Chapter 8. Bank and Crisis in the new scenario

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1. Introduction

The existence of a robust and stable financial system is a cornerstone of economic growth and development worldwide, as it promotes job creation and stimulates business productivity. Within this financial system, financial markets and banks—including commercial, retail, investment, and central banks—play a predominant role. Banks mobilize investors' savings and enable the financing of investments, which are essential drivers of the economy. They facilitate financial transactions through the implementation of efficient payment systems (such as bank cards and online payments), thereby promoting international trade. Central banks, for their part, stabilize the financial system by controlling inflation and acting as lenders of last resort for commercial banks.

Given their crucial role in the economy, the stability of banks is vital. When banks face crises, the repercussions can be severe for all economic actors, including businesses, investors, and consumers. Therefore, preventing financial crises is of utmost importance. To achieve this, it is essential to understand the causes and consequences of past crises.

In the following chapter, we will delve into past financial crises, examining their international repercussions across various geographic regions and the subsequent regulatory measures implemented.

2. Banks through storms

Understanding the historical context of past crises is crucial for managing future challenges.

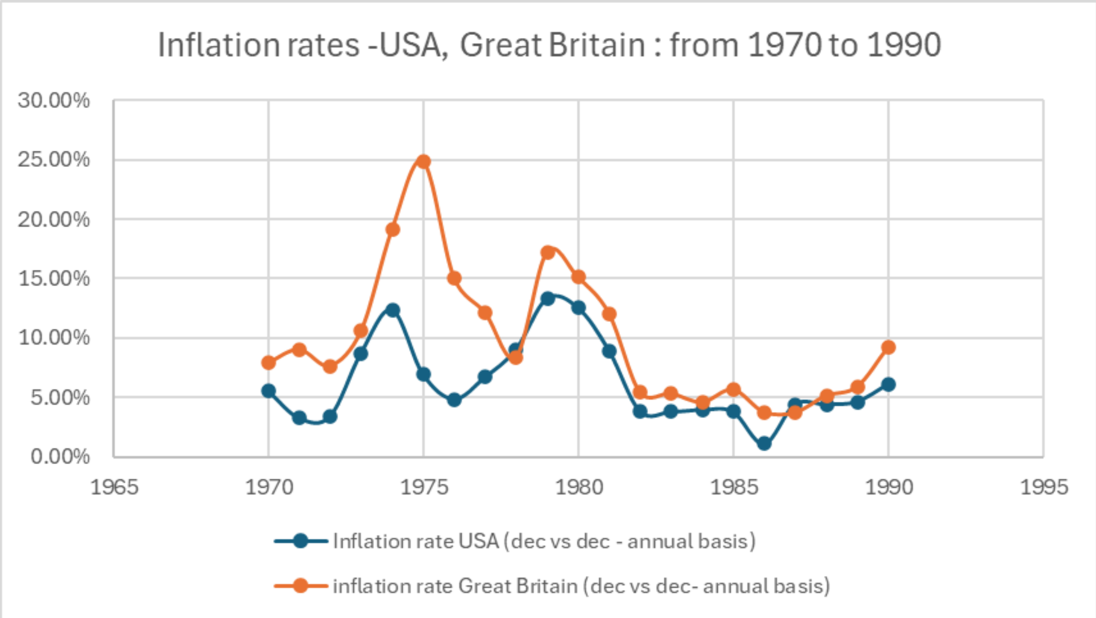
2.1. <u>The systemic crisis of 2007/2008</u>

It was most certainly in 2007/2008 that the world became aware of the significant interconnection between the financial and the economic world. We will briefly review the main causes of the recent crises that have shaken the banking world to fully understand their context of emergence and their consequences.

2008. Here is the chronicle of a death foretold. Since the 1980s, the world has witnessed an extreme financialization of the economy alongside the massive development of financial markets. This is the era of financial liberalization (and, of course, financial deregulation) initiated by the Anglo-Saxon world through figures such as Ronald Reagan (40th President of the USA) and Margaret Thatcher (Prime Minister of the United Kingdom from 1979 to 1990). Enter Adam Smith's invisible hand of the market and the end of the welfare state dear to Keynes. One motto: “let do and let go"... implying that capitalism should be allowed to run its course without state intervention. The USA and the United Kingdom are the first countries to embrace monetarism advocated by economist Milton Friedman, who positions himself as the antithesis of John Maynard Keynes.

