



**From Trilemma to Dilemma:  
Monetary Policy Effectiveness after  
the Bretton Woods World**

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# **From Trilemma to Dilemma: Monetary Policy Effectiveness after the Bretton Woods World<sup>1</sup>**

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Abstract:

Many argue that the concept of the trilemma, referring that out of independent monetary policy, free capital movement and fixed exchange rate regime only two can exist at the same time, is a potent tool to explore the effectiveness of monetary policy during the Bretton Woods (BW) regime and afterward. However, under this regime, besides capital controls, regulated domestic financial markets and diversity in central bank instruments contributed to the existence of the independent monetary policy. After the collapse of the BW system, capital controls were lifted, domestic financial markets were deregulated, remaining regulations were not implemented properly, and short-term interest rates became the sole instrument of central banks. The size of financial flows and financial markets has reached unprecedented levels. The effectiveness (either short- or long-term) of a central bank mainly depends on the institutional framework in which the central bank operates. Since there have been very dramatic changes in the institutional structure enabling domestic and international financial markets to be much more decisive in determining asset prices and credit expansion, the ability of central banks in both developed and developing countries has weakened although this is much more apparent in developing countries. This process can be considered a gradual transition from trilemma to dilemma implying that under current conditions exchange rate regimes become relatively irrelevant for the effectiveness of central banks especially in developing countries. The unorthodox policies implemented after the global financial crisis in both advanced and developing countries can be considered an incomplete realization of the dilemma by central banks.

Keywords: Bretton Woods System, trilemma, dilemma, capital flows, monetary policy.

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<sup>1</sup> This paper is heavily drawn on my previous studies such as Cömert (2013), Cömert (2016) and Cömert (2017). I am very grateful to the comments and suggestions of Gerald Epstein, Virginie Monvoisin, Louis-Philippe Rochon and the participants of the Grenoble Conference 2017. All remaining errors are mine. A slightly different version of this study will be published in *Finance Growth and Inequality: Post Keynesian Perspectives* (Edward Elgard Publishing) edited by Louis-Philippe Rochon and Virginie Monvoisin.

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## I. INTRODUCTION

The gold standard implemented in the 19<sup>th</sup> century collapsed at the beginning of the First World War. After 1918, several attempts to return to the gold standard failed. The Great Depression and the following developments made the return to the gold standard impossible.

With the end of the Second World War, a new international institutional structure was sought under the leadership of the US and the United Kingdom (UK). This search resulted in a treaty signed in 1944 in the town of Bretton Woods (BW). With the BW treaty, a new phase began in the Western world economy.

In this article, we will investigate factors affecting the independence (effectiveness) of monetary policies during and after the BW system. We use the concept of independent monetary policy to include the effects of central bank policies on key macroeconomic variables<sup>3</sup>. In this respect, we use monetary policy independence and effectiveness synonymously throughout the text.

The main arguments of the paper are as follows: It is possible to talk about the relatively independent (effective) monetary policy under the BW system. The concept of trilemma (impossible trinity), suggesting that out of three concepts of independent monetary policy, free movement of capital, and fixed exchange rate regime only two can exist at the same time, may be useful to understand the BW period. Conventional interpretation implies that under fixed exchange rate regimes, capital controls made independent monetary policy possible during the BW period. However, if independent monetary policy prevailed under the BW system, besides controls on capital movements, it is necessary to mention two more factors that made independent monetary policy possible:

- a) Domestic financial markets were relatively under tight controls and,
- b) Central banks utilized multiple instruments.

The effectiveness of monetary policy in the post-BW system suffered considerable damage both in developed and developing countries whereas conventional theory suggests that the transition to flexible exchange rate regimes in response to the liberalization of capital movements

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<sup>3</sup> In our framework monetary policy independence does not only imply the ability of central banks to set their interest rates independent of foreign interest rates.

was sufficient for monetary policy independence. In other words, according to this view, the concept of the trilemma retains its explanatory power in the post-BW period. However, contrary to this view, the process after the BW can be interpreted as a convergence process to dilemma implying that exchange rate regimes became irrelevant especially in the developing countries. While financial markets and capital movements have reached enormous sizes, central bank policy choices based only on overnight interest rates have contributed to the reduction of central banks' effectiveness in both developed and developing countries. The unorthodox policies implemented after the global financial crisis in both advanced and developing countries can be considered a partial realization of the dilemma by central banks.

There has been growing number of studies on trilemma and dilemma (Obstfeld et al. 2005; Aizenman et al., 2008; Aizenman, 2011; Georgiadis and Mehl, 2015; Klein and Shambaugh, 2015; Obstfeld, 2015; Rey 2015) some of which will be discussed in the text in detail. This study tries to interpret the BW period and afterward from a different perspective based on the findings of existing literature and the author's previous studies. This paper has many affinities with Rey (2015). She (2015) states that central banks in developing countries under the influence of financial flows cannot follow independent monetary policy. She claims that it is a dilemma rather than the trilemma. I highlight that even under the BW system, the monetary policy independence was related to the institutional structure in addition to the capital controls. Dramatic changes in central banking practices and domestic financial markets have contributed to the post-BW developments significantly alongside capital liberalization. Financial flows have played a central role in this process in developing countries. However, it is increasing the capacity of financial institutions to expand their balance sheets almost without limit has been the driving force in advanced countries. In this sense, although the dilemma has been much more apparent for developing countries, developed countries have not been insulated from this process. Furthermore, Rey (2015) puts too much emphasis on the Fed rate as an essential determinant of global cycles. The Fed rate has also gradually lost its power to influence developments in the US markets. The perspective developed here is more evolutionary, institutional and Post-Keynesian. I argue that the effectiveness (either short- or long-term) of a central bank mainly depends on the institutional framework in which the central bank operates. The institutional framework is mostly determined by the interaction among the regulatory framework, the central bank's choice of tools, international conditions and other dynamic forces within the financial system. Under different combinations of these forces, the

degree of the influence of a central bank over the domestic economy can vary. Therefore, monetary policy discussions should be institutionally and historically specific. As Minsky (1957:171) puts it aptly: “[...] if a period of rapid changes in the structure or in the mode of functioning of financial markets occurs, then the efficacy of central bank actions has to be reexamined.”<sup>4</sup> No such theory can equip economists to understand monetary policy and its interaction with the financial system in all periods. Indeed, as Hicks (1967:156) stated “monetary theory is less abstract than most economic theory. It cannot avoid a relation to reality [. . .]. It belongs to monetary history, in a way that economic theory does not always belong to economic history.”

It is necessary to examine some of the claims of the paper in more detail both theoretically and empirically. However, there is a significant amount of evidence that directly or indirectly supports the main argument of the article.

The outline of the paper is as follows. In the second part, briefly, the emergence of the BW, how it functioned and how monetary policy during the BW period can be investigated with the help of the concept of trilemma will be explained in detail. The third section will expound the collapse of the BW system and changes in central banking, financial markets and financial flows after the BW. Then, focusing on developments in the period after the BW, the fourth section will try to assess the changes in the effectiveness of central banking. The last part will conclude.

