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Master in Economic History

# The Prospects and Limits of Financial Globalization

by

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**Abstract:** The paper investigates the overall theories and literature on financial globalization that has been widely discussed in the economics literature to depict a comprehensive picture of the development of current international monetary structure. Most of the quantitative research on financial integration and growth have treated financial instruments as if they were any traded commodity due to new classical understanding of economics; however, these studies missed the relevant theories on money and credit where these notions gain “a life of their own” especially when the embrace between monetary sovereigns and central banks is regarded while they are criticized due to endogeneity problems. After the Global Financial Crisis in 2008, the questions on current international monetary structure have started to find more voice on the functions of international organizations as a lender-of-last-resort and the lacking global safety nets to evade crisis contagion while emphasizing notions as monetary trilemma and financial trilemma. This is why we aimed to provide a large literature review and theoretical framework on the prospects and limits of financial globalization including relevant concepts such as international reserves, economic crises, original sin, chartalist theory of money, and monetary trilemma while assessing financial integration between 1980 and 2015. We conclude by emphasizing the importance of global safety nets and more participation in decision-making processes of monetary authorities if increasing financial integration is the main agenda due to the current weaknesses of International Monetary Structure.

*Key words. Financial integration, chartalism, international reserves, crises, original sin*

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# 1 Introduction:

The global economy has become much more integrated in the past thirty years thanks to the developments in information and communication technologies while having liberalized economies became the main agenda for policy makers. For many, this globalization process is accounted as the main indicator behind the experienced economic growth; as the volume of exchanged commodities and services increases between countries, they individually reap the benefits of international trade thanks to their comparative advantages. While the empirical studies mostly agree on the overall effects of trade liberalization the long-lasting effects of financial integration on economic growth have caused more discussion among economists who have succeeded to provide controversial quantitative studies. (one interesting keynote can be Bhagwati who supports trade liberalization but not financial globalization)

A developed financial system allows households and corporations to diverge their resources and reduce risks in their investments and consumption patterns. Schumpeter's early works emphasized the importance of financial intermediaries to realize innovations that brings "creative destruction" and creates added value for the whole economy (King & Levine, 1993). Most of the arguments for financial integration stem from Schumpeter's reasoning while the studies usually mimicked the research on trade globalization. The research from Kose et al. presents an overview of 26 empirical studies that searched the correlation between financial integration and economic growth under different dependent variables and financial openness measures (Kose et al., 2009). These studies treated money as it was only an instrument to facilitate trade under the understanding of mainstream new classical economics and did not regard its influence on the overall economic structure. However, Schumpeter's "History of Economic Analysis" gives two different theories on money where *the money enters the picture only in the modest role of a technical device* while the other one suggests *money acquires a life and an importance of its own* (Schumpeter, page 264-265). Schumpeter's second argument on money was mostly disregarded with the emergence of Quantity Theory of Money (QTM) while his work on "Treatise on Money" was not completed before his death (Bertocco, 2006). For Mitchell, this study was the missing link where Schumpeter discussed the influence of money and credit on economy by outlining four divisions that includes households, firms, banks, and central banks to show their hierarchical relationship in regards to credit and how money is released from its static nature (Mitchell, 2014). In a purely quantitative analysis where the financial integration is treated as the same as the trade globalization, the influence of money on overall economic structure that mentioned above is disregarded. However, accepting money as a simple recording device as the new classical economists do may not suffice to explain the power structure of different agents in the economy nor provide a sound theoretical framework that is necessary to capture the overall effects of financial globalization.

Financial integration means the collaboration of different agents in distinct regions through financial market instruments such as equities, bonds, and currency markets. Financial integration is not a new phenomenon in economic history; from the foundation of banks, merchants were using bills of exchange to give out loans or engage in currency exchanges which were predominantly based in gold or silver. In fact, Peter Kugler's study was focused on financial market integration in Medieval Europe and he showed that the merchants were intensely seeking arbitrage opportunities in different national markets since the diverging prices of silver and gold bullions were providing easy access to profit when the minting ratios were suitable (Kugler, 2011). The reason why financial market integration attracted massive attention from economists in the last few decades is due to rising share of financial market instruments' in the world economy with the shift from inward to outward looking policies and technological advancements. A brief look in FDI's development from 1970 to 2017 is useful to understand the growing impact of collaboration between different financial markets; the total inward FDI in the world economy was 10.172 billion USD and it increased to 1.461 trillion USD in 2000. In the wake of the financial crisis of 2007-2008, the global inward FDI reached to a peak of 3.111 trillion USD and it followed a downward trend later on by arriving at a level of 1.95 trillion USD in 2017 (World Bank, 2019). This massive rise can be explained with the triumph of liberal economic policies after the Cold War while the mobility of international capital was accelerated with the technological advancements in information and communication technologies.

While financial market integration has been the goal of the policy makers especially in the international organizations, there has been no strict consensus between economists and policy makers on how to create financially integrated markets or the impacts of this process. The studies on financial integration are compiled with contrasting hypotheses that analyzed financial integration from mostly new classical economic understanding where long-term development of international financial structure is overlooked even though the investigated time-period is long enough to provide panel regressions. The different scopes of these studies are further explained in the literature review below, but the "fox and hedgehogs" division of economists made by Rodrik may be a fulfilling recap of different interpretations on the role of financial integration in global economy. In *The Globalization Paradox*, Rodrik used this analogy from the ancient Greek poet Archilochus to explain how hedgehog economists are focused on one big idea of "opening the markets is always the right solution" while the foxes are more detail-oriented even they believe in the market power to enhance economic growth. Rodrik's work shows why it is important to have an omnidirectional point of view especially when the former structures on financial issues such as free-banking policies, bimetallic standards or gold standard are considered for long-term economic analyses (Rodrik, 2009).

In this paper, the main objective is to define how financial globalization had an impact in the world economy in the last 40 years by using relevant macroeconomic indicators and theories on money. Financial integration is a large topic where different monetary authorities work with each other under the existing international finance structure. Thus, our aim is to provide a comprehensive picture by emphasizing the theoretical framework on financial integration and taking relevant concepts such as original sin, economic agents' relationship in the credit hierarchy, economic stability and crises during financial globalization, and the role of global currency reserves in the last 40 years in shaping global economy. The changes in economic structure on global scale for the last four decades are also emphasized to understand the prospects and limits of financial integration on the global economy in the future.

## **1.2 Research Question, Aim, and Scope**

In this master thesis, the overall effects of financial integration are analyzed regarding the existing literature and theories on the topic. The indicators to measure financial integration are mostly based on international capital flows that move into bond and stock markets. Lane and Milesi-Ferretti's extensive database that constituted the basis of many influential quantitative studies is used to present the development of financial integration by dividing international capital flows into external assets and liabilities for individual countries (Lane & Miles-Ferretti, 2015). The main research questions are presented below:

1) Did financial integration impose economic growth and stability in the means of output and income increase for every country?

1.1) Can financial integration provide long-term economic growth in the future under the current international financial structure?

Providing solid answers to these questions are challenging. However, taking a more qualitative approach focused on the theories of money and hierarchical relationship between different agents in the economy may be more insightful to depict a realistic picture of the current international monetary structure with its shortcomings. To grasp the effects of financial integration on global economy, an extensive literature review is provided with focusing former quantitative studies on financial integration and economic growth, the role of foreign reserves and crises on financial integration, and on original sin.

Since we are looking for country experiences under financial integration, it is necessary to establish a more profound theoretical framework on international monetary structure. While original sin poses a challenge towards to current structure, other arguments suggested that institutional weaknesses such as existing financial development or credibility of countries as hampering conditions for the benefits of financial integration. The theories of money are mostly disregarded due to quantitative structure of the

analyses that treated money as if it was just a traded commodity. However, the lender of last resort function of central monetary authorities suggest that money creation or supply is not only an economic decision. This is the reason why we have pursuing to give more profound theoretical framework on the attributes of money and how significant it is to present the authority that created it by basing on with chartalist theory of money. The monetary trilemma and financial trilemma concepts are also emphasized since they slightly mention on the clash between distinct political agents that used a medium of exchange in international capital transfers which is created by another political authority. The concepts of original sin, monetary trilemma, and financial trilemma somewhat combines the missing links in the current international money structure; therefore, a comprehensive analysis on their theoretical framework is provided in the next sections. After going through the literature and theoretical framework, the financial instruments of country groups are constructed to provide an overview of financial integration between 1980 and 2015 with these groups' reserve stocks, output growth (GDP) and its volatilities. These country groups' GDP share to the total world GDP is provided to examine if there were any convergence in the means of output while an extensive crisis database is used to see if they have been diminished with financial globalization. Original sin (the debt in country groups' currency ratio to the total debt issued by these countries) are given if they

The thesis is constructed in seven distinct sections. Section 1 provides a short introduction on financial integration, its significance for the last forty years and the research questions of the thesis. Section 2 presents the literature on financial integration and economic growth by dividing the studies into three subsections: Quantitative studies on financial integration and growth crises, exchange regimes and, international reserves, and original sin. In these sections, the findings from the relevant literature are provided by showing the linkages between them to depict a comprehensive framework that is necessary due to the different channels of financial integration. In section 3, the relevant theories on money and monetary trilemma is summarized to understand the whole concept of money from a more historical view and how it is connected to sovereign authority. We show the connections between original sin, international reserves, and the political side of the financial integration under the combination of monetary trilemma, financial trilemma, and international monetary structure. The data used in the study is summarized in section 4 the financial structure of the analyzed countries that nearly constitute the total share of world's GDP and financial instruments to provide an overview of the transformations in distinct regions of the world according to relevant theories and IMF classification of countries. The external assets and liabilities shares of countries are given while their international reserve levels and growth volatilities are regarded. After that, the conclusions from this research is given in section 5. References are presented in section 6.

