Central Banking**

The Post-1980s central banking approach is built on the idea of an explicit rule or set of rules for implementation of monetary policy, hawkish (inflation-averse) central bankers and an independent central bank. Together, they constitute the three most important rules for a credible and optimal central banking practice and optimal outcomes. The Americans led the trend and in emerging economies such as Turkey, the same liberalization process would start in the 1990s. For instance, in Turkey, the Central Bank of the Republic of Turkey (CBRT) was still lending to the public institutions (such as the Treasury) and even to the private sector firms, up until the 1980s. Monetary policy was still connected to the fiscal policy in the 1980s.

Post the 1980s, the advanced economies went with inflation targeting (IT) that is still popular among most of the world central banks. On the other hand, most of the developing or emerging economies focused on exchange rate targeting, another effective regime that was quite popular from the 1980s until the late 1990s. Starting from early 2000s, IT became the dominant policy regime. Yet, that trend is doomed to change after the 2008-09 financial crisis.

As is pointed out by Bernanke (2005), a broad literature shows there is actually a strong positive link between the central bank credibility and the effectiveness of its policies. Rogoff (1985) suggests that an independent central bank (conservative) is a critical first step towards a credible-commitment problem in policymaking. Appointing a central banker that is clearly suggesting a particular objective (such as a low and stable inflation in the neo-liberal central bank case) is another key point to take into account.

Kydland and Prescott (1977), on the other hand, show that the economic outcomes get much better if policymakers are able to make credible commitments about their future policies. In a way, if the market believes that the central bank will not deviate on its promises, then the overall outcome will be much better. Likewise, if the central bank targets and the goal sets are credible, then as public will be behaving accordingly, it will be easier to achieve specific goals. Wage and price demand will be more moderate, and this will positively affect the inflation expectations and realizations.

Walsh (2010) provides comprehensive evidence from literature for an independent central bank leading to lower output and price level volatilities, and much lower inflation rates. Yet, there is also the Stiglitz (1998) criticism that basically argues that the central bank independence frequently brought up by neo-liberal economists is a lot exaggerated and at best unnecessary, as it has not been very effective or extremely beneficial for countries that have

implemented. Stiglitz (1998) bases his argument on the Great Moderation performance of the advanced economies (where central banks have been independent for at least past few decades) and the emerging economies where central bank independence has been mostly undermined.

The metaphorical Walsh (1995) contracts show how a common understanding or discrete deal between different organs of the government leads to an effective, credible and optimal monetary policy. The contract between the central banker and the government sets both a credible and optimal policy and also makes the central bank accountable and transparent in its objectives and policy actions. A trivial outcome from Walsh (1995) and the related research would be that the governments had better set specific targets and benchmark objectives for the central banks; then let them act independently and finally observe and analyze their performance. In a way, setting policy tool independence and then assigning particular objectives for the central banks.

The new modern consensus is that a central bank's primary concern should always be a balance between the short-run flexibility and the long-run discipline. They should find a way to deal with both; and never focus on just one at the expense of the other. The Fed's recent policy framework has also been shaped around the short-run instrument flexibility and the long-run targets that provide a discipline for its policy actions. Bernanke (2013) defines this approach as a constrained discretion: discretion for short-run stability that is constrained by not violating the long-term goals.

Central banks, under normal circumstances, are expected to act very slowly and make more predictable decisions. In other words, they are expected to commit on policies they have announced and pursue them for a foreseeable future. This would make their policies more credible. The usual trend, at least among the advanced economy central banks, is to follow this trend. And seldom, you would observe diversions from this trend, as was the case during the recent financial crisis. Yet, discretionary policy decisions are also becoming very common. So what is the ultimate solution?

The literature is not perfectly clear on the subject. Kydland and Prescott (1977) focused on the importance of time consistency of economic policy. In their 1977 paper, they analyzed whether central banks should have discretion in setting their monetary policy or rather have strict numerical rules, such as the Taylor rule that will be explained below or specific targets such as an inflation targeting, in using their policies. Their conclusion was that the central banks had better use some rules to implement their policies. Based on that, it would not be wrong to claim that the simplest way for institutions to commit to a policy is to follow a policy rule, showing clearly how they plan to respond to a future shock. Following simple rules as proposed by the 'rules vs. discretion' literature, kicked off by Kydland and Prescott (1977), makes things easier and ensures high quality policymaking. So, the solution might be simplicity and transparency.

As an example, inflation targeting was, at its core, thought to help avoid the time-inconsistency problem. The central banks would achieve time-consistency by using the inflation target as a nominal anchor and pegging the inflation expectations to some certain targeted levels. And, in the advanced economy sample, it did actually work for a long period.

In the broader picture, the primary policy goal to be achieved and the main purpose of economic planning and policy-making are to trigger a positive response from the real economy. Under discretion, if conventional policy works; then, you either 'manage expected future short-term rates' or substitute that for cutting short-term rates. Under the ZLB (zero-lower-bound), commitment policy suggests committing to low interest rates for a long period in the future; and an overshooting of long-run inflation rate demanded (Eggertsson and Woodford, 2003). If the ZLB binds, though, you cannot substitute cutting the short-term rates for managing expected future short-term rates. You would need to use unconventional policies instead.

In the US, up until the mid-1970s, the Fed used interest targets (the discretionary monetary policy). Starting from the late 1970s to early 1980s, the Fed used money supply target by following a money supply rule, as suggested by monetarists, mostly due to the stagflation in the 1970s. Since 1982, though, the Fed has been using the discretionary monetary policy again. Most economists agree that a well-functioning monetary policy was definitely one of the key

sources of the Great Moderation period of low volatilities. The Fed used more systematic Taylor rule policy and focused mainly on price stability. Monetary policy, therefore, followed the rule (and even the Principle) and hence meant less policy instability. The Taylor rule itself is named after its developer, Prof. John B. Taylor of Stanford University, who first proposed this rule in 1993. The rule emphasizes that the central banks tighten their monetary policy when output exceeds its potential level or when inflation is above the acceptable level. The central bank would apply to expansionary measures when the output and inflation are below the corresponding benchmarks. The Taylor principle portion of that rule, on the other hand, requires that the short-term federal funds rate be changed by more than the change in inflation, in order to ensure the real economy effects are realized.

The world is going through a tremendous transformation period today, though. And, this paper claims that, looking forward; central banks will assume a dominant real sector and economic growth targets, in addition to their current occupation with the nominal targets. It further presumes that the central banks in emerging market (henceforth EM) economies will focus more on growth targets, while those in advanced economies are more likely to focus on stabilization and nominal targets.

## **2. A New World of the Post-2008**

The 2008-09 crisis, or the Great Recession if you wish, was a turning point for the world economy. Regardless of their development level, most world economies are witnessing extremely low trade volumes and growth rates; and are all in need to find new means to increase the growth and trade. Following this trend of low growth, low inflation and even low investment, Pimco has introduced the concept of a new normal or new-neutral (Clarida and Bass, 2015). The new era has brought in a new equilibrium and a new normal for the world economies.

Back in early 2008-09, and following the onset of the crisis, the western developed economies predominantly went by the Keynesian expansionary policies. Developing economies, on the other hand, waited to benefit from the unprecedented liquidity injections. Yet, those good days are long gone. Monetary policies are diverging, nowadays (Bagis, 2017). Even among the developed economies... The Continental European and the Asian giants are replacing their Anglo-Saxon (and partly Japanese) counterparts to keep the global liquidity at its record high levels. Yet, it is still not clear for how long.

In terms of central banking and their monetary policy implementations, the August 2014 Jackson Hole meeting marks a key turning point. The meeting showed clear policy divergence across the world economies. It was right post that meeting that the Fed decisions highlighted this increasing divergence among the big world economies. In particular, as the Fed and the BOE have ended their QE policies and started tightening their policy measures; the ECB, the BOJ and the PBOC have recently focused more on unconventional tools. Nominal rates are rising in the US and dollar is getting stronger.

The Fed has started following a more dovish stance. The ECB has backed up its decision to take the rates further down the zero bound. The PBOC has decided to fight against the currency volatility and the speculative attacks aggressively. The two recent very popular criticisms today, over central-bankers, are:

- the rock-bottom rates: central banks have decreased the interest rates people earn on their savings, down below the ZLB,
- and the continuously increasing prices: creating inflation and hence devaluing the money.

Meanwhile, the world economies are currently dealing with low-inflation and low-growths. El-Erian (2016) claims the world economy has reached the top of a T-junction where it will head towards one of the two sides of the diameter at the top. While, one of those sides heads towards a high growth, less uncertainty and financial risks and tightening inequality conditions; the other one is very likely to head towards the opposite.

There are, indeed, a lot of signs that monetary policies are also diverging across the national economies. At the beginning of 2016, there was another round of huge volatility in the

financial markets of, in particular, the developing economies. The uncertainty and the resulting volatility was based upon expectations for another round of expansionary monetary policy by the central banks of the EMs.

As pointed out in Bagis (2017), tens of central banks have so far expanded their monetary base. While policy divergence is clear among the developed economies, emerging market economies are also expected to tighten, in an effort to deal with relatively higher inflation dynamics. Russia, Brazil and Turkey are just a few examples, where inflation is realized above the target, tighter monetary policy is expected to bring the inflation rate down.