## II. BW and MONETARY POLICY

### 2.1 Emergence and Functioning of the BW System

During the 19<sup>th</sup> century, the gold and silver system (bimetallism) and the silver system were abandoned by many countries, and the gold standard became a complete international monetary system between 1880 and 1914. During this period, especially the UK did not hesitate to take the necessary steps to support this system. The economic and financial strength of the UK led other countries to follow the policies of the UK. Also, since it was perceived as a necessary condition for attaining international credits to comply with the gold standard, other countries were generally loyal to the gold standard under the leadership of the UK. Some studies claim that some of the countries violated the rules by manipulating discount rates even under the gold standard

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<sup>4</sup> In the same spirit, Minsky concludes his 1986 article as follows: “[T]he further evolution of the financial structure and the relationships between finance, money, investment and employment are likely to diminish our ability to contain turbulence.” (Minsky 1986:352)

(Bloomfield, 1959). However, other studies suggest that until 1914 discretionary policies were not used extensively to threaten the system and if used in an emergency, they soon returned to the old rules (Schwartz, 1984).

The efforts to return to the gold standard in the 1920s did not succeed due to various reasons. These include the existence of two reserve currencies, lack of leadership, and lack of coordination between strong countries. These can be added to the fact that France and the United States have been supporting deflationary pressures around the world by sterilizing their balance of payment surpluses (Bordo, 1993).

The system in this period can be called the gold-exchange standard. The difference between this system and the gold standard was that some currencies could be converted at a fixed price to another currency that is convertible in gold. In this system, less gold reserves were supposed to be needed than the classical gold standard.

At the end of World War II, efforts for a new international monetary system began. The aim is to avoid the uncertainties and crises that occurred after 1914. The treaty was signed on July 1, 1944, in the town of Bretton Woods, USA. With this agreement, the foundations of the IMF and the World Bank were laid. The new system aimed at the stability of the exchange rates as in the case of the gold standard. However, capital controls were one of the pillars of the new system whereas the gold standard was based on free financial flows. According to this system, the participating countries would set parity and apply the monetary policy to allow this parity to fluctuate upwards and downwards by only 1 percent. The parity could be changed by participants up to 10 percent after consulting the IMF for severe imbalances or by prior notice.

According to the BW agreement, while capital controls are possible, member states must allow convertibility of their currencies after a certain period. Exchange controls may continue during the transition period. Member countries can use funds from the IMF to help resolve short- and medium-term balance of payments problems. To this end, a shared pool of funds has been established in which all member states participated at certain levels. According to the treaty, the value of 35 US dollars was fixed to one ounce of gold. The other members' currencies are fixed in terms of dollars. This system can be called a pegged exchange rate system since member countries can change exchange rates in times of significant problems.

Separating the BW system into two main periods is possible. The first period covers 1946-1958 (pre-convertible) years, while the second period covers 1959-1971. The full convertibility was achieved in 1958. For a long time, currencies outside of the US dollar were not convertible. This was related to the fact that two-thirds of the world gold reserves was concentrated in the US and other countries did not have enough dollar reserves due to their current account deficits. During the 1950s, Marshall's plan played a vital role in the overcoming of this situation as the European countries began to have current account surpluses.

After 1958, the BW system became fully functional. During the BW period, many countries maintained restrictions on capital movements. However, after the mid-1960s, capital controls were being used more widely in the United States, while the frequency of controls in other countries gradually decreased (Bordo, 1993).

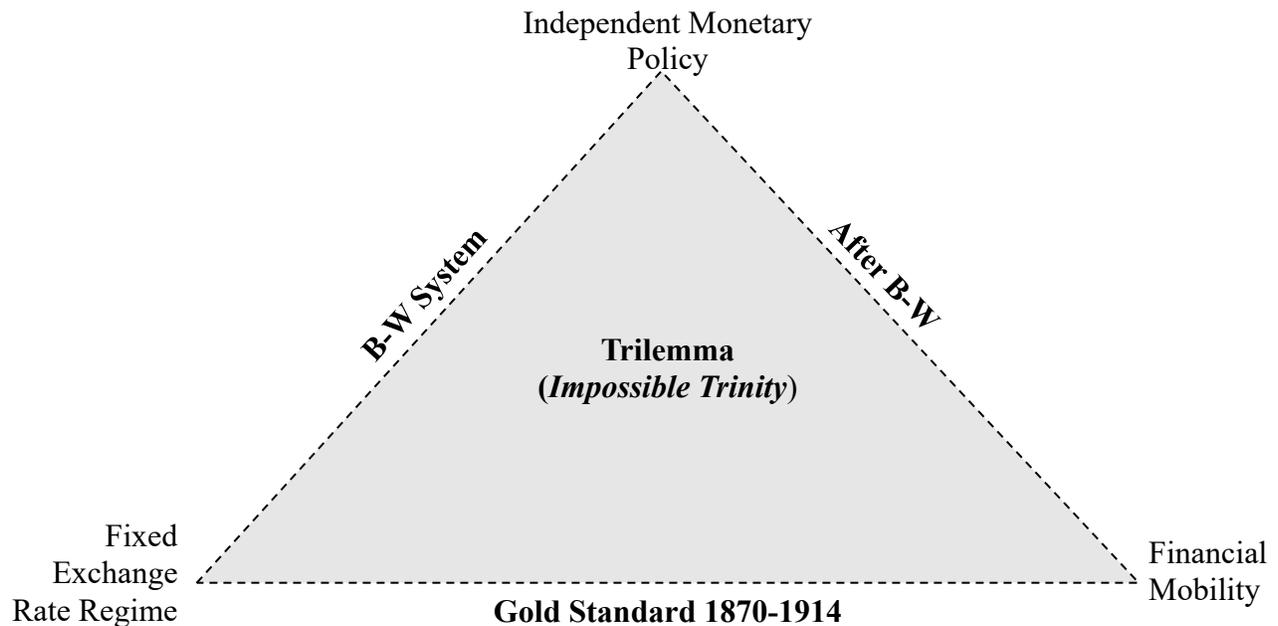
## **2.2 Understanding the Monetary Policy under the BW System**

As can be seen, the two primary backbones of the BW system were fixed exchange rate regimes and capital controls. The general belief is that central banks can implement an independent monetary policy under the BW system (Obstfeld et al., 2005). This is illustrated by the concept of trilemma (impossible trinity) (Figure 1). According to the literature, in the period of "classical gold system" (1880-1914), capital mobility and fixed exchange rate regime (the two points at the base of the triangle) were preferred. In the BW period, while the capital mobility was abandoned, fixed exchange rate and independent monetary policy (left two corners) were preferred. Thus, monetary policy independence is assumed to be provided merely by the controls on capital movements under fixed exchange rate regimes.