## 2 Literature Review

### 2.1 Quantitative Studies on Financial Integration and Growth

The increasing influence of financial sector on global economy has attracted many researchers' attention and the literature on financial integration has risen substantially. However, there is no consensus among researchers on how to measure financial integration or exact effects of financial integration on individual countries. Juraev's research on financial integration and economic growth provides 14 different measures in his study; of these fourteen measures twelve are de facto measures while other two are de jure measures. Three of these indicators searched for the absolute bilateral portfolio and FDI inflows and outflows as a ratio of GDP while the other de facto indicators are different combinations of multilateral financial assets and liabilities as a ratio of GDP (output). As de facto measures, Jureav used Kaopen (Chinn-Ito) index and Quinn Index to understand the level of financial integration and he founded out that foreign banking presence which is positively correlated with financial development had a negative effect on economic growth under high financial integration between 1970-2012. Juraev based his argument on the recent developments in emerging and developing countries since they have increased their outputs and not having the suggested benefits from organizational contracts (Juraev, 2013). The distinction between de facto and de jure measures of financial integration has been emphasized in the study by Kose et al. where they supported de facto measures compared to de jure ones by pointing out the countries that had strict capital controls on the surface but encountered high international capital mobility (Kose et al., 2009).

Bittencourt's study on Latin American countries for the same period as Juraev's research found contrasting results; he used the ratio of liquid liabilities (M2) to GDP as a measure of financial development and argued that these countries had benefited from increasing financial development besides the hyperinflationary episodes between 1980-1990 (Bittencourt, 2012). King and Levine's study that investigated the influence of financial development on economic growth using the same indicators as Bittencourt also concluded that economic growth is correlated with financial development levels (King & Levine, 1993). Osada and Saito took a different approach in their quantitative research where they looked for different effects of assets and liabilities on economic growth; they divided capital flows into four categories while including geography controls, trade openness, degree of domestic financial market development, and institutional quality in their regression analysis. Osada and Saito argued that FDI and equity liabilities enhance economic growth unlike debt liabilities that had negative effects on economic growth (Osada & Saito, 2010). Alfaro et al. also studied the effects of FDI flows on developing countries and came to the same result as Osada and Saito but they emphasized the development of domestic market conditions to achieve good influence on economic growth (Alfaro et al, 2000). On the other hand, Kose et al. argued that the benefits of FDI are mostly realized when they are applied in manufacturing sector. (Kose



et al., 2009). Eichengreen, Gullapalli, and Panizza searched for the influence of capital account liberalization on individual industry sectors using Standard Industrial Classification (ISIC) level at three to four digit levels. They confirmed the growth enhancing effects of FDI and other capital flows on finance-related industries, but also argued that these effects are eliminated when countries enter into financial recessions (Eichengreen et al., 2009).

A critical literature for quantitative studies on economic growth and financial integration has also developed with the increasing amount empirical research and their contrasting outcomes. One comprehensive study was conducted by Kose, Prasad, Rogoff, and Wei in which they pointed out the conflicting results from the quantitative studies that searched for the links between economic growth and financial integration. After giving a comprehensive summary of 26 empirical studies, they argued that *indirect* effects of financial integration are much more visible than direct growth enhancing effects and these prove to be competent for economic growth (Kose et al., 2009)<sup>1</sup>. Aizakpono has extended the financial integration literature summarized by Kose et al. to forty-two studies to show the lack of uniformity in their results. Aizakpono criticized the cross-sectional and panel data approaches used by these studies; for him the endogeneity problem of control variables and average coefficient estimates are serious threats towards econometric studies conducted in this field (Aizakpono, 2017). Eichengreen et al. pointed out the significance of same problem mentioned above for regression analyses. They claimed that national growth rates are simultaneously determined with the capital account liberalization, thus suffering from having a valid exclusion restriction instrument for capital account liberalization. This is one of the reasons why they have focused on firm-level development with financial integration in their study, claiming that single firms or sectors should not have an influential effect on individual country's level of financial development (Eichengreen et al., 2009).

## **2.2 Crises, Exchange Regimes and International Reserves**

The advocates of financial integration supported a point of view that claimed the benefits of releasing capital controls are outweighing the risks for economic growth in the long-term. However, there are some studies that suggested short-term increases in overall output and income are assertive when countries are opening their capital accounts. Henry argued against the economists who tried to solve the long-term influence puzzle of financial integration on economic growth and claimed that capital account liberalization has positive effects for countries especially when they are compared with the countries that have their capital accounts closed (Henry, 2006). Although there exists a universal agreement on how short-term capital inflows can enhance economic growth on the short run, this notion does not explain the possible

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<sup>1</sup> A study from the same authors found no empirical link between financial integration and economic growth for developing countries (Kose et al., 2004)

setbacks that can be experienced by the countries in the long-term. Therefore, it is vital to examine the literature on financial integration and economic crises in addition with monetary policies to construct a more comprehensive framework that includes other variables.

There are two different point of views on the relationship between financial integration and economic crises. One camp argues that financial integration helps to diversify risks compared to autarkic economic systems so opening capital controls are better for economic stability while the other one argues transmission of economic shocks are much more dominant in the presence of intense financial integration (Corbett & Findlay, 2009; Kose et al. 2009, Aizakpono, 2017; Devereux & Sutherland, 2007; Shmukler, 2004; Castiglionesi et al., 2017). A study by Reinhart and Rogoff has investigated the intensity of financial crises over 800 years by creating a new data set where they have structured indicators for defaults through inflation, hyperinflation and currency crashes. Using de facto measurements for financial integration, they found out that domestic banking crises are frequently following the periods with high capital mobility while inflation and external default are correlated since World War II (Reinhart & Rogoff, 2008). Joseph Stiglitz was one of the researchers who emphasized the role of intensive capital mobility for the causes of crisis contagion. On the example of Asian crisis, he argued that hasty reforms for capital market liberalization are the main driver of the crisis despite the economists who argued that necessary pre-conditions were vital for the gains of capital market liberalization. For Stiglitz, the Asian crisis has proved that the emphasis on pre-conditions of domestic economies before capital market liberalization is wrong since Asian countries that suffered from the crisis were in better shape than Latin American countries when their macroeconomic indicators are compared; inflation was low, saving rates were high and government deficits were relatively low in these Asian countries. Thus, Stiglitz suggested to reform international financial architecture due to its weaknesses on safety nets to overcome crises and lack of congruence on policy responses (Stiglitz, 1999). Stiglitz also criticized IMF policies severely due to the shift in their approaches to capital market liberalization; he argued that IMF has pursued rapid capital account liberalization programs in the late 1990s even there was no strict econometric evidence on the subject and he advised IMF to design counter-cyclical interventions to overcome fluctuations in the capital market that severely hurts developing countries, advising to *“rely on more evidence and less on ideology in developing its policy”* (Stiglitz, 2004).

Nakatani also founded out that the currency crises are more associated with lower foreign reserves and higher capital mobility in his study, especially on the debt side. However, he claimed that floating exchange regimes are more vulnerable to shocks that trigger currency crisis compared to pegged exchange regimes. Controls on capital account are suggested as mediating effects for productivity crises in a pegged exchange rate regime while monetary tightening policies increase the possibility of having currency crises (Nakatani, 2017). Nakatani’s results somehow reflect the framework on monetary trilemma; where

individual monetary authorities can only select two from free movement of capital, fixed exchange rates and discretionary monetary policies. However, Obstfeld and Taylor argued that floating exchange rates provide a shock-absorber against external shocks, for example external currency rate movements while empowering domestic monetary policies. For them, this is one of the reasons why IMF had advocated floating exchange rates especially after the Asian crisis in 1999 but they also state the monetary stabilization became much more difficult with the substantially increasing trade surpluses that push the interest rates down. (Obstfeld & Taylor, 2017). In another study by Obstfeld, Ostry, and Qureshi, it has been concluded that fixed exchange regimes suffer greatly from financial vulnerabilities since they have higher ratios of credit to GDP ratios. They have classified exchange regimes under three categories as fixed, intermediate, and floating regimes and suggested that floating rates give more discretionary monetary policies (Obstfeld et al., 2017).

One of the presumed consequences of floating exchange policies was the gradual decline of the global reserves since increasing role of foreign borrowing can replace their functionality, thus hindering the deflationary effects of accumulating reserves. But this was not the case for developing countries; in fact, Obstfeld and Taylor showed that these countries have increased their global reserves from 7% to 25% as a share of their GDP (Obstfeld & Taylor, 2017). The foreign reserves are seen mostly as a safety net for developing countries against possible economic crises. Alberola, Erce, and Serena have investigated the development of international reserves under the gross capital flow dynamics to understand if they are significantly influencing the overall economic performance during crises. Following Calvo's methodology, they found out that the benefits from holding international reserves are non-linear; while low levels of international reserves do not have any significant effect to hinder the capital outflows during economic stress, an adequate level of reserves prove to be useful especially to mitigate the squeeze in net capital flows. However, having considerably high level of reserves are shown to be less efficient due to high costs of holding international currencies on both domestic and international economy (Alberola et al., 2015, Calvo; ). Reinhart et al. also raised questions about the optimal level of holding international reserves. They stated that accumulating reserves beyond the threshold may result in crowding out investment out of countries, *representing a leakage of domestic saving in funding investment*. (Reinhart et al., 2016). Alberola and Serena have presented the same conclusions as Reinhart et al. by pointing out the vulnerabilities in sterilization processes when holding relatively high international reserves in a less financially developed country (Alberola & Serena, 2007).

## 2.3 On Original Sin

Holding foreign reserves may prove to be costly to both domestic and international economy as mentioned above. The reserve currencies can lose their value in the face of a speculative attack as happened in 1992 to Central Bank of England, or there may be more valuable use of capital instead of keeping them as reserves. Even so, the substantial rise in global reserves especially in developing countries is evident in the last two decades. Eichengreen, Hausmann, and Panizza explained this phenomenon by pointing out the structural deficiencies in the international finance system in which the developing countries are not able to borrow abroad in their domestic currencies. They named this concept as *original sin* by separating it from *currency mismatches* and *debt intolerance* to show that it is not dependent on domestic economic conditions. Original sin is relevant to global financial integration since the countries beside the holders of key currencies are not able to borrow abroad in the wake of a financial crises and become more volatile and crisis prone compared to countries that are financial centers (Eichengreen, et al., 2003; Eichengreen et al., 2004). Bordo's study provides a historical background on original sin between 1870 and 1913, a period in which international capital mobility was relatively high. Bordo found out that the two eras of capital account liberalization showed similarities on the reasons of sudden stops and crises. For him, external shocks are not the only reasons why emerging economies are experiencing economic setbacks; the lack of production diversity and the degree of original sin (dollar liabilization or hard currency debts) were two significant factors behind these economic crises. Bordo advocated increasing country and currency trust in international capital markets to avoid these crises or hasten the recovery period. While adherence to gold standard was the indicator for currency trust in the studied period, Bordo suggested independent central banks and low inflation as the principles that showed stable monetary policies and fiscal balance, thus strengthening the currency trusts (Bordo, 2006).