Meanwhile, most policy experts and international financial institutions such as the IMF recommend that the developing economies should focus more on stimulating the real economic activity and the potential growth. They also point to new financial stability measures to deal with the adverse impacts of the common capital outflows from the expanding advanced economies such as the US.

One thing should be made clear at this point, we believe, “the Lehman effect over the global financial system is still not diminished completely”, (Bagis, 2017, pp. 31). Most of the advanced economies, and even the EM economies are much worse off compared to their potential production levels of pre-crisis.

A summary of the few ongoing significant issues in the world economies, nowadays, could be summarized as follows:

- The fundamental structure of the modern financial system and the banking industry (such as the positive nominal interest rates, incentives to take excessive risk, exploitation etc.),
- the increasing power and role of the central banks (towards the only game in town – El-Erian, 2016) for macroeconomic stability,
- small investors still do not bear the risk of excessive risk taken by their banks and other financial institutions; they just benefit from any gains,
- big investors still gain from the too-big-to-fail property of their respective institutions. Central Banks still have to bail the big financial institutions out,
- increasing capitalization: for instance, JP Morgan Chase currently holds the total market share of the top 10 banks of the 1960s together (FRED, 2016),
- another significant issue is the global macroeconomic instabilities: Currency market volatility and market manipulations by sovereign governments is a huge issue.

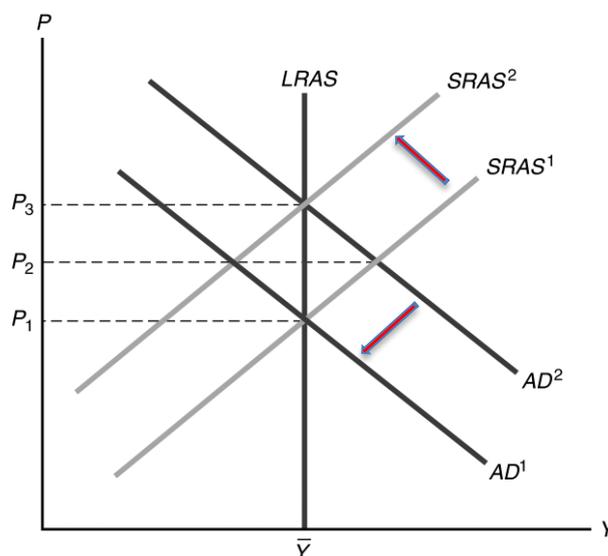
Together, they form a significant potential financial instability on the part of the national economies. What's worse, not much effort is put to reverse the retrogression. Overall, as was discussed at the beginning, most world economies had a chance to jump-start their economy after the 2008-09 crises. Instead, they missed that opportunity by just focusing on QE and rate cut policy of the central banks.

## **2.1. The Changing Nature of Shocks and Economies**

Both the Great Depression of the 1930s and the Great Recession of 2008 were, at their core, caused by severe demand shocks. Yet, during the Great Depression, because of failure of international cooperation at the World Economic Conference in 1933, many countries moved to the first-best monetary measures. Those that did not use the monetary measures were broadly accepted as bonded by ideological and political factors; not to use them. The same constraints, at least to some extent, made the international cooperation hard in 2008 again. That very same issue continues today in the US, the Eurozone, the UK and Japan; in that, they all are using unilateral QE policies again and there is not much international coordination.

In the 1930s, as all countries faced the same deflationary shocks; the first-best monetary responses were optimal. Many countries applied to these policies during the Great Depression, some countries responded by secondary capital control and trade restrictions. For instance, some countries replied to the currency depreciating monetary expansions with monetary expansion. An international coordination was not needed in the 1930s, since the deflationary shock was symmetric across countries. The first-best unilateral responses were global optimum. In the 2008 case, on the other hand, international coordination is important.

They need to deal with the spillover effects to the other economies, for instance. If shocks to different countries are asymmetric, as in the 2008-09 crises, there is uncertainty (that demoralizes agents) in the market. The modern argument is that it is of critical importance, but gains from international coordination might actually be small according to Eichengreen (2013).



**Figure 1. An inflation targeting central bank would deepen the negative effects and increase the real effects of a negative supply shock**

Meanwhile, the changing nature of shocks between advanced and developing economies should also be kept in mind. As pointed out by Bhandari and Frankel (2015), supply shocks are more common amongst the emerging market economies. Bad weather, political and financial instability, civil wars, input cost, technology and productivity shocks are all crucial issues to be contemplated. Advanced economies, on the other hand, are more prone to demand shocks. Consumer preferences and related demand volatilities and even interest rate volatilities play an important role in these demand volatilities.

This changing nature of shock is of crucial importance. While an inflation targeting central bank would work very well in case of a demand shock, it would potentially deepen the crisis in a supply shock case (see figure 1). This is because, in a demand shock example, the monetary policy aims to reduce both the output volatility and price volatility. However, as is clear from figure 1, in case of a supply shock, an inflation targeting central bank tightens money supply to decrease the inflation rate and this contraction would decrease the output level further down.

Moreover, the advanced economies usually have more horizontal SRAS curves (as prices are stickier) and hence conventional monetary policy (that shifts an AD curve) works much better and is much more powerful than it would be in a developing economy.

## 2.2. Implications for Policy-making in the New Era

The modern means of central banks have made the policymakers and the central bankers heroes of the modern times. Central Banks have turned into the ultimate lenders of last resort for all the policymakers, as the other institutions are silent (for instance, the fiscal policy). And as they are turning into the only game in town, they have become more popular and sometimes even misleading.

It should be reemphasized that central banks have been successful in eliminating the volatility, in particular after the 1980s. However, one should not forget about increasing inequality, slowing growth rates (all around the world and in particular after the 2008-09 crisis), and less cooperation in the wake of this new complicated century. Accordingly, as the theory of

economics and the views of the theory are being reevaluated; here, we criticize the stance of the central banks just as the rationality assumption behind the theory of economics science is being critically analyzed today.

Financial markets are much deeper today, more complicated, and systematically important; yet, they are also more delicate and riskier than they used to be decades ago. Rajan (2005) and Clark (1994) point to the new innovations in the financial markets and the recent deregulation trend of the 2000s (in particular that of post-1999) as two of the critical factors behind the crisis prone market structure of today. They also claim that both of these factors have also decreased efficacy of the conventional policy measures. Hence, new policy measures were in order.

In particular, after the Great Recession of 2008-09, discussions over monetary policy regimes have increased. More and more people have elaborated on the need for a shift in monetary policymaking around the world. Change seems to be in order. But then, when and how? That is the question left to be answered.

Post the Great Recession of 2008-09, central banks have gradually received more and more attention as the financial markets have already deepened and the need for a stronger, more proactive central lender of last resort, regulatory and supervisory agency have increased. Emergence of the unconventional tools has brought the standard tools such as the well-known Keynesian interest rate tool and inflation targeting regimes under question. Policy experts and academics have recommended moving from the retro inflation targeting trend to new alternatives such as the nominal GDP targeting.

This is not all new to those familiar with the Fed or the PBOC practices. Post-the-1980s (the Washington consensus period, in particular), there has been a gradual but significant shift in the idea of central banking.<sup>2</sup> Their objectives and practices have changed all over the world. They have historically been used to finance the government deficits, manage the exchange rates; and have used capital controls, credit allocation policies and in some cases even provided various economic sectors with direct credit, using their various credit and loans policies. In particular, financing the governments and managing exchange rates were the two primary objectives. In many cases such as the BOE, they even existed for one of these reasons in the first place. The modern (post-1980s) neo-liberal central banking trend, though, is drastically different from all these dominant historical practices.

This changing trend is, for the most part, an outcome of the circumstances. For instance, most of the today's world economies are dealing with relatively high (at least in the conventional sense) inflation rates that we would not observe in the 19th century gold standard. High inflation rate, itself, is partly result of the recent trend of transition from a managed economy to a more liberal market economy (for the retro Eastern Bloc economies, for instance). Central bank independence, in these economies, is usually deferred in favor of a full control over the economy. This transition period as well as specific supply side shocks such as the oil-crisis of the 1970s has led to much higher inflation rates and hence the need for a broader focus on controlling the inflation rate. Meanwhile, a stable currency is another key issue for a successful market economy.

The liberal transformation or the axis shift of the countries and their institutions such as central banks continued on that trend till the 2008 crisis. The recent subprime mortgage crisis (rooted at the ninja loans, in particular) in the US and the debt crisis in the EU (the EMU, in particular) have, once again, brought under question the role of these regulatory institutions and all of the possible optimal policies at their discretion. Central banks are probably the most important institutions in a country, for its conduct of the two most significant, influential and commonly used policy instruments: conducting the monetary policy and acting as a regulatory institution over the country's financial sector (for financial stability).

To summarize and to reemphasize what makes a new era in central banking an important case study, in the first place; we have to underline,

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<sup>2</sup> The same trend would continue up until the 1990s, in Turkey. *The central banks* were still used as the banks of governments even post the WWII; and also the new theories were just being implemented at the time. So we needed some time to see their exact influence.