Similarly, as will be discussed in detail below, the trilemma implies that after the BW system, the fixed exchange rate regime is abandoned at the expense of capital mobility. In this approach, there is no distinction between independent monetary policy and monetary policy effectiveness. Independent monetary policy is defined as the ability to set the interest rates (short-term) independently of foreign interest rates. This is considered enough to reach domestic targets. Accordingly, in general, the independence of the monetary policy is mainly measured by looking at the correlation between domestic interest rates and foreign interest rates (Aizenman et al., 2008). The low correlation between domestic policy rate and Fed/ECB interest rate is considered as an

indication of independent monetary policy. High correlation means lack of monetary independence.

**Figure 1: Original Trilemma Framework**



This framework implies that under the right combination of capital mobility and exchange rate regimes, central bank instruments (in particular interest rates) have a capacity of influencing the ultimate targets such as inflation and national income (even if in the short-run) through determining market interest rates, credit expansion and expectations. Theoretically, the classical Mundell-Fleming (MF) model (IS / LM model) or the variants of this model have been used to support the trilemma. In this model, it is possible to determine the domestic interest rates differently from the world interest rates under the fixed exchange rate regimes with capital controls. When capital movements are free, domestic interest rates should be equal to world interest rates. International interest rates are affected by mainly very advanced countries.

The mechanism operates as follows: If a central bank wants to implement an expansionary monetary policy, domestic interest rates will decline. If financial flows are free, when the domestic interest rates fall below the foreign interest rates, ceteris paribus, there will be a reversal in financial

flows because the returns on foreign financial assets are higher than those of domestic assets. This situation put downward pressure on the value of domestic currency. Central banks aiming at keeping exchange rates constant have to use foreign exchange reserves. In theory, it is expected that foreign exchange sales will reduce the money supply in the domestic market and bring interest rates back to world interest rates. In other words, monetary policy is not effective when there is a fixed exchange rate regime with free capital mobility. The effectiveness of monetary policy takes place only by giving up free capital movements or the fixed exchange rate regime. Under the BW system, capital mobility is the parameter given up. Alternatively, under the assumption that central banks can strongly and predictably influence domestic interest rates, different versions of uncovered interest rate parity which has been one of the backbones of current international macroeconomics imply trilemma as well. Although this framework has its problems, one does not have to assume exogenous money supply within this framework<sup>5</sup>.

However, as Minsky and Hicks imply, without paying enough attention to institutional structure and actual functioning of central banks, the trilemma framework can only give an incomplete and sometimes misleading picture. If central banks followed an independent monetary policy under BW, two other important factors complemented capital controls. First, central banks used a multi-tool set during the BW period. Second, domestic capital markets were relatively under tight control during the same period.

Central banks concentrated not only on short-term interest rates such as overnight interest rates in the BW period but also on a wide range of policy instruments. For example, in the United States, as part of the “Regulation Q,” ceilings on interest rates were actively used (Volcker, 2002). Similarly, credit controls were implemented in the United States and many other countries whenever it was deemed to be necessary. Margin requirement was another tool used to influence the dynamics of financial markets. According to Shiller (2000), margin requirements were one of

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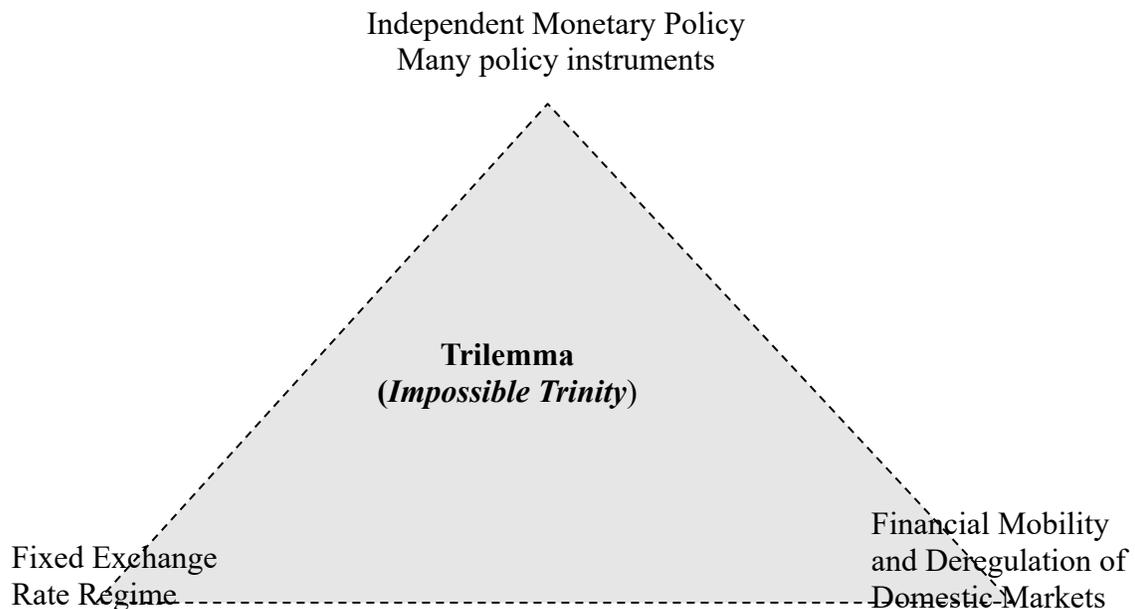
<sup>5</sup> Under a fixed exchange rate regime with capital controls, considering that central banks can determine market interest rates by setting its overnight interest rates and investment/consumption is sensitive to interest rates is enough to justify existing of independent monetary policy. When one relaxes the assumption of capital controls but retains the fixed exchange rate regime, as in the case of trilemma, domestic interest rates cannot be different than world interest rates. The burden of the adjustment will be fully carried by interest rates. Under flexible exchange rate regimes with capital mobility, some part of the adjustment will take place through changes in exchange rates. As a result, in general, independent monetary policy will retain its validity.

the most active means used by the FED before the 1980s. Furthermore, reserve requirements were actively used to influence banks' credit expansion decisions (Feinman, 1993; Comert, 2013). Discount rates were the preferred means of affecting the liquidity demand in the banking sector. European countries and Japan did not lag behind the United States in using multi-monetary policy instruments. In a series of studies, Gerald Epstein (2006 and 2013), shows that many developing countries after 1945 also resorted to various monetary policies to influence financial markets and reach developmental goals in an institutional framework in which state-run banks were the dominant financial actors in these countries.

During BW, central banks did not use only a large set of tools; they also conducted monetary policies in relatively more regulated national financial markets. For example, the Glass-Steagall Act introduced in the United States in 1933, separated investment banks and commercial banking with strict lines. Thus, US authorities tried to prevent commercial banks from directly or indirectly dealing with assets such as bonds and stocks (Barth et al., 2000). During this period, the banking system in the US and Western countries focused on collecting deposits and providing real sector loans. During the period state-owned banks which can be more easily affected by central banks made up an essential part of the financial system especially in many European countries (Eichengreen 2005). Also, central banks and other relevant institutions implemented the existing rules more stringently than in the post-BW period (Cömert, 2013).