For Eichengreen, Hausmann, and Panizza, strengthening currency trust is not an easy solution to avoid original sin. They underlined the distinction between large countries and small countries in currency diversification in a world with international transaction costs; while large countries have less to earn from adding small countries' currencies in their portfolio, small countries will be more eager to have large countries' currencies since they offer larger benefits from diversification. Although countries like United Kingdom and Switzerland are comparatively smaller, Eichengreen et al. argued that historical path dependence proves to be more significant from only emphasizing on economic size, once a currency is trusted as a key currency and used in international transactions or portfolios, the surge of investors make it more acceptable, hence gradually strengthening the currency trust (Eichengreen et al, 2003). Since there was no apparent way for developing countries to increase their currency trust in the existing framework of international finance, Eichengreen and Hausmann suggested original sin as the main factor to hinder the good effects of financial integration especially in the wake of economic setbacks. In the time of crises, the

central banks' ability to act as a lender of last resort diminishes in the existence of dollar liabilities and not being able to borrow in their own currency abroad. For them, these unhedged dollar liabilities have been the main reason behind the Asian, Russian and Latin American crises while increasing international capital mobility did not help them to recover from the crises or bring economic stability (Eichengreen & Hausmann, 2003).

The concept of original sin has attracted some researchers in the last few years especially after the global recession of 2007-2008. Du and Schreger have developed a new measure for measuring sovereign credit risk in emerging markets to see how borrowing in their own currencies have changed throughout 2005-2015. They found a substantial increase in share of local currency debt in the total sovereign debt for fourteen emerging economies between 2005 and 2015, suggesting that the effects of original sin have been diminished. Their measure of sovereign credit risk is calculated by the synthetic dollar spread on a swapped local currency bond over the US Treasury yield; however, this measure is only accountable when the emerging economies do not face an economic default or the cross-currency swaps have negligible counterparty risks. Their study claimed that local currency and foreign currency bonds have similar risks on average default losses under dollar measures while the former has lower credit spread, and concluded that emerging countries have increased the share of debt denominated in local currency in their total debt, suggesting a slight improvement in *original sin* (Du & Schreger, 2016).

The Global Financial Crisis have altered the currency composition of international reserves in developing countries. In their study, Aizenman, Cheung, and Qian have investigated the factors determining currency composition of 58 countries by using quantitative measures including variables such as gold share, inflation difference, stock market size, size of sovereign wealth, and GDP ratio to the total world GDP of individual countries. They found out while the international reserves in “big four currencies” (Dollar, Euro, Yen, and Pound) have gradually decreased their share in total international reserves from 98% in 1999 to 92% in 2017, macroeconomic indicators of individual countries are significant to determine their currency composition in international reserves. If the main trading partners of individual countries are the countries that are included in the big four currencies, then the international reserve composition is more likely to favor these currencies as it was before the Global Financial Crisis in 2008. Having positive current account balances and large share of commodity exports also diverge countries away from the big four international reserves into other global safe assets such as sovereign wealth funds and swap exchanges. These factors are mostly attributed to developing countries and some developing countries and for Aizenman et al, they become another substitute for international reserves especially after the crisis (Aizenman et al., 2019). The increasing importance of international swap lines constitute basis of the study by Castiglionesi, Feriozzi, and Lorenzoni as well. As the authors present, the liquidity premium which is measured by the spread

between LIBOR and overnight indexed swap rate has become increasingly volatile especially after the crisis due to the illiquidity problem and rising share of swap lines acting as an international liquidity tool. Comparison between countries also showed the comparatively high level of liquid assets that developing countries keep in their deposits (45%) when the levels in developed countries are only 19%. The authors claimed that illiquidity of banks may increase with more financial integration while suggesting holding foreign reserves as a better way to cope with illiquidity, adding more emphasis on the difference between global currency issuers and developing economies (Castiglionesi et al., 2017).

IMF policy paper on special drawing rights (SDR) provides an overall background on the development of international reserves and suggests SDR as a plausible alternative to the national currencies acting as foreign reserves. The paper draws importance on the structural weaknesses of international monetary system in the wake of large spillovers and volatility in capital flows; these notions are found accountable for limiting the liquidity provision by Global Financial Safety Net and the increase in reserve accumulation that invokes distorted interest rates, inefficient consumption and investment, and larger external balances (IMF, 2018). It is important to note here that their conclusions strongly resemble what Joseph Stiglitz have emphasized on his study as mentioned above in 1999 (Stiglitz, 1999). The IMF report explains reserve accumulation as a precautionary condition against external imbalances since the economic cycles in issuers of international reserve currencies have significant effects on domestic financial conditions of developing countries. While the countries that have a large share in global economy can choose to anchor their currencies, the other countries that pursue flexible exchange rates are reported to face a trade-off between currency and financial stability, thus increasing the need for lending of last resort actions in foreign currency or being engaged in currency swap agreements (IMF, 2018). The IMF report on SDR shows clearly how the interpretation of international monetary structure has changed for IMF advisors in the last few decades; the official IMF policy was to develop financially integrated markets in the beginning of the 90s but now, it accepts the structural weaknesses of the international monetary system and suggests alternative supranational currencies to increase its stability by evading Triffin dilemma where the currency issuer countries must decide between short-term domestic policies and longer-term stability of the international financial system (IMF, 2018; Smaghi, 2011). The discussion on the possibility of supranational currencies have become more emphasized in the literature, and more is explained on this subject in the theoretical framework section to understand its development in economic history.

## 2.4 Conclusions from Literature

A vast number of econometric studies that focused on the relationship between economic growth and financial integration that used diverging measurements of financial integration had provided contrasting results. Crises are suggested to wipe down the benefits of the financial integration due to increasing volatility and international capital transfers, but the effects of crisis are mixed when the existing exchange regimes and the levels of international reserves of individual countries are considered. While international organizations advocated hasty reforms for opening the borders for capital movement in the late 20<sup>th</sup> century, the regional crises and Global Financial Crisis in 2008 have brought questions about the stability of international monetary system by pointing out the structural weaknesses. IMF report on SDR acknowledged these weaknesses and suggested SDR as a stabilizing supranational global reserve unlike the dominant national currencies which are widely used as key international reserves. Eichengreen et al. have claimed original sin is a structural weakness of the international monetary system for the countries besides the key currency issuers due to the lack of safety nets during economic setbacks and also argued for the necessity of creating a unit of account in which claims on a large group of emerging countries can be denominated. Although the original sin of individual developing countries is suggested to experience a decreasing trend for the last decade by showing the increasing share of domestic debts in the total debts, the liabilities issued in these key currencies did not show a significant decrease. The Global Financial Crisis steered both developed and developing countries to engage in swap exchange lines to have access to key currencies and the number of bilateral swap agreements increased drastically in the last decade. This might be one of the reasons why *original sin* of individual countries have experienced a decreasing trend; however, engaging in swap lines does not reform the international monetary structure, nor enhance financial globalization process. In the next section, the influence of key currencies is further explained with an emphasis on sovereign/central bank relationship, theories on money, monetary trilemma, and financial trilemma while the theoretical background for supranational currencies are also emphasized to present a comprehensive framework.

## 3 Theoretical Framework

### 3.1 On Money, Banks, and Monetary Authorities

The global economy has experienced a surge of fiat money after Richard Nixon has revoked the US dollar's convertibility in 1971. This emphasized the power and role of the state in money creation process since fiat money was not backed by any commodity or had an intrinsic value, but only trust to the state authority enabled its usage as a means of exchange. As chartalists argued, the state was placed at the center of decision making to declare what it is going to accept as a payment of the debt of its citizens. This is one of the reasons why Schumpeter has described a system of accounts of different economic agents in his unfinished work; he separated between households, firms, banks, and central bank while placing central bank at the top since it has means to create new purchasing power by issuing new credit (Mitchell, 2014). Stephanie Bell has extended this analysis basing on the former literature and transformed the credit hierarchy to households, firms, banks, and state to emphasize the power of the state in chartalist monetary theory. For Bell, the money created in each tier do not have the same degree of acceptability, only the state can issue promises for the other agents in economy and have the means to enforce them, thus making it the sole authority to create a social unit of account by accepting the debts of other economic agents placed in the pyramid (Bell, 2001).

The monopoly of state on creating money is not a notion inherent to capitalism nor a new phenomenon in economic history. Randall Wray's study on modern money provides a comprehensive framework on how states have been defining or revising what thing corresponds for money as a medium of exchange for four thousand years, thus emphasizing the necessity of state acceptance in the process. When the state enforces tax liabilities in the medium of exchanges which have been pre-determined by the state, other agents are entitled to pay them in this medium of exchange if they do not have anything else to offer to the state. (Wray, 1998). The monopoly of state on the creation of money has not gone unchallenged in the literature; Friedrich Hayek argued that the state monopoly on providing money has failed and would continue to fail in the presence of trade cycles that proved to be destabilizing for government monopolized money. For Hayek, the money creation is not an exception to the general rule of "self-interest" being a better motive compared to "benevolence" in the economic understanding and this is why he advised that the money suppliers should be private issuers rather than government monopoly (Hayek, 1976). Friedman and Schwartz took a more historical approach on the state's monopoly on money supplying. They argued that no medium of exchange in history has developed without being backed up by a commodity and state conformation due to the fears of fraud in enforcing contracts between economic agents. Although Friedman and Schwartz accepted the possibility of an alternative to dollar as a private real standard, they did not assume it is realistic under the contemporary international structure and defended fiduciary money since it



has not taken a strict role in provoking a crisis. Thus, they pointed out the necessary role of central banks acting as a supreme regulatory force on monetary policies to stabilize contracts and economic framework (Friedman & Schwartz, 1987). Existence of central banks are also supported by Goodhart who provided an extensive background of their evolution acting as the supreme regulator in a system where regular banks are providing both transaction services and portfolio management (Goodhart, 1985). However, in a recent study Goodhart pointed out the necessary reforms on financial structure in the aftermath of the crisis 2007-2010 since central banks and efficient markets could not guarantee the financial stability (Goodhart, 2011). Goodhart's remarks becomes important considering effect of the repeal of Glass-Steagall Act in 1999 which formerly divided commercial and investment banking activities and became one of the initiating factors behind the 2008 crisis.