Monetarists see monetary policy (control of the money supply by the central bank) as a tool for stabilizing the economy, in contrast to Keynesianism, which focuses more on fiscal policy (public spending and taxes) to stimulate economic recovery. In the 1970s, the USA and Great Britain were severely affected by the oil crises, which resulted in a significant increase in the inflation rate (see Figure 1). Keynesian fiscal policies based on the welfare state showed their limits in curbing the inflationary crisis. Worse, by the late 1970s, the new leaders of the USA and Great Britain saw these fiscal policies as an additional cause of the growing inflation. We thus better understand why these emblematic political figures of what the world would come to call neoliberalism embraced monetarism, convinced that only controlling the money supply could constrain inflation. Neoliberalism is therefore the fertile ground for market liberalization. **The first milestone** of the 2008 systemic crisis is set.

Figure 1. Evolution of inflation rates from 1970 to 1990 in USA and Great Britain



Source : www.inflation.eu data processed by the authors.

The second milestone, on the other hand, is set in the USA under the presidency of Democrat Bill Clinton. In the early 2000s, the American economy was significantly shaken by the bursting of the internet bubble and by the September 11, 2001, attacks. After more than ten consecutive years of growth, the American economy enters a recession. The GDP growth rate, which began to slow down at the end of the 1990s, collapsed in 2001. Figure 1 shows that the United States was one of the first countries to experience this recession, dragging other countries in its wake, such as the European Union countries, Japan, North Africa and the Middle East. According to the figures presented in Figure 2, only China seems to have avoided an economic recession in the early 2000s, likely due to the opening of its market and massive exports. President Clinton reinforced financial deregulation by repealing the Glass-Steagall Act in 1999, thereby allowing commercial banks to engage in investment banking activities, which resulted in increased financial risks (Stoffaës, 2015).

Figure 2. GDP Growth (%) from 1990 to 2023S

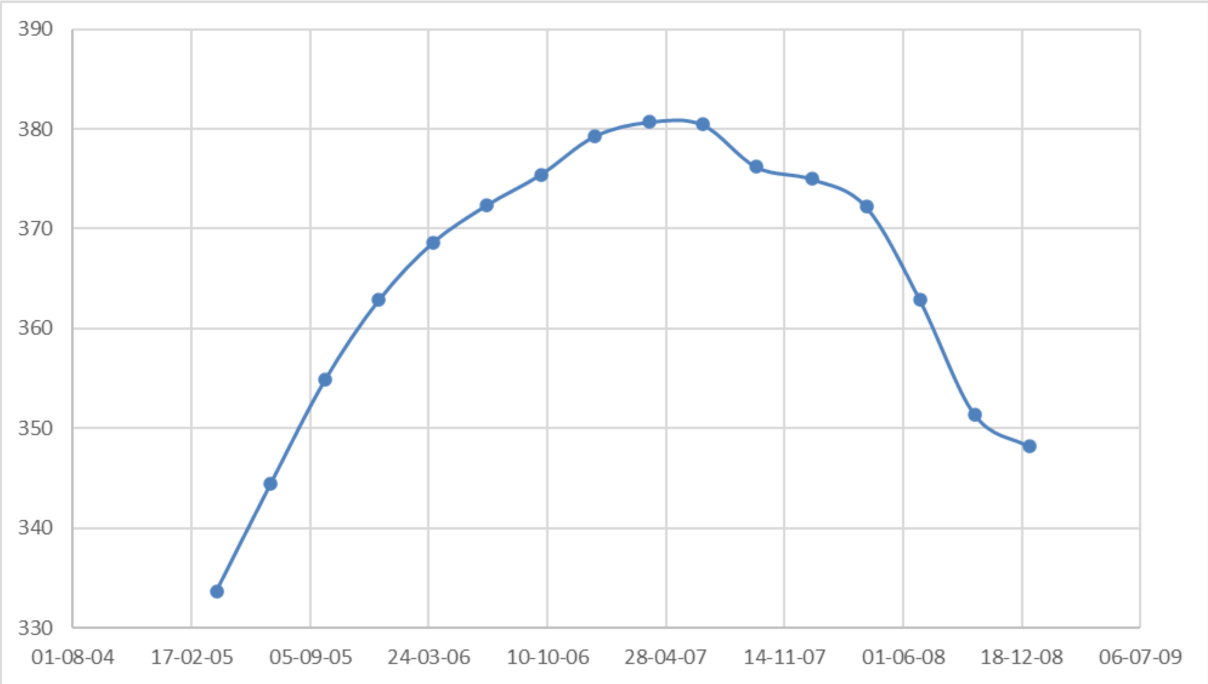
Source: https://donnees.banquemondiale.org/ data processed by the authors.