- The current chronic problems of the financial markets,
- The post 2008-09 criticism over central bank policies and their efficacy,
- The negative policy rate and private sector rates trend around the world,
- Changing nature of shocks,
- Increasing inequalities around the world economies,
- The deflation problem of the modern era as opposed to inflation issue of the past,
- Increased complexity and the deregulation process,
- Decreasing growth rates and confidence in national economies,
- New alternatives discussed at influential central banks (such as the Nominal GDP Targeting discussed at the November 2011 Fed meeting),
- The fact that inflation is not hovering above the targets anymore.

In that line, we argue that the central banks have, indeed, been successful in eliminating the nominal volatilities. Yet, there is much more to worry about. Hence, the central banks' increasing power, harsh criticism over their policies and their transformation into 'the only game' at the policymakers' hands have necessitated a new trend and a new perspective - even a new sort of mechanism design. It naturally brought forth questioning the role, goals and the instruments of central banks. Consequently, there is, today, this new need for a change in central banking, the banking activities and the financial system in general, King (2016) and El-Erian (2016).

### **3. Central Banking in the New Era of Post-2008**

The Great Recession or the Global Financial Crisis of 2008-2009 was a turning point for the world economy in all senses. Policy-making is changing all around the world and policy-makers have much more responsibilities today and hence much more power. Among the EMs, the trend is more popular, as they have relatively lagged in implementing the much needed reforms. Global financial management as well as the design of the financial markets and policy-making have transformed post the Global Financial Crisis. New approaches in central banking and monetary policy-making have emerged. Meanwhile, regulation, supervision and a new sort of mechanism design have gained popularity again. New trends in central banking have been introduced in that line.

Recent discussions over central banking and policy analysis by experts have been focusing on whether central banks and policy institutions are out of options. For instance, *The Economist* (2016a) magazine had an eye-catching cover on its February 20th, 2016 issue, asking whether policy-makers were "out of ammo" (out of tools). Dervis (2016) had another notable critical analysis of the ongoing issues with the current financial system. The common conviction of both of these articles and indeed of many other recent analysis and notes was that central banks had to consider consulting to some long-forgotten tools such as helicopter money (government direct funding) and new alternatives focusing on real sectors of the economy.

The power of the central banks has been growing over the past few decades (El-Erian, 2016; King, 2016). This is true; in particular, in the past few decades after Mr. Greenspan took over control of the monetary policy in the US. In that sense, the question economists should contemplate upon today is the details and whether that trend should continue in the new period. What kind of new policies we should expect as the world economies face a much weaker and exclusive (not equality increasing) growth and hence the increasing discomfort, nationalism and populism around the world.

Use of the unconventional policies, going as far back as September 2009, marks the end of the neo-liberal inflation targeting policies of the Western bloc, according to Frankel (2012). Post-the Great Recession, and given the failures of central banking and all the chronic problems in the financial markets; countries have started questioning the role, goals and the instruments of central banks. As the adverse macroeconomic outcomes increased, even common people started asking more questions regarding the role of central banks. As the most critical, and the all-powerful, financial institution at the heart of the financial system, central

banks have so far not been able to retaliate to all these criticism. They have increased their power and raised further their voice within the financial markets, though.

After the recession, Central Banks around the world, especially those in the biggest economies, employed quantitative easing (and credit easing policies) to deal with the unprecedented outcome of the adverse financial shocks of 2008. Even some international institutions such as the IMF were back in the field to help troubled economies. The trend has so far shifted from retro neo-liberal view to a more conservative real economy targets for the institutions, including the central banks. Financial regulation and supervision as well as a renewed focus on economic development (as the global growth outlook faded) gained focus after the great recession.

Recently, a range of new popular discussions have dominated the policy debates and a fundamental comparison of the standard Neo-liberal (Neoclassical or Monetarist) central banks versus the newly emerging (especially in developing economies) Developmental Central Banking and even the Nominal GDP Targeting central banks have resumed. Meanwhile, the Turkish Central Bank has also recently been under harsh criticism over its interest rate policy, in particular from the incumbent President. He has explicitly demonstrated his opposition to the high interest rate policies of the modern central banking approaches.

This paper discusses three key functions of the central banks, over the course of centuries: namely their goals, the policy structure and the tools they use. It additionally, analyzes their accountability, communication and transparency specialties. The paper aims to picture the evolution of the goals of the central banks, their policy tools and hence their efficacy over time.

### **3.1. Shift from Retro Neo-Liberal View to More Conservative Real Economy Targets**

The popular monetary policy regimes of the post WW-II era were mainly as follows:

- Monetary targeting (popular around the 1960s-1980s),
- Inflation targeting (in advanced economies: post-1980s),
- Exchange rate targeting (EMs: 1980s-2000s),
- Inflation targeting (dominant everywhere: post-2000s).

Nominal targets such as price stability and exchange rate stability are more common today, both among developing and advanced economies. Yet, the new approaches in central banking and monetary policy-making that we mention here, are predominantly focused on how the central banks could support growth and employment; how to balance between inflation targeting, price stability, growth and financial stability; even how to achieve monetary and fiscal coordination, and more regulation, economic growth and inequality.

After all, today, the world economies are in need of more emphasis on financial stability, banking supervision and regulation; international coordination, macro-prudential regulations, and fighting the deflation problem (as opposed to inflation in the past).

One should keep in mind that almost all central banks, today, are far from the roles they assumed in the past and this shift of focus towards nominal targets is actually nothing new. Therefore, changing the current nominal focus should also not be all-new. The Fed has already been focusing on real economy and inflation targets together: the dual mandates. The CBRT is also considering the financial stability objective. The only change is formal targets, and more realistic & acceptable objectives. Hence, looking forward, central banks are likely to target more than just the "inflation rate".

Nowadays, various new objectives and policy goals are offered as part of the idea of the central banking in the new era. For instance in the US, the discussion is over whether the Fed should be concerned about the stock prices and real estate price and whether it should expand its regulation into the whole financial sector. Meanwhile, there is another discussion on whether they should expand further their role as the lender of the last resort and whether the Fed should be concerned about the change in risk spreads, spread between federal funds rate and the other interests. As an example, Curdia and Woodford (2009) suggest movements in this spread should be taken into account in a new spread-adjusted Taylor Rule.

Recently, there have more frequently been talks of a shift away from the retro inflation targeting (mostly preferred in advanced economies) or the exchange rate targeting (predominantly used in emerging economies) towards a new, and more real sector oriented target called nominal GDP targeting.

### **3.2. Post the Great Recession: New trends**

During the past few decades, using alternative policy measures, we have achieved transparency, accountability, management of expectations, and central bank independence with the Neo-liberal central banking; better communication (post the 1994), calendar guidance (post the 2000s), forward guidance (early 2000s), data dependence (benchmarks for specific variables), new measures such as the QEs (LSAPs, credit easing, ABSs, TLTROs etc.) and negative rates; financial stability and international coordination, banking supervision etc. And given the current issues with the Neo-liberal “Inflation Targeting” regime of the post 1980s; experts have come up with new suggestions such as the NGDP Targeting, the Developmental Central Banking, more focus on financial stability, banking and financial supervision & regulation, use of the conventional tools further down the ZLB, international cooperation (to deal with the spillover effects of their policies, for instance), better communication (effective use of the forward guidance), more regulation & international cooperation, price-level targeting etc. Will they help deal with all the modern issues?

The price-level targeting is especially worth mentioning here. It was offered in the Japanese Depression case first and provides the opportunity to have differing inflation rates across time (Krugman, 1998). Or that you could basically overshoot and undershoot the inflation target from time to time. In that regard; a broader focus on “price stability, output stability and financial stability; as well as more regulation, economic growth, employment and inequality” should be emphasized looking forward. The focus has nowadays shifted towards new questions and concerns such as: how the central banks could support growth and employment? How to balance between inflation targeting, price stability, financial stability and growth objectives? How to achieve monetary and fiscal coordination?

In order to understand the fiscal-monetary coordination mechanism, in particular, one needs to capture the Keynesian perspective of the post 1930s better. The Keynesians argue that weak demand is at the heart of the problem (even during the Great Recession of 2008). In that sense, countries should follow expansionary fiscal and monetary policies to deal with the short-term volatilities. Negative rates are, indeed, an outcome of efforts to stimulate the demand that is weak. In particular, after the 2008-09 crisis (Global financial Crisis); global liquidity conditions were improved, capital inflows into developing or emerging economies went up and they felt more comfortable in finding new funding options.

A new question here is whether new developments and new environment would require new policy targets. After all, the world in the post-2008 crisis is much more different from that in the early 1990s. And whether the current inflation targeting (mostly a 2% target) advanced economy central banks also need a new target.