One of the main functions of the central bank is to act as a lender of last resort to the state when it is experiencing economic distress by providing loans to the other financial institutions. Grauwe argued that central banks are evolved to be the stabilizing factor against the boom and bust cycles which are inherent to capitalism, but he also pointed out the deadly embrace between sovereigns and central banks under a monetary union. By giving the example of Eurozone, he attracted attention to the clash between national macroeconomic policies and centralized money and monetary policies as it mentioned in the literature above. For Grauwe, the imbalanced maturity structure of banks and governments' balance sheet (banks' liabilities are liquid while their assets are illiquid; governments' liabilities are liquid while assets consist mainly tax claims) threatened the financial stability since these two factors are working against each other especially when the lender of the last resort and automatic budget stabilizers are functional at the national level. Grauwe's study gives a detailed analysis on how these relationships were disregarded when European Central Bank only acted to save the banks from illiquidity but not prioritized the individual sovereigns and concluded that the monetary union would not achieve macroeconomic stability if it does not evolve into a fiscal union or creates additional debt pooling mechanisms that are adjusted to relative interest rates for individual countries (Grauwe, 2013). Eurozone stands out in the current international monetary structure with its individual members who have domestic goals while being ruled by a central monetary authority; however, it somewhat resembles the current international system where developing countries are constantly revising their domestic monetary policies according to the interest rates that are set by the central banks of the international reserve currencies, especially against the US dollar. This is why we offer a revision to Stephanie Bell's hierarchy credit where the international key currencies are placed at the top of the level while other countries governments and central banks are placed in the second tier while the banks, firms, and households are placed respectively in the third, fourth, and fifth tiers. The theory of chartalist money supports the government role on the creation of money and separating it from a pure economic theory in the current international monetary structure where key currencies are not backed by any commodity besides

trust to the issuers of these currencies. Although monetarists believed that the creation of money would neutralize itself by normalizing short-term fluctuations, Bell argued their interpretations showed similarities to the metallist argument since they treat money “as irrelevant to real analysis”. This is the reason why the studies on the relationship between financial integration and economic growth mimicked trade globalization methods under the mainstream economic theory, disregarding the role of fiscal policy or the creation of money in real analysis. Bell also suggested the extension of lender of last resort role of state when the public’s necessity to pay taxes is considered; for her, the credit hierarchy forces Treasury no other option than adopting an interest rate in the existence of taxing and spending operations (Bell, 2001).

The chartalist theory shows state’s dominance on determining what money is and how to use it, and it is hugely relevant to today’s world where fiduciary money is dominant. While most of the economists agree on the necessity of the central bank, the developments in blockchain technology may provide an alternative to individual states’ or central banks’ hegemony on money creation as Hayek suggested. Although some have used cryptocurrencies as an alternative to the hyper inflated currencies as happened in Venezuela, the volatility in their prices are simply hindering their use as a medium of exchange and they are treated more like a good that has store value. Countries still use foreign international reserves as mentioned in the literature above since the trust against key currencies (and the trust to the governments who are issuing these currencies) are high and this notion strengthens the necessity to modify the credit hierarchy when the international dynamics are considered. In the next section, international monetary and financial structure are more thoroughly examined under the theories of monetary and financial trilemma.

### **3.2 Monetary Trilemma and Financial Trilemma**

The impossible trinity has been a well-recognized phenomenon in the economic literature. Following Mundell-Fleming model, most of the economists agree that the policy options of the central banks are obliged to choose two from a fixed exchange rate, free movement of capital, and an independent monetary policy. However, the monetary trilemma is not remained unchallenged. In his extensive literature review, Wei suggested trilemma is more of a 2.5 lemma due to different actions taken by peripheral countries when the center country changes its interest rate; if the interest rate rises in center economies, peripheral countries do not rise their interest rates accordingly but they mimic the central economy when they decrease their interest rates (Wei, 2018). A quantitative study by Helene Rey has provided contrasting results compared to Wei. After conducting VAR analysis on equity, debt, FDI, and credit flows on individual countries, Rey offered the existence of a dilemma rather than a trilemma since the global financial cycle constrained the domestic monetary policies regardless of their exchange regimes. Her results somewhat coincide with what has been emphasized throughout the study, the influence of important economies (or

central banks that issue key currencies) are unavoidable when capital controls of other economies are loosened (Rey, 2015). Obstfeld, Ostry, and Qureshi have investigated 40 emerging economies between 1986-2011 to check the different exchange regimes' influence on the recovery from crisis by creating aggregate categories of fixed, intermediate, and floating exchange rates. They have concluded that monetary trilemma has been relevant for the economic policies of these emerging countries from their empirical analysis by showing the differential shocks experienced in fixed exchange rates. Even so, Obstfeld et al. did not advocate for a free floating exchange rate but a more intermediate one since it gave more freedom in domestic policies (Obstfeld, Ostry, and Qureshi, 2017). The changing policies of emerging countries implies the validity of their argument. Using trilemma indexes, Aizenman and Ito have shown the emerging market economies are converging in a middle ground where intermediate exchange rates are being used with modest financial integration and semi-autonomous monetary policies. In their study, they have extended the monetary trilemma to a "quadrilemma" in which they emphasized the importance of the international foreign reserve holdings to realize this policy shift; for them, holding adequate levels of foreign reserves enabled emerging economies to have less volatile output levels while smoothing the trade-off effects from monetary trilemma (Aizenman & Ito, 2011). These notions back the arguments on the importance of international reserves to have macroeconomic stability as suggested in the literature and theories above while showing that the monetary trilemma is still valid in the international monetary structure.

Dani Rodrik has suggested a political trilemma by slightly touching upon the sovereign-money relations and the difficulties that may arise when the goal is to achieve complete international integration. In this political trilemma of world economy, global arena can only have two from nation states, integrated national economies, and mass politics. Rodrik has used nation states to indicate territorial entities with independent powers on their subjects in the means of jurisdiction and law administration while mass politics meant significantly high political mobilization and unrestricted participation of all members. In this trilemma, integrated national economies can only be realized by initiating global federalism by diminishing the role of nation states or having golden straitjacket without having mass politics. Rodrik defined Bretton Woods era as a combination of nation states and mass politics that did not achieve integrated national economies, and suggested global federalism as a viable option to realize complete financial integration through global fiscal authorities and global lender of last resort apparatus. However, Rodrik also acknowledged the possibility of a backlash in global integration due to financial crisis where countries turn into more protectionist measures (Rodrik, 2000). Although Rodrik's study has been conducted 19 years ago, it proves to be surprisingly insightful to interpret the international economic structure from a political view considering the international policies after the Global Financial Crisis in 2008. This political economy trilemma has been further extended by Dirk Schoenmaker to a financial trilemma. In his model which is based on Freixas' study, Schoenmaker emphasized the decision of refunding banks to deal with a crisis and

showed that this action is only viable when the total benefits of the intervention exceed the costs. However, when the level of financial integration increases, national financial policies would not provide financial stability since refunding equation will reach to an equilibrium that would not provide a solution for refunding banks. Thus, Schoenmaker argued that only two of the financial stability, financial integration, and national financial policies are viable for the individual financial structure of a country (Schoenmaker, 2011). The financial trilemma harshly contrasts the mainstream economic theory that advocated financial integration at all costs especially in the beginning of 1980s and 1990s to enhance economic growth and stability, but it provides a viable comprehensive framework when the tradeoffs between monetary and political trilemma are considered under the chartalist theory of money. In a recent study, Obstfeld and Taylor studied the long-term development of international financial structure and they suggested financial trilemma is more valid than monetary trilemma by showing the failure of floating exchange rates and capital mobility policies in achieving domestic objectives when they face global cycles or financial shocks, especially when they emphasized achieving financial stability (Obstfeld & Taylor, 2017). These studies back the arguments on how monetary trilemma have failed to consider financial stability for the long run by simply showing the contrasts between domestic and international goals, thus providing us the necessary framework to study the prospects and limits of the financial globalization.

## 4 Data

There does not exist a comprehensive database that includes macroeconomic indicators in addition with distinct types of international capital flows and currency composition of reserves. This paper uses World Bank database for macroeconomic indicators such as GDP (current US Dollars), GDP per capita (current US Dollars), inflation and their annual growth rates. The statistics on international capital flows are extracted from the Lane and Miles-Ferretti database which was updated in 2017 and extended the timeline of different types of flows until 2015. These international capital flows are calculated according to IMF manual of international investment, so it provides the most common categorization of international flows under assets (portfolio equity assets, FDI assets, debt assets, financial derivative assets, and foreign reserves minus gold) and liabilities (portfolio equity liabilities, FDI liabilities, debt liabilities and financial derivative liabilities) (Lane & Miles-Ferretti, 2017). International reserve composition of the world is constructed with the help of IMF's International Finance Statistics database while the data prior 1995 has been implemented from the IMF Annual Report in 1995 (IMF, 1995). European Currency Unit (ECU) had a significant share in international reserves prior Euro's establishment in 1999. However, in this paper ECU is not treated as a separate reserve currency since IMF methodology mostly added its SDR value issued in dollars into the dollar as a reserve currency while ECU that is issued against gold is excluded.

The banking crises, currency crises, and inflation crises of countries are provided from Harvard Business School Behavioral Finance and Financial Stability database which was constructed by Reinhart, Rogoff, Trebesch, and Reinhart (Reinhart et al., 2016). Information on swap arrangements between individual countries and currency unions are extracted from interactive Council on Foreign Relations database. The database used five categories to distinguish swap agreements from 2007 to 2015; these are swaps between emerging markets to emerging markets, swaps between developed markets to emerging markets, developed economy swaps, swap agreements of China, and swaps between Chiang Mai Initiative (CFR, 2019). The original sin indicator is calculated from the data by Bank of International Settlements in which International Debt Securities are divided into local currencies, US dollars, and Euro for each quarter. For 2015, the fourth quarter of outstanding debt amounts are calculated for each individual country.

The total reserves (including gold reserves) are taken from World Bank database for each year indicated in the graphs.