Additionally, the President supported policies aimed at encouraging banks to grant risky mortgage loans to low-income borrowers (the so-called subprime loans). It is important to note that the subprime loans were loans with variable interest rates. To limit the effects of these subprime loans on bank capital, American banks have massively securitized these subprime loans. This is how MBS (Mortgage-Backed Securities) were born and sold worldwide to various types of investors, including some of the major systemic banks, pension funds, insurance companies, etc.

The Federal Reserve, to stimulate economic growth and recovery, massively increased the money supply and maintained historically low interest rates. The key interest rate dropped from 6.5% at the beginning of the 2000s to 1% in May 2003 (Sorbe, 2008). The goal sought by the Fed was to encourage borrowing and consumer spending. The engine of the American economy thus becomes debt.

The third milestone concerns the real estate market which experienced very rapid price growth until 2005, fueled by easy access to credit (subprime) that boosted the demand for housing, an abundance of liquidity in the market, and speculation, as many investors bought properties with the hope of making quick gains. What was bound to happen happened, as a speculative bubble formed in the American real estate market (see Figure 3).

Figure 3. Evolution of the FHFA (Federal Housing Finance Agency), OFHEO (Office of Federal Housing Enterprise Oversight) - Quaterly House Price index (USD)



Sources: FactSet Data processed by the authors.

All the elements are in place for the final slip. Between 2004 and 2006, the Fed gradually raised its key interest rates from 1% to 6% to combat rising inflation. The adjustable rates of subprime loans followed suit, precipitating the collapse of the housing market and the bursting of the speculative bubble. Many households with these loans defaulted, and their properties were foreclosed, increasing the housing supply and further driving down prices. This crisis could have remained limited to the American housing market, but the MBS financial products had spread worldwide. These products lost their value as the housing market collapsed. It is the beginning of the most important financial crisis of the 21st century.

In the following, we have chosen to focus primarily on the consequences for the banking world. These consequences can be summarized by "Who is next?"

2.2. "Who is next?" or the unprecedented crisis of confidence in the banking world

On April 12, 2008, the finance ministers and central bankers of the G7 countries issued an ultimatum to the banks. They had 100 days to disclose losses related to subprime loans and the assets backed by them. The goal of the G7 was to ensure transparency about these losses to limit the distrust that had developed between banks since the second half of 2007. Fitch Ratings announced a loss of $400 billion related to subprime loans and backed assets, of which $200 billion was borne by the banks. However, this figure of $400 billion was likely underestimated, as other sources, such as Wilmarth (2009), reported a total loss of $1.1 trillion, with more than half borne by seventeen large universal banks.

The 2008 financial crisis made history with the bankruptcy of several major banks, including Lehman Brothers, Washington Mutual, and some European institutions such as the Icelandic bank Glitnir.

Lehman Brothers, one of the largest American investment banks, went bankrupt in September 2008 with debts amounting to more than 600 billion dollars. This bankruptcy is often attributed to massive investments in complex and risky financial products, particularly subprime mortgages, as well as to dubious accounting practices.

Washington Mutual, the largest savings bank in the United States, also went bankrupt in 2008. It held approximately 300 billion dollars in assets and just under 200 billion dollars in deposits. The main reason for its bankruptcy was its excessive exposure to subprime mortgages, which led to massive losses when the property market collapsed.