In line with this changing trend of discussions, we provide a breakdown of popular new trends below. A few examples of these recent popular, new and innovative policies that have especially emerged after the Great Recession are listed below:

- i. Negative rates and more QE: Negative rates are used, today, in almost one-third of the world economies. The BOJ, the ECB and central banks in some other small European countries (Sweden, Switzerland and even Denmark) have implemented negative nominal interest rates. The ECB has even recently expanded further its QE program, further decreased the negative rates and downed the main policy rate to the ZLB.
- ii. A pure cash or physical currency economy (even barter economy): An extreme case of negative rates is the case where money is not demanded at all. In this case, alternatives such as gold, silver or even electronic currencies could be used,
- iii. Helicopter money: Renowned monetary economist Friedman argued central banks could just drop cash money into an economy as if it was dropped out of a helicopter, Friedman (1969),

- iv. The expanding central banks are likely to continue their expansion process looking forward. Even new players in the expansionary game may emerge,
- v. Helicopter money has many advantages over its recent rivals QE or credit easing etc. A Helicopter drop would allow the governments and policy-makers “bypasses banks and financial markets” that are highly leveraged and looking to deleverage, and inject the new money directly into the market. The money would directly flow into the hands of those that need the money the most and will be using it right away. It would therefore be the best way to stimulate the aggregate demand.

How to implement this popular helicopter money innovation, though? Would the central banks, and hence the governments, basically put a certain amount to each bank account? A problem is that ,not all, especially the poor (that consume the most), have a bank account. And a second problem would be that you cannot be sure they will all spend the money given out (check the example of the fiscal stimulus by Bush in early 2000s). How about re-denominating the currency? Namely, renewing the currency every once in a while. Withdrawing the old currency and printing new currencies seldom.

The Helicopter money innovation, at its core, is a simple monetary policy – fiscal policy coordination mechanism. It therefore shifts the focus towards fiscal policy. Another recently prevalent alternative is a more effective fiscal policy. Effective usage of fiscal policy is another alternative at a point where nominal interest rates are at or close to the ZLB. Yet, fiscal policy is not a part of our study here. We provide a very short discussion here, though. Fiscal stimulus is beneficial for sure. When deciding how much fiscal stimulus to implement, though, we should just focus on a basic cost-benefit analysis (Barro, 2009). Proponents of more fiscal stimulus and increased public debt claim:

- Cost is usually less than benefit - as long as nominal interest rates are below the inflation, labor productivity and labor growth all combined; then cost of extra borrowing and fiscal stimulus is worth to take into account,
- Moreover, according to DeLong (2016), fiscal multiplier might be close to 2, in the advanced economies and in cases where expansion is done in coordination. So that, for each extra buck spent, real GDP would head up by 2 bucks,
- There are lots of alternative economic benefits that a stimulus package might bring forth, such as the increased human capital (labor force skills), higher business investment, and more infrastructure investment,

However, there are problems related to the fiscal stimulus packages as well. Lags in implementation and the long legal processes are crucial issues to bear in mind. Meanwhile, it will not be able to make appropriate policy changes or reverse the process, once the fiscal balance is expanded and the debt level is raised, for instance. We, therefore, switch back to our discussion over monetary policy options, after this short fiscal policy discussion window. The post-1970s monetary policy transformation has contributed a lot to the science of policy-making. Management of expectations, transparency and accountability has just been a few of the key policy objectives gained by the policy makers. This should, indeed, be taken as a sign of how much could be gained from an appropriate and timely transformation looking forward, as well.

Now that we have much more uncertainty and asymmetric shock, we should be able to apply new measures and allow new transformation and the evolution process over central banks and the policy-making. Therefore, the true question now is, whether the newly suggested tools fundamentally contradict with the required objectives? Or do they rather improve on those primary concerns? Meanwhile, as underlined by Clark (1994), a reasonable policy option should provide satisfactory balance between the ultimate goals of sustainable long-run economic growth and the short-run price stability. It would, in a way, help stabilize the output level in short-term and meanwhile lead to the price stability target in the long-term. Yet, post the 1980s, the trend moved towards a focus on the longer-term inflation objective only.

As mentioned earlier, recently, there has been talk of a change in Fed's mandates as well; in particular in its monetary policy targets. The argument is that the Fed should change its focus from pure inflation-target to a more realistic target such as a nominal GDP growth target. Even popular liberal magazines have expressed their support for such a change (The Economist, 2016b for instance). Indeed, in November 2011, and under Chairman Bernanke, the

Fed's monetary policy committee discussed such a change from pure inflation target (of 2%) to a nominal GDP target. Yet, they preferred staying on the previous inflation target due to the difficulty of such a switch. Bernanke (2015) would later base the decision to stick to old policy on his belief that it would be hard to make it a credible commitment.

### **3.3. Financial stability**

In the 1990s, and after the region-wide Asian crisis, most of the Asian tigers went with reserve accumulation policies. They believed it was the neo-liberal policies of the post-1980s to be blamed for the late-1990s crisis. These earlier prudential policies eventually helped the Asian economies later on and made it possible to use the monetary policy, much more effectively and whenever needed. This wise and timely monetary policy choice reminds one of the Great moderation period in the advanced economies of the West (the G7 economies in particular).

Now the very same issues are elaborated in the context of the post 2008 era of the world economy. Before we move on to the concept and the theories behind the financial stability; it should be made clear that the broader macroeconomic stability and more common central bank occupation of monetary policy are not alternatives to each other. They rather live together and reinforce each other.

Ensuring financial stability and the central banks crucial role as the lender of last resort are usually the primary goal of policymakers in any country and was one of the original (indeed the very primary) goals of the Federal Reserve as well, as part of its efforts to prevent the chronic financial panics. Long after the neo-liberal deregulation period of the Washington consensus, it is today (post-the Great Recession), even considered as important as its role of conducting the monetary policy. Many structural and institutional changes have been implemented in accordance (to let it function as a financial stability institution).

Financial stability should indeed be considered within the broader picture of the macroeconomic stability; and the financial regulation tool is usually considered as the primary instrument to achieve the financial stability. As an example, in Turkey, coalitions would be very short-lived between 1990 and 2000. This would cause uncertainties regarding future policy implementations and the political stability. Therefore, financial stability gained priority after 1996; and inflation surged, as it was undermined. In a way, one crucial aspect of policy making was ignored despite its counterpart implementations in the west. The same process would emerge after 2008 in the Advanced Economies. The reemergence of importance of the 'financial stability', post-the Great Recession, has led to creation of new public institutions such as the BRSA and the Economic Coordination Committee in Turkey; and additional goals on the part of the central banks. Some, such as the BOE, even has had it as an explicit objective as far back as 1994.

It is also important to note what it means to have a stable financial system. By stability, it is usually meant that the financial system is able to do its following three main functions: maturity transformation, allocation of savings, and being resilient to small or medium-sized shocks; or that it returns to that level in an acceptable time-frame. After having a clear understanding of what it means to have a stable financial system, it is also important to know how to achieve 'Financial Stability'. We emphasize using its lender-of-last-resort function and providing liquidity to the markets during the panic times, creating strong financial institutions and improving the security and stability of the financial system during the good times in particular.

### **3.4. Regulations**

Regulations on the banking sector (after the 2008 crisis) were one thing we regained after the Global Financial Crisis of 2008. For example, capital requirements are increased, banks are forced to be less risky today and central banks are more cautious to unexpected moves such as the Brexit or other forms of illiquidity today. Policy coordination and macro-prudential policies have been at the heart of regulations and the related discussions, at least since the beginning of the Great Recession. Increasing domestic and global needs for regulatory and lender-of-last-resort sources have proven that the standard central banking is insufficient to meet the demand

and the expectations. The question at this point is the best alternative or expansionary options out there for countries to transform their central banks.

Given its effectiveness and the limited role assigned to the institution, Eichengreen *et al.* (2011) argue that financial stability should be core of focus of the targets for the central banks, which currently are mainly limited to price stability and output growth. In order to achieve that new target, macro-prudential regulations should be added to current mandates; and monetary tools used by central banks should be adjusted as such. This should be in addition to the other micro- and macro prudential regulations. This offer is reminiscent of Roubini's famous argument (during the 2008-09 crisis) that the central banks should also target asset prices.

Alternatively, they offer that another financial supervisory authority that works closely with the central bank should be established. Monetary policy, especially the QE policies, affects asset and commodity prices; as well as boosting the capital flows and exchange rates. Moreover, one country's monetary policy usually affects the others, as well, through capital flows and thus causing the spillover effects discussed earlier. Hence, a coordination mechanism among influential central banks is needed.

### **3.5. International coordination**

Another popular argument about modern central banking is that there are gains from international coordination, Eichengreen (2013). One related argument is that an international coordination on raising the price of gold would help world economies even during the Great Depression; but that opportunity was lost as there was no agreement during the 1933 World Economic Conference, in London. Another suggestion, this time for the most recent recession, is that an international coordination towards more seldom use of the quantitative easing policies by the advanced economy central banks and less fiscal contraction on the side of emerging economies would provide a better result for all economies around the world. All would be better off. There was no agreement on international coordination again during the 2008-crisis, due mainly to political reasons (Eichengreen, 2013).

Yet, as governments expand their fiscal and monetary policies; policy implementations should be coordinated within an institutional international cooperation and coordination mechanism. This is necessary to overcome modern issues such as the currency war arguments and deal with frequent bubble and bursts. It is crucial, in particular, on the part of the major central banks. International coordination should be implemented over not only monetary, but also other policies such as the fiscal policy. Alternative of international coordination is currency appreciations (or depreciation), lost competitiveness, declining external trade and hence the aggregate demand. And, together, all these factors would result in real costs such as higher unemployment. Lessons from the Great Depression should not be forgotten (Bernanke, 2004).