## 5 Methodology

The thesis follows an explorative approach on giving a comprehensive framework of financial integration's influence on country experiences. The literature supports the de-facto measures of financial integration over de-jure measures, so Lane & Milesi-Ferretti database is used to have more precise picture of international capital movements of these financial instruments. Based on the theoretical framework and literature reviews, the countries that have higher currency trust in the international markets are grouped as *key currency countries* because their currencies have been used as international reserves with a significant share since the beginning of 1980s. For Eurozone countries, the currencies that had at least 20% share in the European Currency Unit currency basket have been added into key currency group while checking if these currencies had at least 2% share of total international reserves during the studied time interval. Rest of the countries from Eurozone and other high-income countries have been added to the second group as *advanced countries*. Using IMF classification of country groups based on their income and geographical locations, the other country groups are respectively stated under Latin American countries, Emerging Eastern Europe plus Commonwealth of Independent States, Emerging Middle-Income Asian countries and Sub-Saharan countries. Chinese renminbi has emerged as an international reserve currency only in 2016, so China is placed under the emerging Asian economies. While pound, US dollar, Yen, and Swiss Franc have been recognized as key currencies in both studies of Eichengreen et al. and Lane & Milesi-Ferretti, Germany and France are also included in the key currencies due to their historical status of holding international reserves and their central banks' significant shares in European central bank (their sum amounts to 33% of total capital in ECB that has 28 individual country shares) (Eichengreen et al, 2001; Lane & Miles-Feretti, 2015). Other Eurozone countries are included in the advanced economies mainly due to failure of OMT (Outright Monetary Transactions) of European Central Bank in the wake of the Euro crisis and the national regulatory system of individual central banks of European states that hindered the lender of last resort functions of ECB due to moral hazard risks and suffered from the single interest rate for both booming and declining countries (Grauwe, 2013). The detailed classification of countries under these six categories are included the Analysis section with respective country names.

Since the quantitative studies on financial integration and economic growth have provided contrasting results, this study used descriptive statistics to evade the endogeneity issues that were severely criticized. From the literature and theoretical framework, the updated version of credit hierarchy in international monetary structure is pictured first. Then, the development of international reserve currencies from 1980 to 2015 are presented to understand which currencies had key roles in international monetary structure by checking their respectable shares in the international reserves. The countries are categorized

with the help from literature while IMF classification of countries depending on their geographical locations and economic development are also used. The data coverage of the analysis is provided by showing the analyzed countries share of total world GDP, assets, and liabilities for the years 1980, 1987, 1993, 1999, 2008, and 2015. Then, the de facto measures of financial integration for these separate six categories are provided with their respectable shares of total international capital flows. For the period that is investigated, three separate benchmarks have been placed to point out the important transformations in international finance structure. The first benchmark is the dissolution of Soviet Union that promoted an unfettered globalization movement in both trade and finance; the second benchmark is the introduction of Euro in 1999 due to its appearance as the second-most used reserve currency and the third benchmark is the Global Financial Recession in 2008; thus, the time period between 1980 and 2015 have been divided into four separate parts to understand the changes in financial integration, GDP levels, and the volatilities in output growth of these separate country groups. After that, the average reserve stocks of these separate groups are shown in current US dollars to see if they have experienced remarkable shifts in these periods or they have large diversities according to their country groups. Literature suggests sufficient reserve stocks can absorb external shocks and cushion the effects of economic downturns, so it is vital to compare this data with the experienced hyperinflations, banking crisis, currency crises, and debt defaults.

To emphasize the notion of external debt, the original sin measurement from Eichengreen's study is used and averaged for the separate groups of countries. The external debt liabilities are suggested to be shrinking in the literature due to the increasing role of bilateral swap arrangements between countries. The data on swap arrangements fits the categorization of countries suggested above; thus, they are presented with their size and recipients to understand if the reserve stocks started to lose their importance while the countries relied more on bilateral agreements rather than current international monetary structure.

## 6 Analysis

The literature has provided contrasting results between the relationship of financial integration and economic growth. The quantitative studies that used advanced econometric instruments have failed to provide a uniform framework while the endogeneity problem between the variables has attracted criticisms from various studies. The advantageous status of the key currencies has been emphasized in the literature since they are able to borrow in their own currencies in the international arena while determining the supply of their currency especially when considering the lender of last resort function of central banks. Thus, we have suggested a modification in the credit hierarchy in which key currencies that are used as international reserves hold the top tier while the other tiers are placed with central banks/governments, banks, firms, and households respectively.

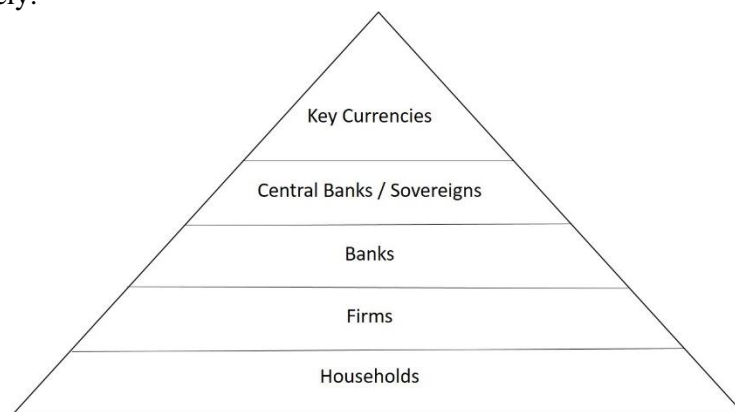


Figure 1: Credit Hierarchy in International Monetary Structure (Own Source)

From 1973 onwards, the dominance of fiducious money has strengthened the chartalist theory on money where state is the sole authority to determine what accounts for money. However, increasing importance of international financial market somewhat constrained sovereigns to pursue their own domestic monetary policies. These problems have found some place in the monetary trilemma literature where individual countries are only able to choose two from fixed exchange rates, independent monetary policy, and free movement of capital. This trilemma has been extended by Rodrik to a political trilemma where sovereign-money relations are emphasized under national economies, integrated national economies, and mass politics (Rodrik, 2000). Despite the widespread belief of financial integration's benefits, Schoenmaker has suggested the notion of financial trilemma where only two from financial integration, financial stability, and domestic financial policies are viable by improving the political trilemma suggested beforehand. Since these theories coincide with the chartalist theory of money, the analysis of financial integration's influence on economic growth is conducted under different country groups according to their position in credit hierarchy and the level of their economic development. To understand which currencies were regarded as international reserves, the composition of international reserves globally has been presented below from 1980 to 2018.



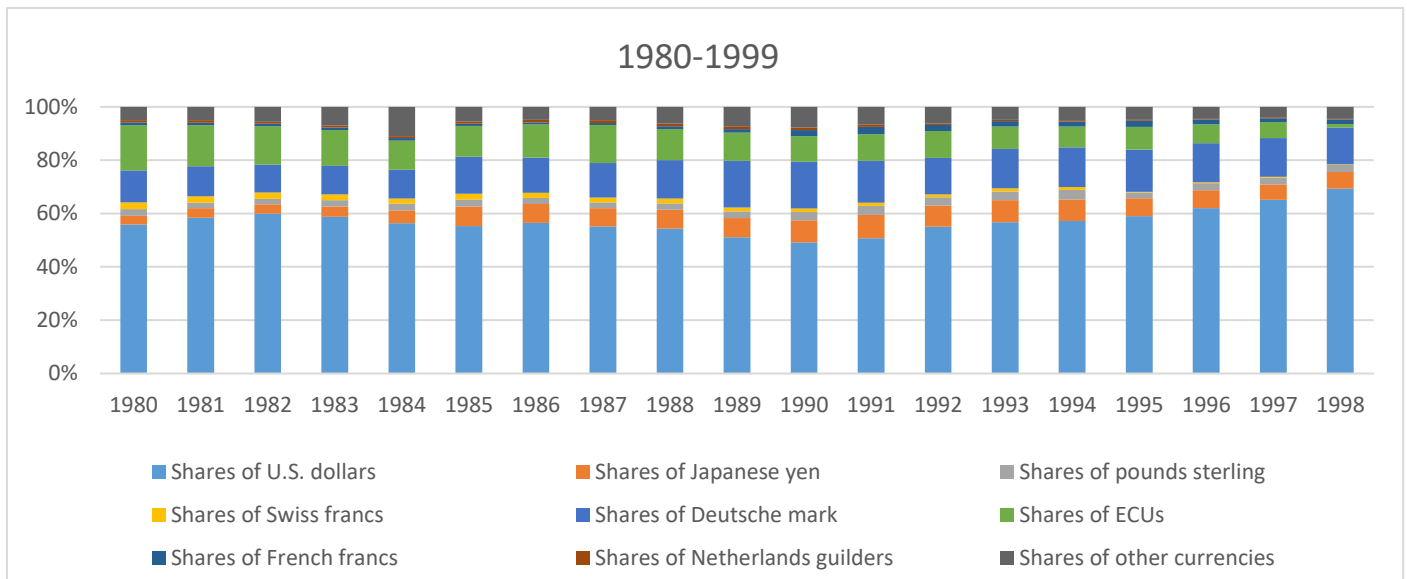


Figure 2: International Reserve Composition, 1980-1999 (IMF 2019)

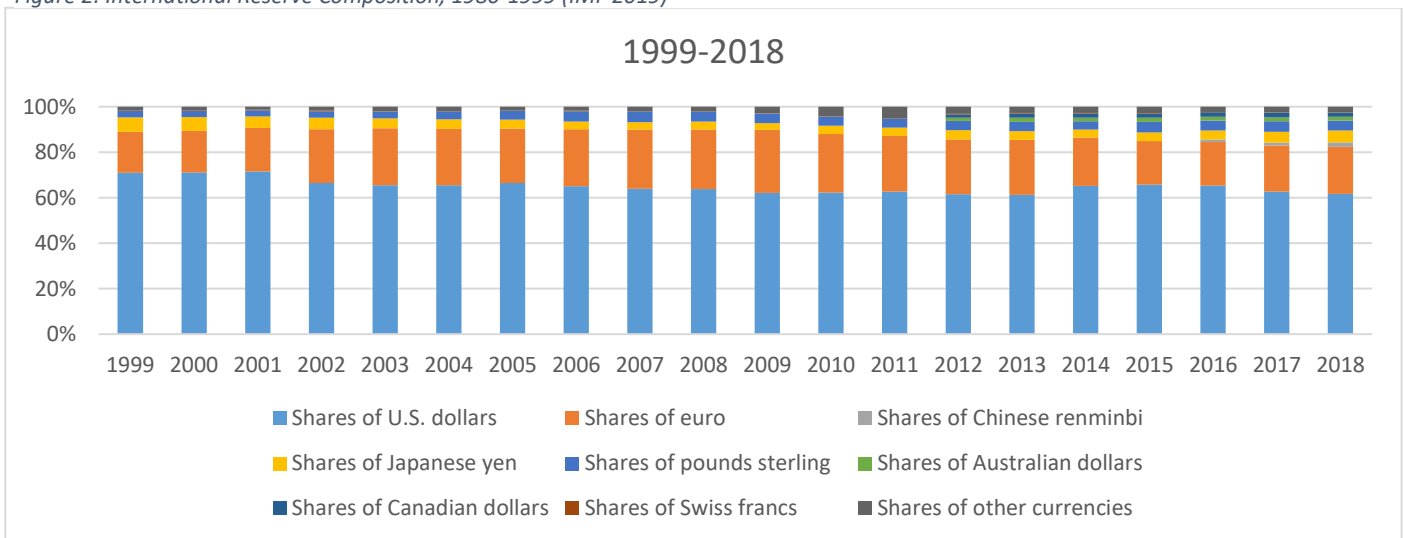


Figure 3: International Reserve Composition, 1999-2015 (IMF 2019)