Given the central banks' use of multi instruments and tighter supervision of the financial markets, trilemma under BW can be revised as in Figure 2. The common point between this figure and the previous one is that the fixed exchange rate regime and capital controls were implemented although the effectiveness of capital controls decreased gradually. Figure 2, in addition to Figure 1, emphasizes multiple central bank instruments and regulated financial markets. This figure implies that under the BW period when capital flows were relatively limited and internal markets were tightly controlled, and central banks have more possibilities to effectively use multiple policy instruments in their hands to reach national macro targets.

**Figure 2. Modified Trilemma under the BW System**



### **III. THE COLLAPSE OF THE BW SYSTEM AND MONETARY POLICY IN POST BW ERA**

#### **3.1 The Collapse of the BW System**

However, the BW system, which provides an institutionally more favorable framework for the implementation of the monetary policy, began to erode over time. Various reasons for this have been put forward in the literature. Here we will briefly mention some of the main factors.

Many authors (Triffin, 1960; Kenen, 1960; Gilbert, 1968) argue that the gold-dollar system could not be stable because world gold production was below the total production of goods and services. In cases where the gold supply is insufficient, it is expected that the price of an ounce of gold (35 dollars) will increase. However, the BW system gradually became a fixed exchange rate system due to concerns regarding the trust and cost problems of frequent adjustments in exchange rates (Bordo 1993).

The dollar supply must increase for the system to function properly. The increase in dollar supply depends on the current account deficit or overall balance of payments deficits (excluding reserves) of the leading reserve currency country. Although the US gave the current

account surplus, US net financial account was negative from 1958 to the end of the BW system, due to massive capital outflows. This implies an increase in the supply of dollars outside the US. However, the Triffin Dilemma suggests meeting the liquidity needs of the world markets through US deficits cannot be the long term solution to the problem caused by low gold supply. The Triffin Dilemma claims that even if it is necessary to increase the dollar supply, giving high current account deficits for a long time can undermine confidence in the reserve currency. In such an environment, if a flight to gold starts, the fixed exchange rate cannot be sustained.

The ratio of the US dollar supply outside the US to the total US gold reserves gradually increased after the mid-1950s. In 1959, while total dollar obligations were equal to US gold reserves, the total gold reserves of other countries in the same year exceeded US gold reserves. In 1964, official US dollar obligations held by the foreign monetary authorities surpassed the US dollar stock (Bordo, 1963). The likelihood that the US dollar could be converted into gold reserves, which was relatively low against the dollar supply, hanged over the BW system as a Damocles' sword.

One of the reasons behind the increase in dollar supply in world markets is considered the US expansionary monetary policy to boost domestic production. This contrasts with the attitude of the UK between 1880-1914. For some, utilizing US monetary policy to address exclusively domestic needs meant that the US monetary policy was not suitable for the base currency.

The BW system was a system built upon commitments (promises). There was no official sanction under the BW system except for the reputation-related concerns. In this system, it was assumed that the US was obliged to sustain price stability after the value of the dollar was stabilized against the gold. By accepting the fixed exchange rate regime, other countries are assumed to be allowing US price levels as the main determinants of their price levels. At the same time, it is expected that the US will also provide the necessary dollar supply.

In such a case, the continuation of the fixed exchange rate regime depends on the coordination between the countries and the existence of a powerful leader country. Coordination between countries within the BW system gradually decreased. Some countries took steps directly against the system by either converting their dollar reserves into gold or threatening to convert their reserves into gold. For example, in 1965, Charles de Gaulle of France, who was not pleased with the dominance of the US dollar, started to convert the dollar reserves into gold reserves which began to put the United States in a difficult situation (Eichengreen, 1998). Furthermore, during

this period, the US's ability to lead was increasingly eroded due to factors such as the Vietnam War and the fast recovery in Europe and Japan.

Increased international capital flows and growing national financial markets exacerbated the structural problems of the BW system. Capital movements along with the controls on financial markets were gradually deregulated throughout the period. At the same time, some financial innovations, such as Euro-dollar accounts, reduced the effectiveness of controls over capital movements and financial markets.

Increasing dollar supply may create inflationary pressures and may deteriorate confidence in an environment where the coordination between countries declines, the leadership capacity of the leading country diminishes and capital movements and financial markets reach considerable sizes. The first symptom of the confidence crisis emerged in the 1960s when the demand for gold increased suddenly. Soon after, to tackle this problem, the Fed and seven major central banks came together to form the London gold pool. In the 1960s, alongside the creation of a gold pool, the United States took extra measures to protect its gold reserves. Swap agreements, Roosa<sup>6</sup> bills and moral suasion were among them. Although these efforts contained the impacts for a while, they did not prevent the gold reserves of the United States from diminishing.

In April 1971, the US ran a trade deficit for the first time after a very long time. This meant that the already existing pressure on US gold reserves would increase. Allowing the dollar to depreciate started to be discussed in the US. The intention of the UK and France to convert their dollar reserves into gold at the beginning of August worsened the situation. In response to these developments, the US suspended the convertibility of the dollar to gold on August 15, 1971. As a result, the BW system collapsed. Although there were some attempts to modify the BW and implement a similar international monetary system for a while, the oil shocks of the 1970s directly and indirectly adversely affecting employment, growth, and inflation in non-oil export countries nailed the coffin of the BW.

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<sup>6</sup> Roosa bills were US treasury bills launched on the initiative of US Treasury Counsel Robert Roosa to reduce gold demand. This plan aimed at replacing the US dollar with reliable long-term US papers. It can also be considered as a method of international sterilization process (Makin, 1971).

### 3.2 Monetary Policy After the BW

As in the case of the end of the BW period, the increasing role of financial movements may limit central banks' ability to implement independent/effective monetary policy. In such a case, the trilemma framework suggests either abandoning the independent monetary policy or not defending the exchange rate.

The US stopped defending the fixed exchange rate system and the convertibility. Many consider it an inevitable implication of the trilemma. Since there was no other reserve money to replace the US dollar, the US dollar maintained its reserve currency position even in the post-BW period. As in the US, most of the developed countries started to follow floating exchange rate regimes. In Europe, efforts to reduce the volatility of exchange rates continued after the BW. After some trials and errors, the European monetary system was established in 1979. Although it had a big crisis in 1992, the system survived and converged to Eurozone in 2002. While the Euro replaced local currencies, it was left to fluctuate against other world currencies. Developing countries tried to fix or heavily managed their exchange rates for a while. Indeed, multiple exchange rates were implemented as part of industrialization strategy in Latin America and many other countries during the 70s. After the 1980s, in response to high inflation and other problems, many IMF led programs were based on exchange rate pegs<sup>7</sup>. However, along with financial liberalization, fixed or exchange rate pegs ended up with devastating currency crises in almost all countries implemented these policies. As a result, the majority of developing countries started to follow flexible exchange rate regimes after the beginning of the 2000s.