Based on these experiences, one contemporary discussion and the related question is whether the advanced economies' central banks should pay attention to the monetary policy's spillover effects. In other words, whether they should be cooperating, especially considering the famous failure in central-bank cooperation during the Great Depression.

The argument above should not be taken, of course, as if there was no cooperation or coordination at all, over time. For example, informal cooperation between the NewYork Fed Governor Benjamin Strong and the BOE Governor Montagu Norman, as well as their ties with the Germany's Reichsbank's president Hjalmar Schacht, in the mid-1920s, is a popular case study. This cooperation during a secret meeting on NewYork's Long Island, it is claimed, would result in much needed decrease in the US discount rates. Lower rates, in exchange, would stimulate the weak growth rates in Europe. Yet this expansionary policy is widely claimed to lead to a bubble as well; a bubble that would collapse in 1929.

During the Great Recession of 2008-09, there was a more wide-spread and natural cooperation among the central banks of the big six developed economies in particular. They would decrease their policy rates significantly just three weeks after the dark week (of the bankruptcy of Lehman Brothers) of September 2008. They increased the liquidity via LSAPs subsequently.

In line with this much needed coordination mechanism, Eichengreen *et al.* (2011) offer making the current informal meeting of the central bankers at the BIS more formal and more focused, with the participation of a group of central bankers from the most influential only. Despite all these evidence, though, one should also keep in mind that: while the central-bank cooperation is much desired during the crisis period, it also poses a paradox via the costs it brings forth. In particular during the crisis, there is a paradox of cooperation in that while the demand for coordination is high, its costs are high as well.

Another worthy issue to keep in mind here is that; while the current mandates already require substantial independence of the central banks, adding financial stability as another objective may necessitate much more independence. Eichengreen *et al.* (2011) argue that monetary policy should be an important part of the macro prudential policies. While they suggest that micro and macro prudential tools should be used initially, they recommend effective use of monetary policy whenever it is needed. They emphasize that even coordination among central banks is necessary to overcome any spillover effects of MPs of a particular country over the others.

Macro-prudential policies should also be implemented on time, to deal with the systemic risks. Much needed financial stability should be strengthened via an institutional setup and a strict commitment on the institutional level. The instability concerns and monetary policies of the countries are closely linked and usually go hand in hand, as mentioned above. Central Banks, as the core financial institutions of the financial markets, are supposed to be totally independent off any political influence; but they usually share their responsibilities with some other institutions. Eichengreen *et al.* (2011) argue an explicit financial stability target is much required in an effort to better understand the real effects of credit condition shifts and the effects over asset prices.

In developing economies, in particular, the case for need for a broader focus on financial stability has also increased. For instance, in Africa, the banking sector has been deepening and integration with the global financial system has increased. While this has increased the resilience to the external shocks, it has also naturally increased the need for monitoring and managing the corresponding risks. In Turkey, on the other hand, the central-bank has already (and once again) incorporated the financial stability into its earlier inflation-targeting mandate since the end of 2010. The following years witnesses a broader monetary-policy framework incorporating a policy rate, an interest rate corridor, a required reserve ratio, and a ROM (reserve-option mechanism).

There is also the pessimist view on the effects of ending QE in the Emerging Economies. Absence of well-developed local financial markets and a global lender of last resort make emerging economies vulnerable to sudden-stop in capital flows. This has led a growing number of economists, today, to claim that an international lender of last resort (such as the IMF) could be a solution to this type of credit crunches (Eichengreen *et al.* 2011).

#### **4. Suggested Trends for the Future of Central Banking**

We live in an all-new era. The world economy is currently dealing with the deflation problem, in many cases, as opposed to the chronic inflation issues of the past. And as mentioned above; monetary policy may have also hit the limits of what it is supposed to achieve. Policymakers have been on a continuous quest to find a new way out. This idea may not have been much voiced publicly though. Yet, it is always possible that central banks will never admit they have run out of ammunition (The Economist, 2016a).

Central banks are at the heart of the national economies. Broadly speaking, central banks control not only the amount of money supply in the market, but also the process of how it is exchanged between countries, companies and the households. They are, therefore, extremely important for the destiny of a country's economy. Yet, they have recently grown much more powerful. In particular, after the Great Recession of 2008-09, central banks around the world injected a total of around \$22tn in cash flows into the financial markets. The Fed, alone, injected around \$4tn. Nominal policy rates hit the ZLB. And the Fiscal stimulus packages were impossible to be implemented alone, back then.

Things have changed since the late 2007, the onset of the Global financial Crisis. Yet, the world economy, today, still suffers, despite the unprecedented monetary expansion since the onset of the recession. We were able to avoid the repeat of the Great Depression. Yet, we reached a 'new normal' of weaker growth. Maybe, still, better than nothing.

Changes in the objectives and even policy instruments of the central banks should, of course, be discussed. However, we should keep in mind that throughout its history, whenever central bank activities were limited to a basic rule to follow (be it during the monetary targeting or during the Taylor rule of the inflation targeting or even an exchange rate targeting for the EMs case); other issues, such as financial instability had emerged and threatened the fate of the financial markets. In that sense, more focus on new objectives that do not include specific rules may be a way out.

There is also a growing concern that the world economies may actually be out of policy options, in particular as the world economies are still dealing with the fears of a new global recession (The Economist, 2016a). There are, indeed, a number of new innovative policy objectives central banks could consider using. We provide a wrap-up summary of these new tools below.

#### **4.1. Central Banks: Past vs. Present**

Conventionally, central banks would favor more weight on inflation stabilization and less on the other real targets. The conservative policymakers, on the other hand, would advocate no intervention. They favor liberal policies. The neo-liberal trend of the post-1980s is a good example here. Yet, according to Dervis (2016), even many liberal economists that were never in favor of any kind of intervention are, today, recommending the leftist central banking roles of more intervention.

Central banks, in practice and conventionally, focus on inflation targets only. Though, today, they are dealing with a deflation problem. Inflation rates hover much below their target rates and as the conventional tools are at their limits, they have to find new means to achieve their targets. The unconventional tools step in at this point. Asset purchases (the long-term government and private sector assets) and negative interest rates are just two examples, here. A question at this point is: If all other tools fail; would the central banks implement the 'helicopter dropped' money tool? Would it print out money and then give it out randomly, maybe even on the street? Send out checks to citizens to purchase the basic needs and hence boost the aggregate demand (more via the poor). Another problem now is whether they would prefer using alternative measures to achieve the conventional targets or would they rather prefer losing the credibility they have built over the last few decades.

The primary modern channel of influence for the central banks is the expectations channel. Central banks focus on changing the expectations in order to impact the markets. They would convince people to consume more and increase the demand, by changing the demand preferences via its interest policy and signals. They would use forward guidance, for instance, to first signal about their future policies and second share how they expect the economy to move or where they expect the macro variables to head towards.

However, the devaluating countries mostly use the exchange rate channel, believing that is the ultimate source of influence over the markets. Yet, even if that is true, countries should follow specific rules to use the exchange rate channel; such that they respect and meet their international responsibilities as well. In that sense, an international coordination mechanism is also always needed to avoid the spillover effects of their monetary policies.

In terms of an efficient international cooperation mechanism, maybe a new Bretton-Woods like agreement will be needed (Rajan, 2016) or maybe even a combination of the mandates of the significant world central banks will be accepted. A well-articulated international financial system and better coordination among the world central banks is a necessity nowadays. It should therefore be built before it is too late.

In some cases, policy actions may unwillingly signal that something bad is about to come. If that is the case, then people may save instead of spending. Alternatively, just consider the case where people expect a particular policy to be temporary (that the policy will be taken

back later). Asset price hikes or government debt surges are just a few examples here. Therefore, for a policy to be effective, it may need to be permanent as well.

As discussed above, many economists agree today that the QE policies were actually needed to escape the repeat of another Great Depression. Yet, as for the realized effects so far, there is also a concern that the unconventional policies of the post-2008 period might actually have distorted the equilibrium of the advanced economies. El-Erian (2016) rightly points out that, central banks have been able to eliminate the employment and the other real costs (in particular in the US). Yet, as he further adds on, they have not been able to achieve the long dreamed high and stable growth rates across the advanced economies. Financial stability and more effective use of the macro-prudential regulations have also been missing, (Rajan 2005).

#### **4.2. Suggested Financial Reforms Looking Forward**

A basic answer to a question as to 'what should we expect in this new era?' would be rather much longer. There are no clear prescriptions yet. That said, there is a range of recent suggestions brought up by leading economists and policy experts. We list these suggestions below as a short summary.