The two graphs above mark the dominance of US dollar as an international reserve currency throughout 38 years. The graph is non-striking in this manner considering US dollar’s importance in the Bretton Woods system where it was declared as the only anchor to the gold reserves. Although Yen, Pound, and Swiss Franc have never had the huge shares that US dollar did in the international reserves, they preserved their importance in international market by having significant shares ranging from 3% to 6%, marking their position as international reserves. Both European Currency Unit and its successor Euro had higher shares in international shares ranging from 15% to 25% while Deutsche Mark was also contemplating European Currency Unit as an international reserve until the emergence of Euro. In addition to these currencies’ countries, France is also included in the key currency country group in the analysis due to the

its stable shares throughout 1980 and 1999 and its second highest capital key ratio in European Central Bank. Recently emerging currencies that are being used as international reserves such as Australian Dollar, Canada dollar, and Chinese renminbi are not included into the key currency group for the sake of the analysis that aims to find the variation between long-term economic growth under financial integration.

Lane and Milesi-Ferretti’s database provides us an overview of international capital movements for 210 countries; however, not all countries have complete data for the investigated time period. In this analysis, 85 countries are chosen depending on their financial development level, geographical location, and their share of total world GDP. These 85 countries account to at least 90% of world’s total GDP for 1980, 1987, 1993, 1999, 2008, and 2015 while their share of assets and liabilities to the total assets and liabilities in Lane and Milesi-Ferretti database ranges from 78% to 87%. The financial off-shore centers that have significantly low shares of GDP compared to their total assets and liabilities are excluded from the analysis to not distort the overall shares of GDP and liabilities and assets; for example, Cayman Islands had 3.806.500 million dollars’ worth of assets in 2015 while its GDP was only 3.467 million dollars. The detailed statistics showing the data coverage in the analysis is presented in the table below.

<b>Years</b>	<b>GDP share</b>	<b>Asset Share</b>	<b>Liability Share</b>
1980	91,48	82,74	87,13
1987	93,31	82,34	87,03
1993	93,85	81,62	83,44
1999	93,83	85,16	87,36
2008	92,49	83,22	85,47
2015	91,88	77,94	80,86

*Table 1: Data Coverage in Analysis (Own Source)*

After determining the key currency groups, IMF’s classification of country groups depending on their income and geographical positions are used to classify these countries in their respectable country groups. Advanced country group is constructed with the countries according to the IMF classification while key currency countries are excluded from this group. The countries are listed below under the formulated categories.

- 1) Key Currencies (KC): USA, UK, Germany, France, Switzerland, Japan
- 2) Advanced Economies (AE): Austria, Australia, Belgium, Canada, Czech Republic, Denmark, Estonia, Finland, Greece, Hong Kong, Iceland, Ireland, Israel, Italy, Korea, Latvia, Lithuania, Luxembourg, Malta, Netherlands, New Zealand, Norway, Portugal, Singapore, Slovak Republic, Slovenia, Spain, Sweden
- 3) Latin American Countries (LAC): Argentina, Brazil, Chile, Colombia, Dominican Republic, Ecuador, Mexico, Peru, Uruguay, Venezuela
- 4) Emerging East European Countries and Commonwealth of Independent States (EE & CIS): Azerbaijan, Belarus, Croatia, Hungary, Kazakhstan, Poland, Romania, Russia, Turkey, Ukraine
- 5) Emerging Asia (EA): China, India, Indonesia, Malaysia, Philippines, Sri Lanka, Thailand
- 6) Sub-Saharan African Countries (Sub-Sahara): Benin, Burkina Faso, Cameroon, Chad, Congo (Dem. Republic), Congo (Republic), Cote d'Ivoire, Ethiopia, Ghana, Guinea, Kenya, Madagascar, Mali, Mozambique, Niger, Nigeria, Rwanda, Senegal, Tanzania, Uganda, Zambia, Zimbabwe

In this paper, we have used IMF Classification of cross-border financial flows and positions which is also suitable for Lane & Miles-Ferretti database. The international capital flows are divided into assets and liabilities that includes direct investments, portfolio investments, financial derivatives (other than reserves), other investments, and reserve assets. The country groups' ratio of assets and liabilities to their respectable GDP for 1980, 1987, 1993, 1999, 2008, and 2015 are presented below to understand the impact of financial globalization and their cross-border capital positions of these specific country groups.

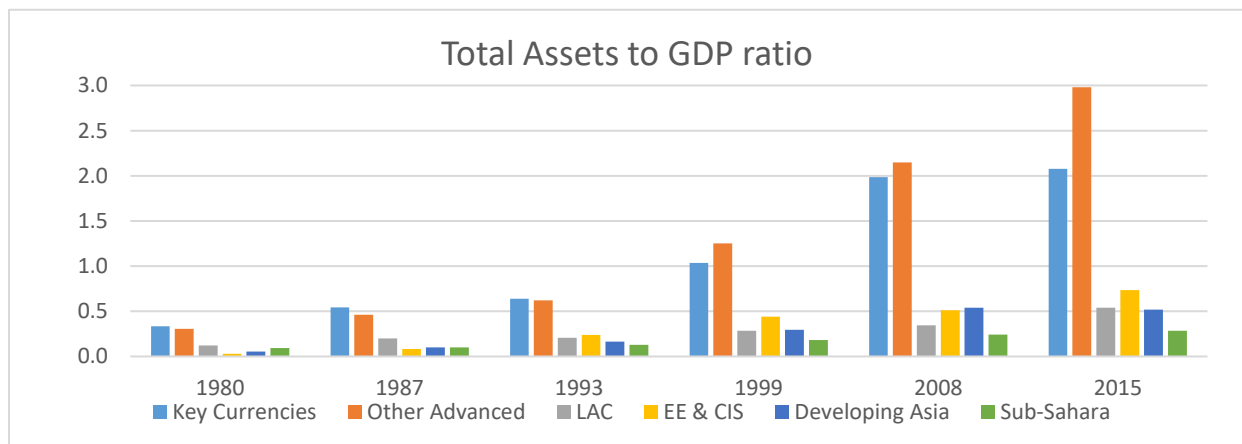


Figure 4: The Ratios of Total Assets to GDP, 1980-2015 (Lane et al. 2016)

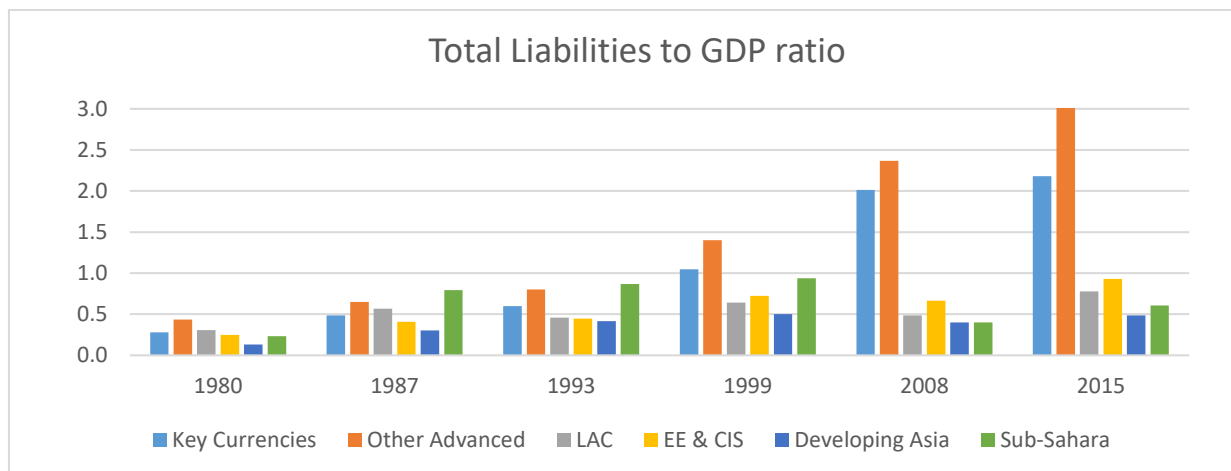


Figure 5: The Ratio of Total Liabilities, 1980-2015 (Lane et al. 2016)

The graphs are essential to present the difference between assets and liabilities ratio to the GDP of studied country groups. One of the many remarks that is the dominant position of key currencies and advanced countries in the means of their assets and liabilities share to the GDP. While these ratios were below % 100 for the period before 1999, the new millennium have experienced a significant increase in asset and liability share of GDP for key currencies and other advanced countries, resulting with a three-fold ratio of assets and liabilities to GDP for advanced countries while key currencies had a ratio slightly above 200% to the GDP. The ratio of liabilities and assets of key currencies and advanced countries are quite close to each other; in fact, no other country group has the same notion besides East Asian Developing countries that experienced higher ratios of assets compared to their liabilities for the period after 1999. Sub-Saharan African countries have the largest difference between their assets and liabilities' share to the GDP; while assets stayed at a level close to 0.2 for the whole period, the ratio of their liabilities were the highest for 1987 and 1993 in the studied groups and only decreased to 0.5 level for 2000s. The graphs above show that the financial globalization is mostly valid for only key currencies and advanced economies since these groups of countries have more than 80% of total assets and liabilities present in the cross-border capital market.