In Europe, the Icelandic bank Glitnir was nationalized in October 2008 after encountering liquidity problems. The crisis revealed that Icelandic banks had debts far exceeding the size of the national economy, with international commitments reaching 85 billion dollars, or about 10 times Iceland's GDP.

The main reasons for these bankruptcies include excessive exposure to subprime mortgages, complex and opaque securitization practices, and over-reliance on short-term financing. The resulting liquidity crisis led to a widespread loss of confidence in the financial system, exacerbating the banks' difficulties. It is the materialization of systemic risk and the beginning of the contagion effect that will spread throughout the interbank market worldwide. Table 1 presents the amounts of impairments suffered by banks in the second quarter of 2009.

Table 1. Largest impairments in billions of dollars within banks worldwide - descending ranking

Institutions	Country	Amount of impairments (billion USD)	Institutions	Country	Amount of impairments (billion USD)
Wachovia Coorporation	USA	96.5	IKB Deutche	Germany	12.8
Citigroup Tnc.	USA	68.1	Deutche Bank AG	Germany	11.6
Merrill Lynch	USA	55.9	ING Groep N.V.	Netherlands	9.3
UBS AG	Switzerland	48.6	HBOS PLC	Scotland	9.3
Washington Mutual	USA	45.6	Fortis	Belgium	8.2
HSBC Holding	England	33.1	Crédit agricole	France	7.7
Bank of America	USA	27.4	Société générale	France	7.5
National City Corp.	USA	26.2	Barclays	England	6.5
JPMorgan Chase	USA	20.5	Bayersche Landes	Germany	6.1

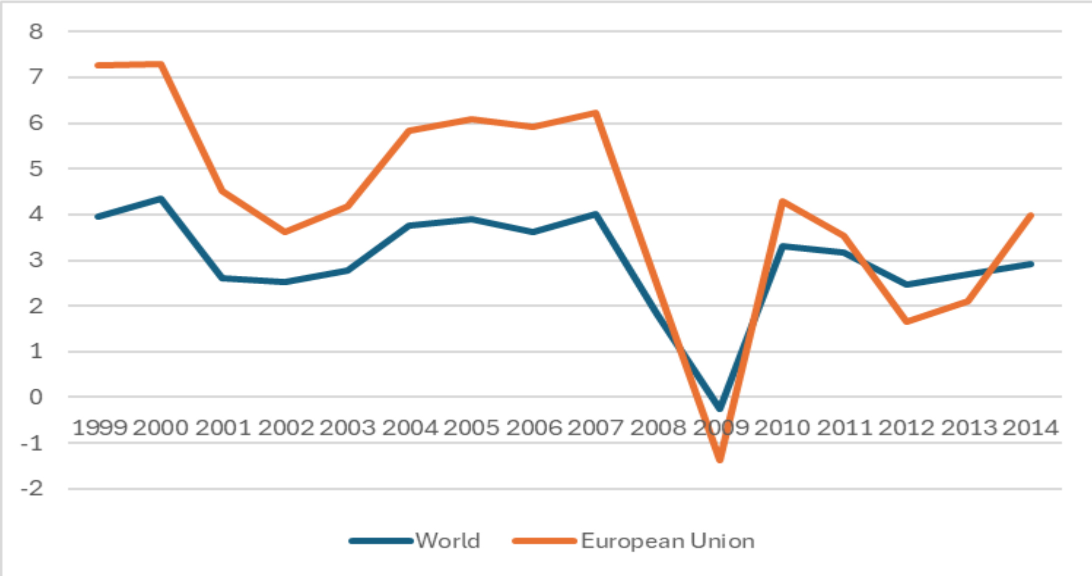
Wells Fargo	USA	17.7	BNP Paribas	France	5.3
Morgan Stanley	USA	15.7	Hypo Real Estate	Germany	5
Royal Bank of Scotland	Scotland	15.1	Goldman Sachs	USA	4.9
Lehman Brothers	USA	13.8	Dresdner Bank	Germany	4.5
Crédit Suisse	Switzerland	13.3	NATIXIS	France	4.3

Sources: Artus et al. (2010) Data processed by the authors

We observe that the majority of banks that have suffered the largest asset impairments are located in the USA or Europe. Among these banking groups, those appearing in bold are still on the list of global systemically important banks (G-SIBs)[1]. This list is established by the Financial Stability Board (FSB), in consultation with Basel Committee on Banking Supervision (BCBS) and national authorities. We will discuss the origin of the creation of the Financial Stability Board later. Please note that it was created in response to the 2008 financial crisis.