The first suggestion is that, banking activities should be separated from trading and investment activities. The institutions, themselves, do not necessarily have to change or be separated. Just their activities are meant here. In terms of this activity separation: on one hand, there should be deposit and short-term loans (the static boring assets); and on the other hand, there should be other riskier assets (such as the common stocks, mortgage bonds, CDS and mines etc.). As for the insurance, the first group of boring assets could be insured by holding a certain portion of government bond holding or a certain reserve holding at the central bank. As for the second group, on the other hand, the banks could be given an option to decide what to pledge to (or use as collateral) for any loan application to the central bank. This way, in case there is any recession or crisis, bank runs would be avoided and the risk of not being able to pay customers in an emergency would be eliminated.

Secondly, the central Bank could be transformed from the lender of last resort to a pawnbroker for all the bad times (lending against a satisfactory collateral), as King (2016) puts it. Before-2008, central banks would lend limitlessly; even against the over-valued collaterals. Post-2008, central banks started lending out cautiously and just against the fairly priced and accepted collaterals only. Valuing the collateral (during the good times) will be at the central bank's discretion. I would argue that even the King rule recently offered by former BOE governor states that the role of the central banks should be extended, King (2016). However, the extension should be towards the post-2008 trend.

Third, the solvency rules should be clear. For example, a simpler rule could be accepted. Maybe a 'solvency rule' that the banks' effective liquid assets (government bonds and reserves held at the central bank as well as the collateral value of all the other activities) should be at least equal to the effective liquid liabilities (money that could run from bank in a short period – such as the loans and deposits of less than 1-year duration).

Moreover, financing is another crucial component to bear in mind. Banks and even the other companies should finance themselves with more equity shares or long-term finances than the current ratios. This is to make sure that the losses will be shared by shareholders and the long-term financiers. It also decreases the default risk due to any short-term liquidity issues.

Finally, risk taking and speculative attacks should be avoided. Otherwise, something like a haircut on collateral should be implemented (an advance insurance payment for the risk taken). Meanwhile, the bailouts should also be limited, in an effort to discourage getting too big, just to be bailed out in case of emergency. Extending government insurance for the deposits is another key issue. However, this should be true just for certain amount of deposits, not risky assets. Risky assets would be paid for by the collaterals provided earlier by the banks.

### **4.3. The Most Recent Trends in Central Banking**

During the past few decades, and in particular after 2008, central banks have been extremely creative in the policy instruments they have been using to conduct monetary policy. Just to mention a few examples of the recent unconventional tools of central banks: the QEs (extending the discount window, such as the LSAPs in the US), credit easing policies (as in the QE1 and QE3 in the US, TLTROs by the ECB etc.), some central banks (such as the CBRT) are accepting gold as a portion of the reserves, and downing further the interest rates below the ZLB (as in the BOJ, the ECB and some other continental European economies). In addition, most importantly, we do not have the zero-lower-bound anymore.

After the failure of Lehman, the Fed started expanding its monetary base to an unprecedented size (see figure A4 in Appendix). They did so, first by lending money to banks and financial institutions; and then by buying private and longer-term securities. This way, QEs and LSAPs were born. However, the money that the Fed injected into the financial system was predominantly kept at the reserves of the banking system, instead of being lent out into the financial and real sectors. Therefore, the excess reserves of the banks at the Fed accumulated to a total of \$2.3tn in the US, Thornton (2015) and FRED (2016). Meanwhile, the required reserves (determined by the Fed) had risen from a mere \$43.4 billion in 2008 to a giant \$160.4 billion in 2016. This is considered to be the highest jump in the history of the Fed.

Since the bankruptcy of the investment bank Lehman Brothers, on September 2008, banks have switched to a policy of holding unprecedented amounts of excess reserves. The Appendix provides a well-rounded illustration of the expansion of balance sheets of the major central banks around the world. The reasoning for this excessive reserve holding is as follows (Thornton, 2015):

- They feel like they have no choice but to hold extra reserves to avoid any crisis or bankruptcy due to risky lending.
- The close to zero nominal interest rates have forced them to stop lending, as returns are extremely low.

With the nominal interest rates, investments and standard loans extremely low, banks have started taking excessive risk to increase return on their money lending. Even the current nominal federal funds target rate in the US is too low that could increase risk-taking behavior. The most recent negative rates discussion, outside the US, is also a case that would extremely accelerate the risk-taking attitudes.

Central bank balance sheets are extremely large today (see the Appendix). There is, therefore, an excessive liquidity holding out there in the banking sector. Yet the markets refuse to effectively use it. Therefore, inflation rates and the growth rates are still very low. While some consider it as a sign of chronic slow growth trend, many others would claim it could lead to a new big global (financial) recession. That is why, for a long time even after the Global Financial Crisis, there were still discussions of a second round of recession.

In an effort to direct the excessive liquidity in the market towards the real economy, central banks have started to implement negative rates over the money kept at reserves. This is, to encourage spending in the market and discourage holding money at the deposit accounts.

### **4.4. Negative Nominal Interest Rates**

The negative policy rates and moving beyond the ZLB is the new trend in monetary economics. Central banks in the continental European economies such as Sweden, Switzerland and Denmark; the European Central bank and the Bank of Japan are all currently implementing negative nominal interest rates. It is very likely that the number will increase further.

Yet, the negative rate policy is not very likely to be implemented in the US. The possibility is extremely weak mainly because of the unintended side effects of expanding the US monetary policy further, Clarida and Bass (2015). There is even a bigger tendency and more willingness to increase the interest rates at the Fed, and even at the BOE.

To understand the future of policy, we should understand the reason we have the negative rates in the first place. Negative rates are, indeed, an outcome of efforts to stimulate

the demand that is currently weak. And, weak demand is at the heart of the ongoing macro and financial issues (the same case even during the Great Recession of 2008). In that sense, countries should follow expansionary fiscal and monetary policies to deal with the short-term volatilities. These expansionary policies, in return, lead to much lower (and sometimes even negative) interest rates. And the negative rates stimulate the economic activity by boosting demand (via investment and consumption).

The conventional monetary policy has run its course; and to make a difference, central banks such as the ECB need to turn to unconventional, to stimulate their respective economies. European banks are already able to borrow at low rates since rates on bonds are very low. In Japan, on the other hand, the negative deposit rate will be implemented over the incoming extra deposits. The possibility of a more popular usage of negative yields seems to be heightened after major central banks in the Eurozone and Japan (as well as some other small countries) started implementing negative rates.

#### **4.5. Nominal GDP Targeting**

Nominal GDP targeting regime is another popular policy regime, currently part of harsh policy debates. The beauty of a nominal GDP targeting regime is that it already includes the inflation target. But it also encompasses dealing with business-cycles directly. So what are the benefits of switching to such a target?

Nowadays, many have voiced their belief that; were there a shift (during the famous November 2011 meeting) to a nominal GDP growth target on the part of the Fed, central bank policies would have worked much better (The Economist, 2016b). This is claimed for four main reasons (in particular for advanced economies). First, a nominal GDP targeting central bank better stabilizes the economy by dealing with the business cycles (at the center of many modern problems) directly. Secondly, a nominal GDP targeting regime is robust to uncertainties and the related unanticipated shocks. Third, most of the modern national economic problems are somehow related to huge public or sovereign debt. Keeping the nominal GDP level high while decreasing the debt level would help bring down the debt/GDP level sooner. The Turkish experience post the 2000s, is a good example here. And finally, NGDP target also provides a clear and concrete goal for the central bank and provides the transparency, management of expectations and accountability properties of the previous inflation targeting regime.

A nominal GDP growth target would have also helped the policymakers choose their policies more reasonably and respond to nominal GDP weakness and economic slowdowns directly, faster and more effectively (The Economist, 2016b). As an example, the low inflation period of post the 2008 crisis has misled policymakers in some advanced economies not to react. At least not to act quickly and directly to stimulate the real economy, even when nominal GDP was well below its potential trend (at the earlier stages of the business cycle). A NGDP targeting Fed would have responded to the 2008 crisis much earlier. The lags due to implementation of the monetary policy are the same as in inflation targeting and the other similar regimes. But they could also be dealt using the future forecasts, instead of the current levels.

Meanwhile, a nominal GDP growth target or a nominal GDP target in general would also help a central bank signal about a shift in its policy goals and its commitment to answer the relevant problems of the time. Just as it did in the early 1980s, by a shift to inflation target at that time, the Fed could change its policy targets and use all the available tools to show its commitment to the new targets and make the new policy mandates credible.

Moreover, most of the modern business cycles are driven by supply shocks, technological innovations, and terms of trade shocks (both via export and import prices) in terms of open economies. Bhandari and Frankel (2015) provide evidence for supply (and terms of trade) shocks across all countries. They show bigger supply shocks in EM economies case, though. So, the demand-driven inflation-targeting goal has not been effective to reverse these adverse trends. Inflation targeting works better with demand shocks. During the past few decades, demand shocks were at the center of almost all of the problems in the advanced economies. That is why it was so popular among advanced economy central banks. Yet, it is a

well-known fact that, inflation targeting does not work well in the face of a supply shock (See figure 1). So, why believe that one-size-fits-all?

Another benefit of a nominal GDP growth targeting is that it (at least theoretically) includes both of the inflation targeting and real GDP (and its growth) and hence employment. A nominal GDP target would also provide robustness, in case of terms of trade or supply shocks.