All capital control policies in developed countries were completely lifted after the early 1980s. Developing countries removed capital controls after the late 1980s. In particular, the IMF

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<sup>7</sup> The IMF was established as a part of the BW system together with International Bank for Reconstruction and Development (IBRD, now World Bank). Under the BW system, to be able to defend the system, the IMF was supposed to provide temporary finance to those countries having balance of payment problems. The IMF was also tasked for the approval of significant exchange rate adjustments by member countries. However, from the beginning, the IMF was significantly influenced by the USA due to structure of its voting system allowing the countries with higher quotes to have more say in the decision making process. The US with one third of all quotes had de facto veto power over all the decisions of the IMF. After the collapse of the BW system, the IMF became much more instrumental and active in pushing for the US and its close allies' agenda worldwide.

has played a very pivotal role in promoting full capital mobility in developing countries. In parallel with this, the US also pushed for capital mobility in these countries by making free capital mobility as a part of bilateral commercial treaties with them.

As discussed above, the choices regarding capital mobility and exchange rate regimes changed in the post-BW period. In parallel with these changes, there have also been fundamental changes in central banking over time. Under the influence of the monetarist approach, the central banks of advanced countries used monetary aggregates as a primary tool for a short time. After a while, they started to use only short term interest rates.<sup>8</sup> Monetary policy instruments such as margin requirements, credit controls, required reserve ratios, moral suasion, discount rates, etc., which were actively used previously by many central banks, were removed from active use.

Along with the changes in the instruments of central banks, the aims of monetary policy have also changed significantly. Inflation has been adopted as either the sole target or the primary target. In this context, formal or informal inflation targeting regimes have become the policy framework for many central banks in developed countries. The conventional economic theory concluded that central banks don't have the power to influence variables such as growth and unemployment in the long run and that expansionary monetary policies will only generate more inflation. These ideas and practice have been followed by most of the developing countries, albeit with some lags<sup>9</sup>.

While the obstacles on capital movements were lifted during the 1980s and central banks abandoned many of their previous instruments, financial markets also experienced a very considerable transformation. Financial innovations such as securitization and derivatives have gained importance in advanced countries. Financial innovations have been supported without any scrutiny with the assumption that they will reduce risks and increase productivity. The existing

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<sup>8</sup> According to Thornton (2004:489) “sometimes between October 1982 and late 1980s the Fed began explicitly targeting the federal funds rate, but the market was unaware of it.” It was only the beginning of the 1990s when the market started to realize it (Poole et al. 2002). The Fed has only officially announced the Federal Funds rate targets since 1995, although it started explicitly announcing changes in its policy stance in 1994.

<sup>9</sup> As explained above developing countries implemented exchange rate based programs even in the form of currency boards in order to tackle with especially high inflation. In many countries, central banks were tasked to follow structural adjustment programs mainly composed of a package of domestic financial deregulations and financial mobility. Paradoxically, under these circumstances, in many cases, they were also mandated to keep variants of a pegged exchange rate regime.

regulations on financial markets have either been lifted or applied very loosely. For example, in the United States between 1980 and 1986, as a part of the liquidation of the “Regulation Q,” interest rate ceilings were lifted (Gilbert, 1986). Similarly, the Glass-Steagall Act separating commercial banking and investment banking, gradually lost its importance (Barth et al., 2000), due to financial innovations and some previous changes, and was completely abolished in 1999. Changes in the legal framework in the US and elsewhere have determined the institutional transformation in the financial system to a significant extent. However, the interpretation of existing legislation in favor of financial institutions also contributed to this process (Cömert, 2013). For instance, in 1986, by taking advantage of holes and vague definitions in the Glass-Steagall Act, the Fed permitted bank holding companies to have subsidiaries which could conduct some security operations, if the revenue regarding these operations is not making more than 5 percent of the Bank’s gross revenue. Indeed, the Fed and many other institutions tried to do their best to stop all regulatory attempts. At the end of the 1990s, when Commodity Future Trading Commission (CFT) attempted to bring a new set of rules for derivatives including Credit Default Swaps (CDSs), it was the Fed who used all its prestige and power to stop this attempt. Levine (2010: 18) aptly points out that “the Fed’s decision to maintain its regulatory stance toward CDSs was neither a failure of information nor a shortage of regulatory power. It was the result of the belief that financial markets can self-regulate itself.” Other regulatory institutions followed suit. “In 2005, the SEC even closed its risk management office and did not inspect a single investment bank. These activities took place about two years before the most recent crisis.” (Labaton 2008, cited in Levine 2010:24)<sup>10</sup>.

Due to the deregulations of financial flows and financial markets, the importance of financial flows increased, and the size and the impacts of financial markets reached unprecedented levels. In such an environment, as explained above, central banks began to rely on short-term interest rates solely. How did these developments influence the ability of central banks to implement independent/effective monetary policy? According to many economists, conducting monetary policy with short-term interest rates is sufficient for both inflation and financial stability

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<sup>10</sup> In a similar way, in 2004, the Security Exchange Commission (SEC) allowed the five largest investment banks to use their own models to determine how much capital they should keep for their operations. According to Nadauld and Sherlund (2009:4), this would enable the largest investment banks to reduce their capital needs by 30 to 40 percent.

(Woodford, 2002). In the international context, it is considered that the free exchange rate regime is sufficient to implement an independent monetary policy. In other words, choosing the right corner of the trilemma configuration is enough to implement effective monetary policy. For example, according to Papademos (2008), former deputy European Central Bank vice-president, even in a fully integrated world economy, central banks of relatively small economies may have an impact on domestic demand, as long as they follow a flexible exchange rate regime. In general, the conventional view in economics is that the developments in national and international financial markets have only slightly complicated the work of central banks and force them to think more carefully (Geithner, 2006, Bernanke, 2007).

Some explicitly utilized the concept of trilemma and attempted to demonstrate existing effective/independent monetary policy under flexible exchange rate regimes and capital mobility. For example, researchers from ECB, Georgiadis, and Mehl (2015) claim that financial globalization has amplified “monetary policy effectiveness in the typical advanced and emerging market economy.” They argue that due to financial globalization contractionary monetary policy has been more powerful by 40 percent. Therefore, according to them “classical trilemma is valid.”