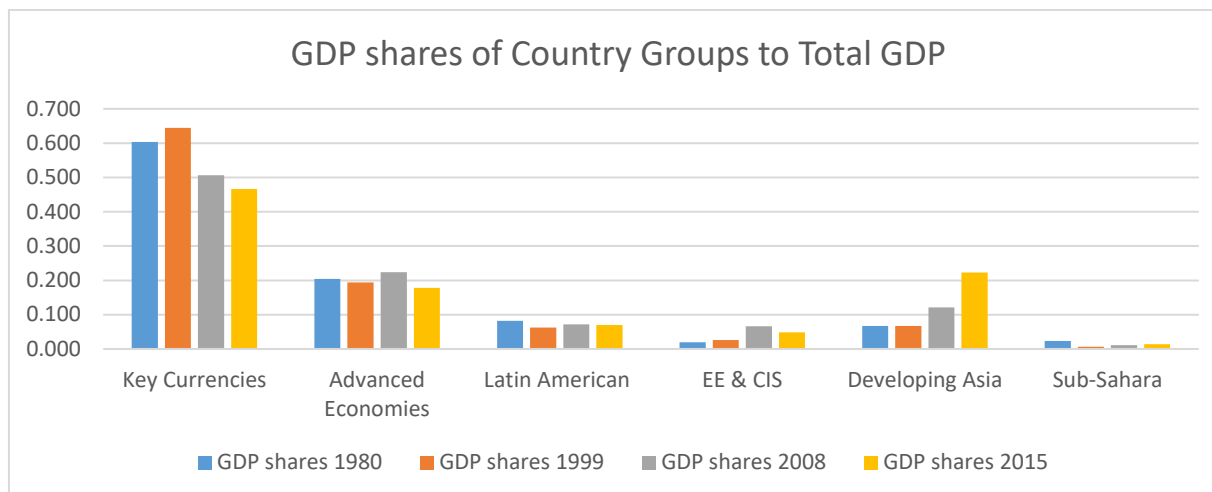


Figure 6: GDP shares of Country Groups to Total GDP; 1980, 1999, 2008, 2015 (Lane et al. 2016)

The graph above presents the GDP shares of the constructed country groups to the total GDP analyzed for 4 benchmarks between 1980 and 2015. After 1999, Developing Asian countries (lead by China) started to increase their share of GDP significantly while Key Currencies lost the absolute majority in the means of GDP share, but there is no apparent convergence of regions besides the push from Developing Asian countries. These graphs may explain why the quantitative studies mentioned in literature found mixed results of financial integration on economic growth. The key currencies and advanced economies have the lions share in the means of GDP and cross-border capital instruments compared the total values of world economy. As mentioned in the literature review, the studies that analyzed every country as the same input may have been skewed towards the experience of developed countries since these have the absolute majority in both GDP and cross-border capital instruments. The well-known studies from Kose, Prasad, Rogoff, and Wei may be used to present this phenomenon; their study from 2004 found no empirical link between financial integration and economic growth when the dataset only consisted of developing countries but the other study from same authors suggested the existence of non-visible good effects of financial integration on economic growth for global level (Kose et al 2004; Kose et al., 2009). Thus, the over-representation of key currencies and advanced countries suggest that financial globalization was not necessarily designated for whole economies in the world, but to those who had better financial development and greater currency trust in the global arena. Despite of the increasing share of assets and liabilities for other three groups that may be regarded as less developed, these increase in financial instruments did not result with a convergence of their respectable GDP shares as pro-financial integration literature have suggested.

### Annual Average GDP Growth Rate and Standard Deviation

	1980-1986		1987-1993		1994-1999		2000-2007		2008-2015	
	Mean	Std Dev	Mean	Std Dev.	Mean	Std.Dev	Mean	Std Dev.	Mean	Std.Dev
<b>KC</b>	2,30	1,53	2,60	1,97	2,38	0,83	2,20	1,04	0,94	2,04
<b>AE</b>	3,05	2,10	3,24	2,43	4,10	1,89	4,16	1,66	1,17	3,08
<b>LAC</b>	1,80	4,39	3,11	3,42	3,33	3,38	3,87	2,98	3,68	2,77
<b>EE &amp; CIS</b>			-6,21*	4,20*	-0,22	5,34	7,35	2,87	1,17	3,74
<b>EA</b>	5,26	2,32	6,81	2,15	5,23	3,68	6,13	1,69	5,66	1,85
<b>Sub-Sahara</b>	2,27	5,43	1,96	3,69	3,90	3,74	4,89	3,12	5,69	2,61

Table 2: Annual Average GDP Growth and Their Standard Deviation (Lane et al. 2016)

One of the emphasized notion in the financial integration literature is the stability effects of financial integration since it provides more means to diversify capital and evade risks. The average annual GDP growth rates and their standard deviation over the investigated period is presented in the table below. The average growth rates of countries for designated time-periods are calculated and the mean of these average growth rates are calculated. For the standard deviation, the standard deviations of individual countries are calculated and their average is placed in the table above.

The table shows that Key Currencies and Advanced Economies carried on having stable growth rates (with low standard deviations) until the period between 2008 and 2015. Emerging Asia economies have relatively high annual GDP growth rates despite of the crises but they did not increase their position in the cross-border capital transfers as it could be seen from the graphs on assets and liability shares above. As the study from Eichengreen et al mentioned, the standard deviations of annual GDP growth is much higher than the key currencies and slightly higher than advanced currencies (Eichengreen et al, 2003). After the introduction of Euro in 1999, Advanced Currencies had relatively less fluctuations in their annual GDP growth rates until the 2008 recession, implying the importance of having currencies as international reserves for sustained economic growth. The worst performed group in the analysis is Emerging East European Economies and Commonwealth of Independent States; after opening their borders for international capital, these countries have suffered long from volatility in their annual GDP growth while their average GDP growth have also stayed modest compared to other country groups (For EE & CIS, the data from 1991-1993 is used for 1987-1993). On the other hand, Sub-Saharan Countries have decreased their volatility rates in their annual GDP growth while succeeded to have more annual GDP growth rates. It is important to note that Sub-Saharan countries have tripled their share of liabilities to GDP ratio between 1980 and 1987 while having relatively low averages of growth and higher volatilities in their growth rate. However, Sub-Saharan countries have decreased their liabilities share significantly by 1999 and started to have less volatile growth

rates during the 21<sup>st</sup> century. Latin American countries had a fluctuating rate of liability share to their GDP for the investigated period; but, their assets share to the total GDP started to increase especially after 1999 and that may be one of the influential factors on the decrease of GDP growth rate volatility for the period after 1999.

The GDP growth rate and volatility of growths presented above strengthens the argument of diverging effects of different financial instruments on economic growth. Countries with lower levels of liability share compared to their assets share experienced lesser volatility in GDP growth rates while only significant convergence in the means of GDP has been realized by Emerging Asian countries whose external assets and liabilities' share did not encountered a major change. Key currencies and Advanced economies had stable and medium growth rates until 2008 when their assets and liabilities became twice as large as their GDPs, bringing questions about the upper limits of financialization that countries can experience without having fluctuating growth rates as some of the literature suggested (Arcand, Berkes & Panizza, 2012).

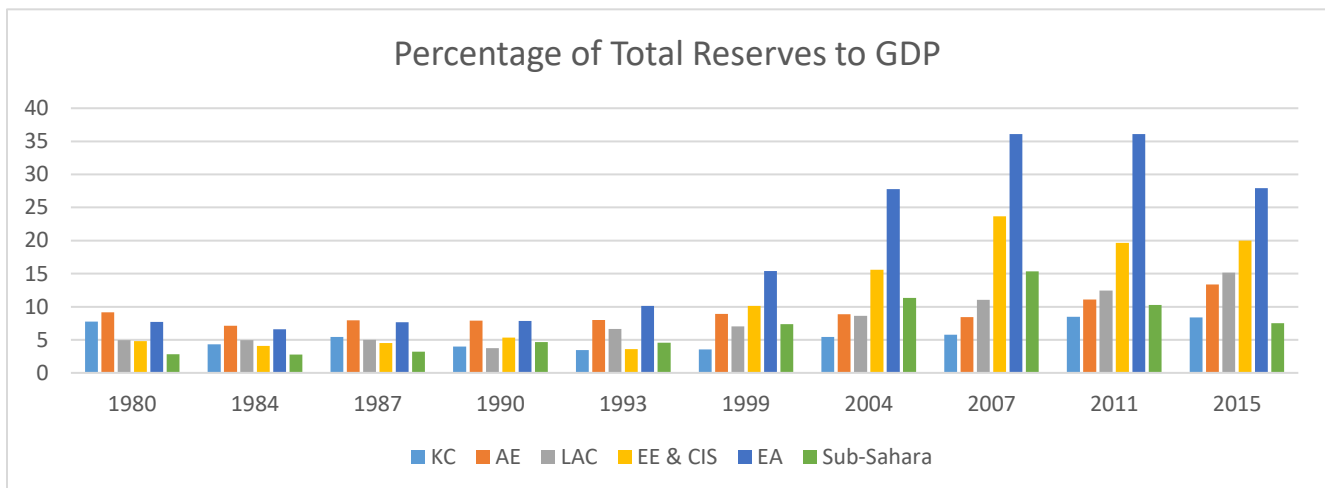


Figure 7: Percentage of Total Reserves to GDP (Own Source)

Literature suggests that an adequate level of international reserves can provide safety nets for countries that face economic setbacks or suffer from instability. Although there is no consensus on the necessary levels of international reserves, low levels of reserves are suggested to have no significant effect while higher levels of reserves have higher costs on the economic development of the countries due to vulnerabilities in sterilization processes or leaking domestic saving in funding investment (Alborela et al., 2015; Calvo, 2007; Alborela and Serena, 2007; Reinhart et al., 2016). The development of total reserves share to the GDP of analyzed country categories are presented in the graph above.