Nominal GDP, theoretically, is a function of real GDP and price level. Therefore, when we talk about targeting nominal GDP, we are actually focusing on trends of both real GDP and the price level. The growth of nominal GDP, on the other hand, equals the sum of real GDP growth and inflation. In that sense, the benefit of a nominal GDP growth (or just nominal GDP) targeting is that it (at least theoretically) includes both of the inflation targeting (via the GDP deflator inflation) and the real GDP growth (the total change in real quantity goods and services produced and hence employment).

#### **4.6. Fiscal - Monetary Policy Coordination**

An alternative policy to the current negative interest rates or NGDP targeting trends is to implement a 'helicopter money' or 'helicopter dropped money' policy. This would be a pure fiscal measure, in which, central banks would print money and directly finance the government expenditures (such as the infrastructure investment or investment in physical and human capital) via direct bond purchases. Helicopter money is mostly offered by the leftist, and recently by the centrist and even (as in the de facto case) by the conservative economists.

It would be more relevant in cases or economies where we observe lack of funding and very low saving rates. Even in cases where alternative funding sources for long term infrastructure investments are scarce and new options are needed, it would be more relevant. As Dervis (2016) mentions, this would be the most effective way to boost the aggregate demand. The reasoning goes; the helicopter money would go directly to the most needed sectors of the economy: the poor or the middle-income. The financial sectors and corporate sectors, both of which were dealing with an ongoing deleveraging process and preferring to keep their money instead of lending out, would be skipped this way.

Helicopter money could be transferred to the low or middle-income households directly, as in the checks and some other direct subsidies or alternatively, it could be used to finance some investment projects and increase the employment opportunities. It could also be used in some other measures such as the infrastructure investment to boost the household productivity and hence the income. This second option should be considered as part of developmental central banking idea.

The idea is that, as employment opportunities go up and productivity increases; purchasing power of the middle and low-income groups goes up as well and income inequality mitigates. And hence, this most thirsty (as Dervis (2016) calls them) group of households boosts the aggregate demand again. It also helps towards a more inclusive economic growth.

The idea is based on supporting the demand side with an increased purchasing power of the households. The 'Helicopter dropped money' policies are ones where public spending programs or social transfers to the citizens are paid for by freshly coined money. It requires extraordinary monetary policy – fiscal policy coordination and means almost no central-bank independence.

In the future, in case more money supply is needed, the new 'Quantitative Easing' or monetary expansions could be coordinated well with the fiscal policy. Central Banks could print "helicopter money" for their respective governments to "drop" directly on to the public via citizen dividends or per capita tax rebates, or other infrastructure investments that would help with employment, productivity and human capital.

Empirical research shows that; usually, policies including a combination of permanent monetary expansion and fiscal expansion together are considered more effective and have a quick and greater impact on spending behaviors and hence more direct and better real effects (The Economist, 2016a). 'Helicopter dropped money' option is a good example for this coordination. The side effect here would be that a coordination or cooperation between the fiscal authority (ruling government) and the policy makers (monetary authority) might undermine

central bank independence. Yet, as was brought up earlier; the independence issue might not actually be as crucial in that sense as it has been offered during the past few decades.

## **5. Summary of the Changing Trends in Central Banking**

Central bank practices around the world have almost come to an edge where they are no more effective over the markets with their ongoing policy measures. Despite the increasing market share and market making power, efficacy of their powers is declining. Central banks are even mostly out of the current unconventional policy measures. The most recent negative interest rate trend is also proven to be ineffective. So, what could be expected next?

Inflation targeting is still the common taboo of the modern times. Most of the modern advanced economies prefer an inflation-targeting regime. Despite the recent hot debates over whether it should be replaced with alternatives such as a nominal GDP targeting, it still is the predominantly preferred monetary policy regime. In particular, the ECB experience of strict 2% inflation target has helped strengthen the need for a change. Most economists, nowadays, agree that nominal GDP targeting (or the developmental central banking) might indeed be a better policy option to the existing purely nominal focus of inflation targeting.

Financial stability, international coordination, banking supervision and the central bank independence from political influence are all surely important properties; and as of the recent history, they have even been very popular topics to be contemplated upon. But, how about some other long-forgotten (and recently reemerged) concerns (of many and mostly developing economies) such as the 'economic development'? How about the role of central banks as an agent of economic and social development? Is there nothing the central could do to promote or stimulate the economic development and the structural transformation of a country?

Post the Second World War, central banks around the world have gone through a fast and rather unprecedented transformation. Both the advanced economy and the developing economy central banks have shifted their focus to alternative goals. For example, very recently, the idea of central banks as an agent of economic development has been more prominent in developing economies. In advanced economies though, currently, the alternative financial stability objective is just thought of within the context of the broader macroeconomic stability. And that is usually it, nothing more.

Most recently, and after the Great Recession, central banks (along with their governments) around the world, especially those in the advanced economies; employed Quantitative Easing (and credit easing) policies to deal with the unprecedented outcome of the adverse shocks of the Great Recession. Even some international institutions such as the IMF were on the field to help the then troubled economies.

Since then, the trend has, in many domestic and international institutions, shifted from neo-liberal, monetarist view to a more conservative reel economy focus and targets for the institutions, including the central banks. Financial regulation, maximum employment, structural transformation and focus on economic development (as the global growth outlook has gradually faded – and keeps going down further) gained a renewed focus after the great recession.

The former rather conventional liberal/monetarist macroeconomic theory is based on an independent Central Bank, mainly using the short-term nominal interest rates (such as the Fed funds rate) to affect the economy and stimulate the economic activity and focusing on price stability (Epstein, 2005). Recently, though, there has been an all-new, yet very hot discussion on the 'differences between' and the 'efficacy of' each of the standard Neoliberal (Neoclassical or Monetarist) versus the newly emerging (especially in developing economies) central banking activities.

Post the Great Recession of 2008-09, and along with outrageous and ever increasing attacks over the neo-liberal central banking, there have been two main trends in the central banking practices. First of these trends is that there is a tendency at the Fed, and even the BOE to stop easing and start reversing (or normalizing) the monetary easing. The short-term nominal rates currently are stable at or close to the ZLB. There is a willingness to increase these interest rates towards reasonable levels; the levels that would re-allow effective use of even the conventional monetary policy.

Secondly, as the 2008 crisis was rooted in the financially developed western economies, it actually provided a good basis for a structural transformation in the institutional setup of central banks in these fatigue economies as well. A shift in focus, from neo-liberal inflation targeting central bank towards more development focused central banking in the especially developing economies was one crucial outcome of the last decade's huge recession.

## **6. Conclusion**

To summarize the answer to a simple question as to 'why the need for switch away from the neo-classical Inflation Targeting regime', we need to first align the basic flows of an inflation targeting regime. These challenges are due to, for example, the productivity and supply shocks various world economies frequently face nowadays or the high level of government debts across the world economies today. Both of these factors force the modern economies to change the current inflation targeting focus.

We argue that the central banks have, indeed, been successful in eliminating the nominal volatilities during the past few decades. But, also ask 'what about all other new issues discussed above?' This paper claims that, looking forward; central banks will assume dominant real sector and real economic growth targets, in addition to their current occupation with nominal targets. It further presumes that central banks in emerging market economies will focus more on growth targets, while those in advanced economies are more likely to focus on stabilization and nominal targets.

As was mentioned within this paper, the current chronic problems of the financial markets, the post 2008-09 criticism over central bank policies and their efficacy, central banks' increasing power, harsh criticism and their transformation into 'the only game' at the policymakers' hands has necessitated a new trend. Besides, this new trend requires supporting growth and employment; balancing between inflation targeting, price stability, growth and financial stability, as well as achieving monetary and fiscal coordination.

The changing nature of shocks and the structural differences between countries of varying development levels is also of crucial importance. While an inflation targeting central bank would work very well in case of a demand shock, it would potentially deepen the crisis in a supply shock case. Meanwhile, conventional stabilization oriented policy tools are more effective in advanced economies due to the flat SRAS curves in those economies. It should be kept in mind that the advanced economies usually have more stable and horizontal SRAS curves (as prices are stickier) and hence the conventional monetary policy (that shifts an AD curve) works much better and is much more powerful than it would be in a developing economy.

Advanced economies also have the advantage to grow on their own. The primary concern of a policy-maker in those economies should, hence, be prevention of volatility. Short-term volatilities away from the trend growth need to be stabilized. The common assessment of many other recent critical analysis and notes over central banking practices is that central banks have to consider consulting to some long-forgotten tools such as helicopter money (government direct funding) and new alternatives focusing on real sectors of the economy.

Let's make one thing clear here: we definitely are not recommending that the central banks should be 'the only game in town', as they have been post the 2008-crisis period. We are recommending new policy options in response to a changing environment. What we are saying basically is that: A change in focus and a shift in monetary policy are needed. This is in addition to most other urgent structural reforms such as the education system reforms (to build up human capital), infrastructure investment (to consider the Islamic finance and other funding schemes and have high multiplier effects), improving efficiency and dynamism via flexible labor and capital market structure, and reforming the tax system in a way that would decrease income inequality (by more direct taxes on businesses and less indirect taxes on the poor) etc.