Some others are more cautious in their assertions though, at the last instance, they defend the validity of the trilemma for BW and post BW period in different configurations. For example, Klein and Shambaugh (2015:36) claim that “countries with pegged exchange rates and open capital accounts have less monetary autonomy than those floating exchange rates and or capital controls.” In a similar vein, constructing a monetary independence index, Aizenman et al. (2008) argue the existence of tradeoffs.<sup>11</sup> They claim that when a country chooses more exchange rate flexibility and more capital mobility, it needs to give up some of its capability of independent monetary policy. According to this trade-off approach, different degree of capital mobility, exchange rate flexibility and monetary autonomy can exist at the same time. For example, if a country chooses exchange rate flexibility and capital mobility, this country can still have both some degree of autonomy and exchange rate peg unless it prefers full fixed exchange rate regime. Considering reserve accumulation of developing countries, Aizenman (2011) argues that an extended Trilemma framework can be a useful tool to understand developments especially after 2002 in developing

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<sup>11</sup> In Aizenman’s words (2011:3) “a lingering challenge is that in practice, most countries rarely face the binary choices articulated by the Trilemma. Instead, countries chose the degree of financial integration and exchange rate flexibility”.

countries. According to him, a higher level of accumulated reserves can be used to ease the trade-off at least in the short run. Investigating the determinants of short term and long term interest rates, Obstfeld (2015:2) is clearer about the constraints on monetary policy in developing countries<sup>12</sup>. He argues that those countries with relatively flexible exchange rate regimes have more influence on the short end of the term structure “but long-term interest rates are more highly correlated across countries irrespective of the exchange rate regime.” However, although Aizenman and others in this group accept the decline in the space of monetary policy by accepting the possibility of non-corner solutions, they highlight opportunities rather than a structural constraint and convergence to dilemma imposed upon (in some cases supported by) central banks.

There have been counter voices as well. Rey (2015) states that the situation in developing countries is a complete dilemma. She investigates the co-movement of gross flows and assets prices and reports that these global co-movements are closely related to the risk aversion and uncertainty which has been very sensitive to interest rates in the center countries. As a result, she (2015:21) argues that “fluctuating exchange rates cannot insulate economies from the global financial cycle when capital is mobile. The “trilemma” morphs into a “dilemma” – independent monetary policies are possible if and only if the capital account is managed, directly or indirectly, regardless of the exchange rate regime.” Focusing on institutional and structural changes in financial markets and central banking in the US, Cömert (2013) calls developments in the US as a dual decoupling between the Fed rate and market interest rates and balance sheets of financial firms. He claims that central banks have gradually lost their power to influence relevant market interest rates and especially balance sheets of financial institutions.

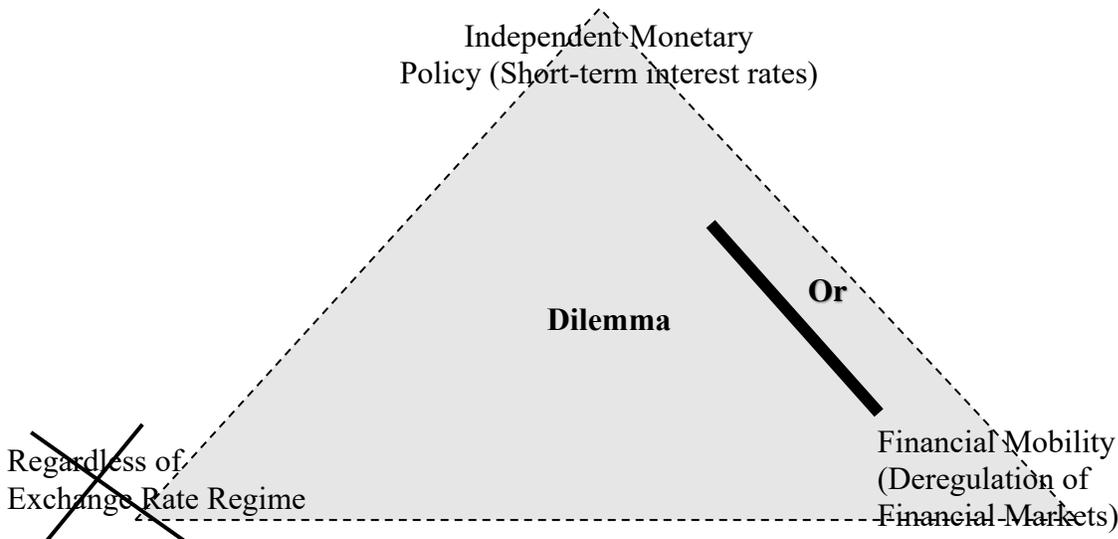
Following Comert (2013) and partially Ray (2015), we argue that the developments since the 1980s have gradually reduced the capacity of central banks to implement effective monetary policy. It would be more accurate to say that the post-BW system has evolved to “dilemma” gradually along with changes in both central banking, financial markets, and financial flows. Dilemma refers that central banks have largely lost the ability to implement effective/independent monetary policy regardless of existing exchange rate regimes (Figure 3). However, this situation

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<sup>12</sup> Although Obstfeld (2015) does not elaborate on it, he is among a few who recognizes the fact that independent/effective monetary policy cannot be reduced to capability of setting official interest rates independent of foreign rates. According to him (2015:2) “independent monetary policy is feasible for financially open EMEs, but limited in what it can achieve”.

shows some differences in developed and developing countries. The main macroeconomic variables are more sensitive to capital movements in developing countries due to relatively shallow financial markets. In the advanced countries, endogenous processes in domestic financial markets seem to have been much more decisive relative to financial flows although financial flows started to influence asset prices even in the US.

**Figure 3: Dilemma**



Asset prices have become less affected by central bank policies in advanced countries. Thornton (2010) shows that the theoretically expected relationship between the FED interest rate and the Treasury bond deteriorated by the end of the 1980s. Cömert (2012, 2013) went one step further and econometrically showed that the relationship between FED's interest rates and all long-term interest rates in the US financial markets decreased gradually. In other words, it seems that the responsiveness of long-term interest rates to the changes in Fed rate decreased gradually. These findings significantly overlap with the conclusions of Warnock and Warnock (2009) on capital movements affecting long-term interest rates even in the United States.

On the other hand, there are signs that the central banks have become less influential on the balance sheets of financial firms as a result of unprecedented changes in both central banking and financial markets. In this sense, these signs imply increasing endogeneity of balance sheet expansions, especially in developed countries. Increasing the degree of endogeneity of balance sheets of financial markets, *ceteris paribus*, means that the central banks have less leverage on the credit expansion in the financial markets. Adrian and Shin (2009) and Cömert (2013) demonstrate

how balance sheets can expand endogenously in response to an increase in asset prices. In such an environment, it is expected that the effects of the central banks' instruments on the expansion of the balance sheets will diminish. For the US economy, Esterella (2002) reports that “[s]ecuritization has likely weakened the impact of any policy move.” Similarly, Altunbas et al. (2009) by using microdata on 3000 euro-zone banks, documents that banks which utilize more securitization are less responsive to changes in official rates.

Table 1 shows that the correlation between FED interest rates and the balance sheet expansion gradually decreased after 1980. Surprisingly, as seen in the recent period (after 2001), even the expected positive relationship between interest rates and balance sheets disappeared; when interest rates increased, there was not even a contraction in the balance sheets of US financial firms in the last period. This result implies that the expected effect of the FED’s monetary policy on balance sheets has not taken place, or/and it has been overcome by some other factors.