Between 1980 and 1993, the share of reserves to the GDP of these country groups have not experienced a significant change. Emerging Asian economies started to increase their share of reserves to the GDP from

1999 (after the Asian Crisis in 1997) until 2011, where they have reached an unprecedented level of reserve share of 35%. Emerging East European economies and Commonwealth of Independent States have also followed a reserve accumulation policy but their shares stayed relatively low compared to the Emerging Asian countries. One remark from the graph is how reserve positions of Advanced Economies and Key Currencies' position on reserve stock share to GDP has stayed relatively stable; while these groups had the leadership across the analyzed country groups, their share of reserve stocks to GDP have not changed until 2011 when reserve stock share have experienced a slight increase. These notions can be related to the policy shifts on reserve stocks after serious economic setbacks; Emerging Asian countries started to increase their total reserves after the Asian Crisis in 1997 while Global Economic Crisis in 2008 may have been a significant factor for the policy shift for Key Currencies and Advanced Economies. Sub-Saharan countries reserve share to their GDP have decreased between 2004 and 2015 period in which they have succeeded to have less volatile growth rates while having relatively high averages of GDP growth, suggesting that these reserves were used to have more sustainable economic growth. To understand the effect of crisis on reserve stocks, GDP growth rates, and assets and liability structure; the currency, inflation, and banking crises are given in the tables above by using the extensive database of Reinhart, Rogoff, Trebesch, and Reinhart (2016).



<u>1980-1986</u>				<u>1987-1993</u>			
	<b>Banking Crisis</b>	<b>Currency Crisis</b>	<b>Inflation Crisis</b>		<b>Banking Crisis</b>	<b>Currency Crisis</b>	<b>Inflation Crisis</b>
				-			
<b>KC (5)</b>	4	4	0		8	1	0
<b>AE (24)</b>	14	29	15		36	13	3
<b>LAC (10)</b>	33	43	46		11	42	55
<b>EE &amp; CIS (8)</b>	4	17	11		11	28	23
<b>EA (7)</b>	12	10	3		11	6	1
<b>Sub-Saharan (7)</b>	7	16	14		9	20	20
<u>1994-1999</u>				<u>2000-2007</u>			
	<b>Banking Crisis</b>	<b>Currency Crisis</b>	<b>Inflation Crisis</b>		<b>Banking Crisis</b>	<b>Currency Crisis</b>	<b>Inflation Crisis</b>
				-			
<b>KC (5)</b>	9	2	0		4	4	0
<b>AE (24)</b>	6	4	0		2	11	0
<b>LAC (10)</b>	20	29	23		11	15	6
<b>EE &amp; CIS (8)</b>	13	21	21		2	5	9
<b>EA (7)</b>	22	6	3		8	3	0
<b>Sub-Saharan (7)</b>	17	16	21		8	9	15
<u>2008-2015</u>				-			
	<b>Banking Crisis</b>	<b>Currency Crisis</b>	<b>Inflation Crisis</b>				
<b>KC (5)</b>	20	4	0				
<b>AE (24)</b>	63	12	0				
<b>LAC (10)</b>	2	16	8				
<b>EE &amp; CIS (8)</b>	14	12	0				
<b>EA (7)</b>	0	4	2				
<b>Sub-Saharan (7)</b>	8	11	1				

Table 3: Crises Composition for Country Groups (Reinhart et al. 2016)

The crisis database from Reinhart et al. does not include all countries that are analyzed in this study. For inflation crises, Reinhart et al. have taken inflation rates that exceeded 20%; for banking crises qualitative measures of data have been used; for currency crisis, the fluctuating exchange rates to the US dollars throughout one year have been considered. The number of countries in their respective country groups are given in the brackets near to their group indicator. Despite of the shrinkage in data size, the crises in 5 distinctive periods succeeded to present the disparities among country groups while showing the global trends and frequency of crises in different regions.

One of the first remarks from the tables presented above is that the share of inflation crises among country groups. After 1986, inflation crises have been only apparent in Latin American countries, EE & CIS, and Sub-Saharan countries while they have disappeared for other respective country groups. The opening of capital borders in the earlier periods of financial globalization has brought massive amount of banking and currency crises for all country groups except key currency groups that only experienced a surge of crisis after 2008. Since the theory supports the advantages of key currencies in the wake of crisis especially when considering the lender-of-last-resort functions of their central banks, this outcome also confirms the literature.

Emerging Asian countries have experienced more fluctuations in their economies in the means of banking and currency crises until 1999, but after that they have managed to perform the best compared to other country groups. This notion also coincides with the reserve accumulation policies of Emerging Asian countries when looked at the total reserve stock to GDP graph. The stabilizing effects of reserve accumulation is also apparent with Latin American countries; until 1999 these countries have suffered intensely from economic short-downs but after they have balanced their liabilities and assets while accumulating considerable amount of international reserves, they have performed better in the second phase of financial globalization during 2000s. After the introduction of Euro, advanced countries performed better than key currencies for the latter years until the 2008 crisis, when their assets and liabilities share reached to triple-size of their respective GDPs.

The recent literature on original sin have indicated that the countries' rates of original sin were diminishing since they have started to take more debt from international market in their own currency (Engel & Park, 2018). Original sin poses a criticism on the basis of the international money structure with slightly touching upon the lender-of-last-resort function of monetary authorities, most of the developing countries are suggested to suffer from their inability to borrow in their own currency in the international markets (Eichengreen, 2005). From the Bank of International Settlements data, the ratio of debt securities in their own currency to these countries' total debt securities are given in the table below.

<b>Countries</b>	<b>2015 Original Sin</b>
Key Currencies	0,5470
Advanced Economies	0,6412
Latin American Countries	0,9410
EE & CIS	0,9949
Emerging Asian Countries	0,9152
Sub-Sahara*	1

*Table 4: Original Sin Indicators for Country Groups in 2015 (BIS, 2019)*

Although the original sin indicators have seen to be improving in comparison to the study of Eichengreen et al, there is still a large margin between the country groups. Key Currencies and Advanced Economies are able to borrow a significant share of their total debt securities in their own currencies while the other groups still suffer from this notion. The slight increase in country groups' share can be explained with the larger economies' swap agreements as Du and Schleger have suggested (Du & Schleger, 2016). To assess the increasing importance of swap agreements in the international economy, the council of foreign relations' database on swap agreements from 2008 are summarized below.

After the Global Financial Crisis in 2008, more countries have started to engage in swap agreements to find more resources when they are in need of hot money. Swap agreements basically provides individual countries channels to get engaged in currency exchange in international markets by using their own local currency with the other party in the swap agreement. The first swap agreements are approved within developed world where Federal Reserve allowed Japan, Canada, Australia, Swiss National Bank and European Central Bank while these agreements were extended to large emerging economies such as Brazil and Mexico. These agreements somewhat reflected the bilateral agreements in Chiang Mai especially after the Asian Crisis in 1997 where China, South Korea, and Japan have agreed to monitor their own currencies by constructing forward rates in their respectable currencies. These bilateral linkages have transformed into a multilateral framework in 2010 when Chiang Mai started to monitor Asian countries as IMF have been doing for the developing countries' currencies. China has taken the leadership of these actions by engaging into 32 different bilateral agreements with countries all around the world from 2009, enhancing its currency trust as an international reserve and gaining a foothold in Special Drawing Rights from the beginning of 2015 (CFR, 2019). Although swap agreements are one of the many factors that open new channels for developing countries to borrow in their own currencies in the international markets, these agreements are not structuralized and can prove to be short-termed due to the changing policies of the engaged parties.

## 7 Concluding Remarks

There have been many studies on financial integration and economic growth in the literature. The massive increase in external financial instruments drastically shaped the global economy and polity from the beginning of the 1980s, however there still does not exist a uniform framework on its influences nor agreement on its influence for individual countries. While immense capital account liberalization has been the main agenda for international organizations in the 80s and 90s, criticisms on the structure of international monetary system are started to increase especially after 2008 crisis. In this study, we aimed to provide a more comprehensive framework on the development of international monetary structure by regarding chartalist theory, the necessity of global safety nets (having international reserves after 1999s or increasing amount of swap agreements), and the financial and monetary trilemma.

The external liabilities and assets share of the countries showed that financial globalization is a phenomenon that mostly applied to key currencies and other advanced economies since these two groups have the distinct majority in the total assets and liabilities in the world while having more than 70% of worlds total GDP. However, the increasing share of Emerging Asian countries (lead by China) have started to decrease their share in total GDP while not significantly shrinking their total assets and liabilities share. Accumulation of international reserves seems to have more influence on this convergence of GDP than the liabilities and assets increase, thus contradicting the mainstream theory where the literature focused on the negative effects of having high levels of reserves or proposing more financial integration for economic growth. The excess liability share compared to assets share of country groups are suggested to make the domestic economies more fragile when the GDP growth rates and their volatilities are analyzed. These notions have been promoted lately by Schoenmaker who suggested the existence of financial trilemma where financial stability, financial integration, and national regulation cannot exist together (Schoenmaker, 2011). Schoenmaker's arguments can be found in Rodrik's remark in which he showed the lacking political union as the main obstacle for the total financial integration since every individual country has their own agenda for their domestic economy while having means to manipulate it. Rodrik has prophesized two distinct interpretations for global economy in the future; he suggested that either world economy will move more to a global federalism where decision-making processes are conducted in monetary unions, or it will move more to a protectionist world where countries are promoting their own economic agenda while they retract themselves from financial integration (Rodrik, 2000).

Nineteen years after Rodrik's study, world economy seems to be moving to a more protectionist understanding of finance. The immense amount of reserve accumulation from developing countries indicate that these countries are aware of lacking global safety nets in the international monetary structure

and trying to squeeze down the effects of possible crisis by hoarding international reserves. After the 2008 crisis in which the accountable key currencies have lost their long-term stability, the individual countries have started to engage more in bilateral swap agreements since they want to have more freedom pursuing their own economic goals by taking debts in their own currency. The suggestions for new supranational currencies that can be used as new international reserves are started to have more voice in the global arena, Philip Lane is one of the advocators of creating new basket currencies especially for developing world while Central Bank of China pointed out the necessity to reform the International Monetary Structure by showing the clashes between domestic and international economic policies for the key currency groups (Lane, 2016; Xiaochuan, 2009). IMF has also been promoting SDRs as alternative reserves by due to inherent stability of international monetary structure and the lack of global safety nets (IMF, 2018). The deficiencies in international financial structure became apparent with the 2008 crisis while the theoretical evidence have been suggesting that financial integration should not be treated as the same with trade globalization due to its political aspect. Thus, we emphasize the importance of global safety nets and more uniform decision-making in monetary policies to carry on with the financial globalization by pointing out the structural weaknesses of current international monetary structure.

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