The suggested reforms cover Turkey and most other similar developing countries. More broadly, increasing competition, technological improvements and innovation as well as the institutional change are necessary factors to contemplate upon. El-Erian (2016) also adds that the Central Banks have recently been doing more than they should usually do and that the governments should also step in to take more responsibility to improve the conditions for long-

term growth. What we recommend, in addition, is that central banks need to change their focus. The focus should change from a pure inflationary obsession towards more realistic objectives of real economic growth, financial stability, inequality, unemployment as well as more international cooperation.

Monetary policy is changing: at country level, within a country and over time. It is meanwhile diverging across national economies (Bagis, 2017). We may see a move back to the conventional tools such as the interest rate channel (that was indeed helpful at some point in the past) or to more unconventional tools such as forward guidance. This research claims a move 'back-to-black' would indeed not be beneficial for any country.

Overall, nominal targets such as price stability and exchange rate stability are still more common today, among developing and advanced economies. Yet, the new approaches in central banking and monetary policy-making that we mention here, are predominantly focusing on how the central banks could support growth and employment; how to balance inflation targeting, price stability, growth and financial stability; even how to achieve monetary and fiscal coordination, and more regulation, economic growth and decreasing the ever increasing inequality (Piketty, 2014).

During the past few decades, we have achieved transparency, accountability, management of expectations, and central bank independence with the Neo-liberal central banking revolution. We also gained better communication (post the 1994), calendar guidance (post the 2000s), forward Guidance (early 2000s), data dependence (benchmarks for specific variables), new measures such as QEs (LSAPs, credit easing, ABSs, TLTROs etc.) and negative rates, financial stability and international coordination, banking supervision. The list could, of course, be lengthened further.

In that regard, and considering the new normal in the new era; a broader focus on price stability, output stability and financial stability as well as more emphasis on regulation, economic growth, employment and inequality should be expected to outshine looking forward. Meanwhile, as pointed out by El-Erian (2016), post the Great Recession of 2008-09, central bank policies have turned into the only game in the town of policy-making. It is therefore time now that politicians also take responsibility and coordinate their policies with the central banks.

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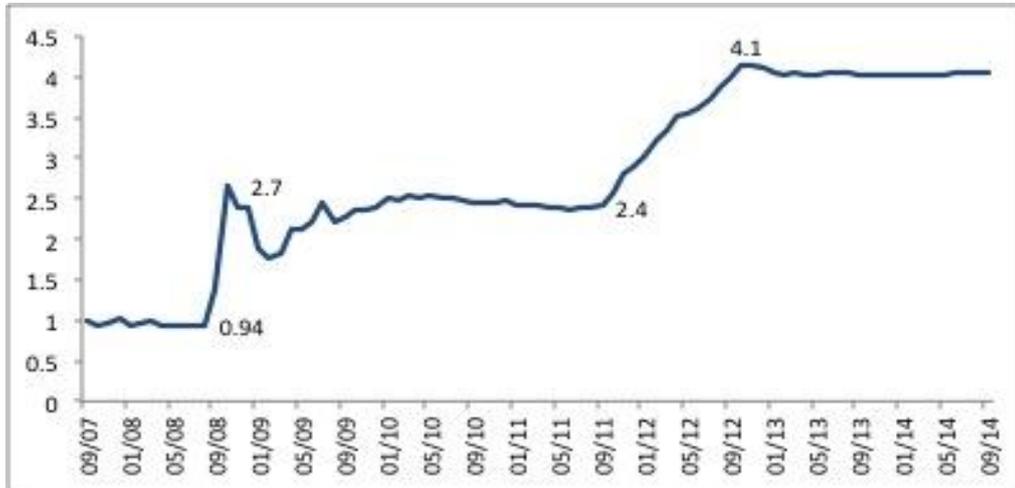
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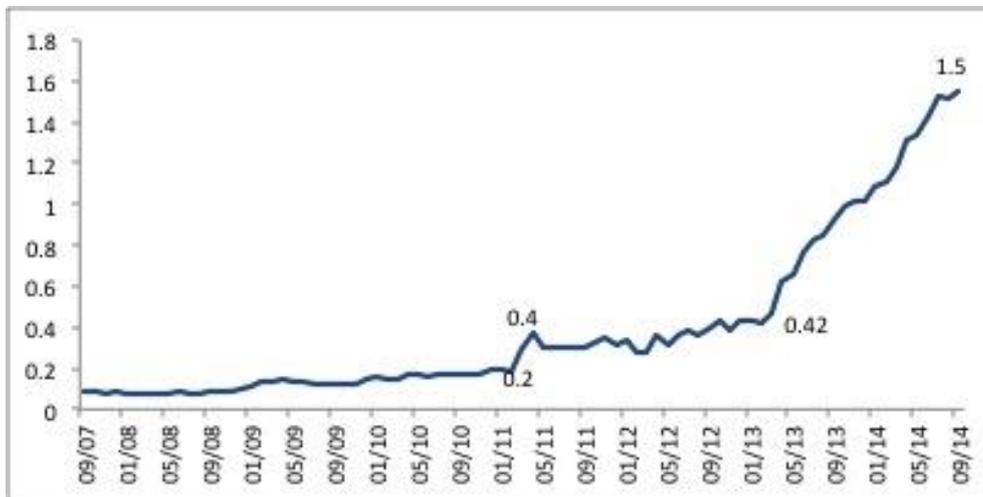
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**Appendix**

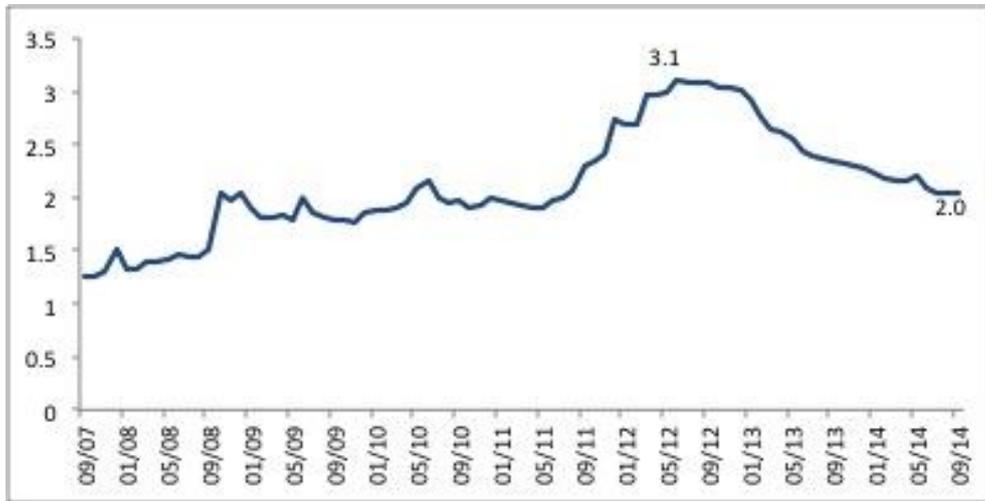
The unprecedented expansion in Central Bank balance sheets during the Great Recession.



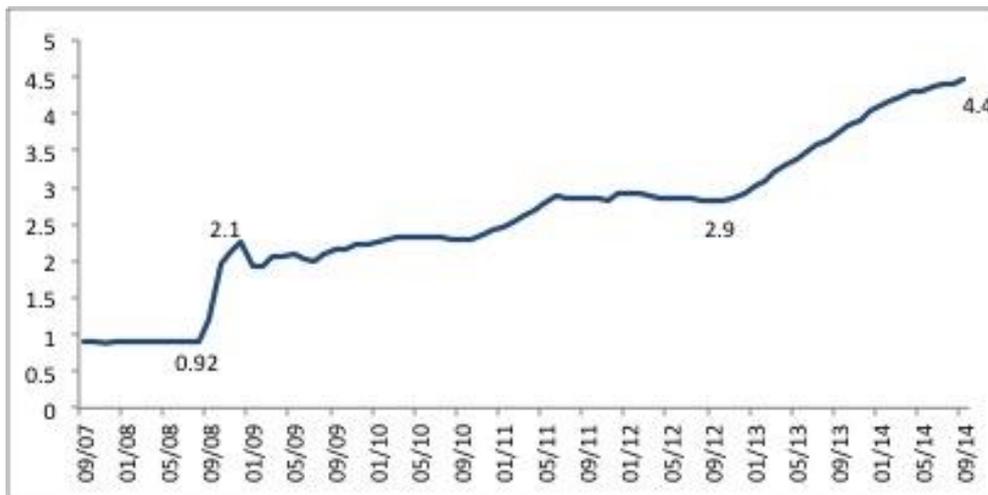
**Figure A1. The BOE Balance Sheet**  
Source: Bloomberg (2016) & FRED (2016) databases.



**Figure A2. BOJ Balance Sheet**  
Source: Bloomberg (2016) & FRED (2016) databases.



**Figure A3. The ECB Balance Sheet**  
Source: Bloomberg (2016) & FRED (2016) databases.



**Figure A4. FED Balance Sheet**  
Source: Bloomberg (2016) & FRED (2016) databases.