**Table 1: Fed Rate and Balance Sheet Expansion in US**

	<b>1982(IV)– 2008(IV)</b>	<b>1982(IV)– 1990(IV)</b>	<b>1991(I)– 2000(IV)</b>	<b>2001(I)– 2008(IV)</b>
	FED	FED	FED	FED
<b>All Sectors</b>	-0.6493	-0.3289	0.5168	0.6647
<b>Finance</b>	-0.6811	-0.3259	0.518	0.5629
<b>Commercial Banks</b>	-0.6579	-0.3202	0.5498	0.5981
<b>Brokers and Dealers</b>	-0.6197	-0.2891	0.3374	0.6016

Source: Cömert 2013

While even the effectiveness of central banks in advanced countries in the post-BW period was influenced by developments in national and international financial markets, the main macroeconomic indicators were determined significantly by external factors in developing countries.

### 3.3 The General Macroeconomic Implications of Financial Flows in Developing Countries<sup>13</sup>

Financial movements directly affect the growth and inflation in a significant way through mainly influencing intermediate food prices, interest rates, credit expansion and foreign exchange rates in developing countries. There are many transmission channels linking main macroeconomic variables to financial flows in these countries. Here, we will shortly explain these mechanisms under the broad categories of credit and asset price channels. An apparent direct mechanism works through credit generation capacity of financial flows. This mechanism can be labeled as the credit channel. Benefiting from the discussion on the transmission mechanism, three parts of the credit channel can be investigated. First, some of the big, non-financial sector firms can directly borrow from international financial markets, which can boost the investment/production capacity of the firms. The second strand of the mechanism works through the banking system. Financial flows in the form of borrowings of domestically operated banks can increase the capacity of the banks to give more credit to domestic consumers and firms. Those banks with access to cheap credit from international financial markets can generate more credit domestically (Igan and Tan, 2017). Third, as elaborated on below, net high positive (negative) financial flows can cause improvements (deterioration) in the balance sheets of banks/other firms through appreciation (depreciation) of the domestic currency. As a result, on the one hand, banks would be eager to give more credit; on the other hand, due to strong balance sheets, non-financial firms would be more eligible to borrow. This link can be labeled as the *balance sheet effect* of financial flows within the credit channel. High credit growth can stimulate high economic growth. Signaling prospects for a healthy economy, high GDP growth may also ease credit constraints on domestic firms to borrow from the rest of the world. Therefore, in general, high financial flows and high GDP growth can create a virtuous credit circle and feed each other until an external or endogenously driven shock hits the economy.

The second channel works through domestic asset prices. Financial flows may exert pressure on the prices of domestic assets by altering supply and demand conditions in financial markets. The asset prices channel can be broadly further divided into interest rates, stock prices, and exchange rate channels. With regard to the interest rate channel, high net positive financial flows may increase demand for domestic bonds which can drive the price of domestic assets up.

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<sup>13</sup> This section is heavily drawn on Comert (2017).

Large amounts of purchases of domestic securities by foreigners may contribute to a significant decrease in the interest rates on these assets by driving up their prices.

Furthermore, if domestically operated banks find cheap funding from foreign sources, they can reduce their lending rates at home without jeopardizing their overall profits. This may indicate a decline in domestic interest rates, which may boost demand for credit and, in turn, consumption and investment expenditures. Furthermore, lower interest rates can strengthen balance sheets by decreasing the operational cost of firms which can increase their net worth and collaterals.

Financial flows may exert some influence on an economy through stock prices too. Portfolio flows include the purchase of domestic stocks by foreigners. In addition to this, if, due to high financial flows, there is a general decline in interest rates in the economy, domestic stock markets may also attract domestic investors, which can cause a further increase in stock prices. This may generate a lucrative funding source for the firms issuing stocks at the domestic stock exchange markets. As a result, these firms may make higher investment expenditures. In the countries where there is widespread public participation in stock exchange markets, high stock prices may also cause a *wealth effect*: economic entities holding high amounts of domestic stocks may feel richer, thereby encouraging them to spend more during times of high stock prices.

Recently, the importance of gross financial flows has rightly been highlighted by many authors (Borio and Disyatat, 2011). However, net financial flows can still be a critical indicator for many developing countries for its impact especially on the availability of foreign exchanges which influences exchange rates (Cömert and Düzçay, 2016) directly. In developing countries, exchange rates are among the most critical asset prices. An increase in the supply of foreign currencies resulting from higher net financial flows brings about nominal appreciation of the currency of these countries against major foreign currencies. Changes in exchange rates can have impacts on an economy through balance sheets, inflation, and the current account. If the agents operating in an economy have different foreign assets and foreign liabilities structures, any significant movement in exchange rates may either deteriorate or improve the balance sheets of the agents considerably. For example, if the majority of firms have more liabilities denominated in foreign currencies relative to their assets, a considerable appreciation of the domestic currency resulting from high net financial flows may improve the balance sheet by decreasing the value of the liabilities in terms of domestic currency. In other words, this process leads to an increase in net worth (the difference between assets and liabilities). As discussed in the balance sheet effect as a

part of the credit channel, an increase in net worth can induce more investment by either easing credit constraints or/and creating extra available funds. Nominal appreciation of currencies of developing countries in the periods after 2002 might have induced more credit and investment. As opposed to the case of appreciation, as documented by the third-generation crisis literature, a significant depreciation of domestic currency resulting from financial reversals (abrupt, substantial slowdowns) may generate a balance sheet crisis (Krugman, 1999). The Asian crisis of 1997 can be considered as an example of a balance sheet crisis<sup>14</sup>.

Changes in exchange rates can also directly influence inflation by affecting the prices of imported intermediate goods. In the case of depreciation of the domestic currency, consumption goods imports can decrease significantly. Although this can reduce competition in domestic markets (by increasing the price of foreign goods) and enable domestic producers producing substitutes for foreign goods to charge higher prices for their final goods, may not contribute to inflation much if domestic content of the production is high or/and domestic substitutes for foreign goods can be found easily. However, many developing countries have to import a significant amount of intermediate goods for domestic production. Notably, those countries without many natural resources have to import oil, natural gas, and many raw materials. As a result, depreciation means an increase in the inflation rate. Indeed, inflation in these countries is very sensitive to developments in exchange rates<sup>15</sup>. In fact, as Benialper and Cömert (2015a) show the main determinants of inflation in emerging countries such as Turkey are external conditions rather than interest rates set by central banks. Similar findings were reported for developing countries in general (Mohanty and Klau, 2001). These findings mean that the tasks of central banks trying to prevent inflation by influencing the demand side through overnight interest rates are not easy. On the one hand, central banks in developing countries may not easily affect financial variables such as market interest rates, credit expansion, and exchange rates because these variables are very

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<sup>14</sup> In the Turkish case, the severity of the crisis of 2001 can be partially explained by the balance sheet effect resulting from a sudden and big depreciation of TL (Özatay, 2009).

<sup>15</sup> Therefore, even under the inflation-targeting regime, central banks in developing countries might benefit from the nominal appreciation or the slowdown in the depreciation of their currencies to bring inflation under control (Benialper and Cömert, 2015a). Indeed, inflation shows a considerable declining trend during the periods of abundance of financial flows, causing domestic currency to appreciate relative to other currencies.

sensitive to financial flows through many channels. On the other hand, inflation in these countries is not associated with demand-side considerably.

Apart from exceptional cases that are mostly related to adverse developments in inflation expectations, the nominal appreciation of domestic currency goes along with real appreciation. The appreciation of the real exchange rates primarily related to financial flows makes exports more expensive and imports prices lower, which can induce current account deficits<sup>16</sup>. Besides this, whenever the growth of these economies coincides with high financial inflows, current account deficits reach record levels. Therefore, financial flows may also widen current account deficits by suddenly easing credit conditions, leading to a demand boom partially boosting imported goods expenditures.

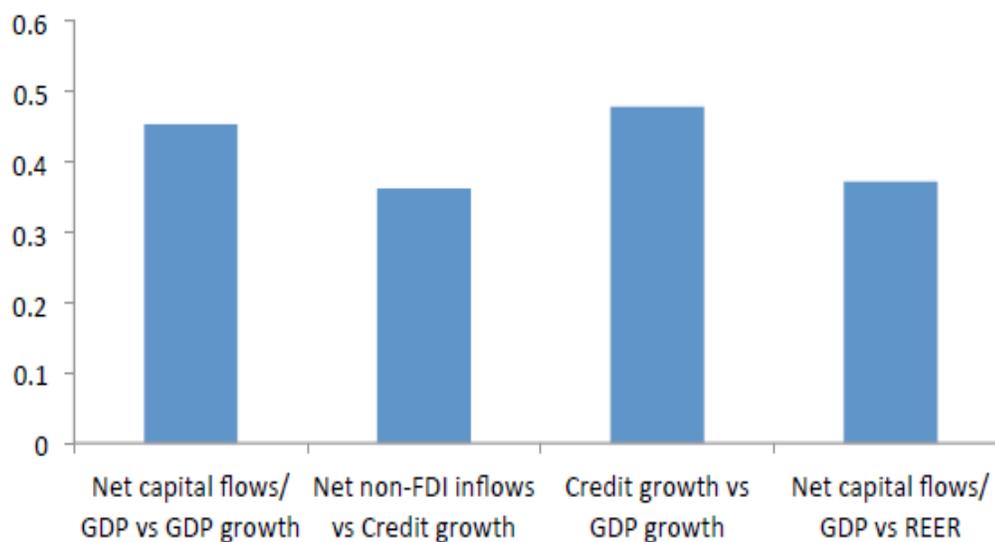
Overall, as discussed above, financial flows affect important macro variables such as exchange rates, interest rates, credit conditions, and stock prices significantly in developing countries. As a result, GDP growth, inflation, unemployment, and the current account balance have been exposed to boom-bust cycles of financial flows. Indeed, as well established in the literature during the boom periods, the developing economies experience relatively high growth while the growth either becomes negative or slows down considerably during the bust periods.

Figure 4 shows the correlation between financial flows and economic growth, loan growth and the real exchange rate for the 16 major developing countries in the 1990-2014 period. The correlation between financial flows and other variables is too high to be neglected. In the studied countries, the average of the correlations is between 0.4 and 0.5. In some individual countries, this coefficient exceeds 0.7. Despite the need for further study, these data support the assertions that at least capital movements and significant macroeconomic indicators are highly related.

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<sup>16</sup> The importance of exchange rates for the trade balance has been a contested topic for a long time. There has not been a consensus on the magnitude and even on the sign of the impacts. However, a long period of a significant depreciation/appreciation of a currency can sooner or later impact on the trade.

**Figure 4: The average of correlations among financial flows and main macroeconomic variables in selected developing countries (1990-2014)**



Source: Benlialper and Cömert 2016

In cases where policy instruments can determine the magnitude and direction of financial flows, it may not be a problem to have major macroeconomic variables significantly affected by capital movements. If policymakers could influence the direction and the magnitude of financial flows to a predictable extent, capital movements could even turn into an instrument of monetary policy. However, capital movements are largely influenced by global risk perception (Rey, 2015). Developments in domestic policy or changes in fragility indicators of individual developing countries may affect financial flows to these countries more than their peers. However, as the global risk appetite begins to decline, capital flows into these countries slow down and even reverse, regardless of the macroeconomic fundamentals and other indicators. While when the VIX (the global risk perception) is high, financial flows in developing economies slow down, in the periods of lower VIX, a significant increase in capital inflows to developing countries was observed.

It is not possible to talk about effective monetary policy when central banks rely on very indirect tools; domestic financial markets reach unprecedented levels; vital macroeconomic variables such as growth and inflation are under the influence of financial flows to a significant

extent, and financial flows are not very sensitive to monetary policy. In this situation, interest rates of central banks become empty signifiers and exchange rate regimes implemented in developing countries become irrelevant. This has been a worldwide phenomenon; however, much more apparent in developing countries. Under these conditions, it can be argued that the trilemma of the BW system converges to the dilemma as in the case of the period after the BW.

## **CONCLUSION**

Controls on capital movements and domestic financial markets as well as multiple instruments used by central banks contributed to the relative independence of monetary policy during the BW system. In this respect, with some modification, the concept of the trilemma can be used to explain this period. However, financial markets have been deregulated while capital movements have been completely freed in the post-BW period. Existing rules have not been implemented effectively. Short-term interest rates have come to the forefront as the only means of central banks. In this process, the central bank's ability to conduct effective monetary policy in both emerging and developed countries has increasingly eroded. However, although developments in domestic financial markets can be much more decisive in advanced countries, developing countries have been much more exposed to boom-bust cycles in financial flows.

This can also be thought of like a convergence process from trilemma to the dilemma. While capital movements are free and parallel to that, financial markets have reached an enormous size, the capacity of central banks to affect credit expansion, interest rates, exchange rates, and stock prices will be very limited by using only overnight interest rates. After the 2008 crisis, central banks in both developing and advanced countries have started to use many heterodox policies. These policies can be interpreted as an effort to gain effective monetary policy capability. Besides interest rates, many other instruments were introduced after the recent financial crisis. At the same time, financial stability and similar concerns became essential parts of the new central banking. The capital controls that many authors (Crotty and Epstein 1999; Stiglitz, 2002; Ray 2015) have long argued have even begun to be applied in some countries (Benialper and Cömert, 2015b). However, it is tough for the central banks to have independent monetary policy capacity in today's conditions unless serious steps are taken to address fundamental structural/institutional changes eroding their capacity.

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