Mistrust is spreading, banks are no longer lending money to each other for fear of new bankruptcies, and they are not lending money to businesses and households (credit crunch). The financial crisis is therefore spreading to the economy, leading to a decrease in consumption (Figure 4) and investment, an increase in unemployment, and consequently a drop in the GDP of countries (Figure 2).

Figure 4. Final household consumption expenditures (annual growth %)



Sources: https://donnees.banquemondiale.org/ Data processed by the authors

[1] https://www.fsb.org/2024/11/2024-list-of-global-systemically-important-banks-g-sibs/

2.3. Against the grain of pure liberal ideology... The specter of Keynesianism: States support for banks

The 2008 financial crisis required massive government intervention to stabilize the global banking system. Several major banks had to be bailed out with public funds, including Citigroup, Bank of America, Lloyds Banking Group and UBS.

Citigroup received substantial aid from the US government. In October 2008, Citigroup obtained 25 billion dollars under the Troubled Asset Relief Program (TARP), followed by an additional 20 billion in November. In addition, the government guaranteed 306 billion dollars of risky assets[2].

Bank of America also received significant support. In addition to the initial $25 billion received through TARP, the bank obtained an additional $20 billion in January 2009 to cover losses related to the acquisition of Merrill Lynch. The government also guaranteed $118 billion in problematic assets (Rhee, 2010).

Lloyds Banking Group, formed after the acquisition of HBOS by Lloyds TSB, received a capital injection of £20.3 billion (approximately $30 billion) from the British government in 2008. This aid stabilised the bank and strengthened its capital position (Delion, 2008).

UBS, the large Swiss bank, was bailed out by the Swiss government with a capital injection of 6 billion Swiss francs (approximately 5.3 billion dollars) in October 2008[3]. In addition, the Swiss National Bank created a special fund to take over 60 billion dollars of toxic assets from the bank.

These interventions were necessary because of the massive exposure of these banks to subprime mortgages and complex financial products. The resulting liquidity crisis led to a generalized loss of confidence in the financial system, requiring emergency measures to avoid a total collapse.

These measures have restored confidence and stabilized the global financial system, but they have also raised questions about the regulation and supervision of banks to avoid similar crises in the future. This subject will be discussed in section 4.

3. Global Finance: An International Contamination?

In this section, we will review specific regions of the world to assess their resilience to the crisis. As previously discussed, the American economy collapsed due to a combination of factors, including deregulation, the housing bubble, subprime loans, and excessive financialization of the economy. From an international perspective, we will discover that the systemic crisis of 2008 had varying consequences in terms of scale and nature.

Before that, we will provide a brief historical overview to help us understand why finance is global and how a crisis can spread internationally.

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[2] https://www.citigroup.com/global/about-us/heritage/2007/amid-economic-turmoil-citi-recapitalizes

[3] https://www.swissinfo.ch/fre/politique-federale/le-parlement-accepte-de-sauver-ubs/7088180

3.1. The origins of financial globalization

At the end of the Second World War, the Bretton Woods agreements enabled the creation of a huge, stable currency market. 44 allied countries gathered in Bretton Woods (New Hampshire) and agreed to establish a system based on the convertibility of currencies into US dollars, which were themselves convertible into gold at a fixed rate. Two major institutions were created on that occasion: the International Monetary Fund (IMF) and the International Bank for Reconstruction and Development (IBRD), which has now largely become the World Bank.

But since the signing of these agreements, while the international institutions have endured, much has changed. In the 1970s, the Bretton Woods system began to show signs of weakness due to growing economic imbalances, particularly the budget and trade deficits of the United States. In 1971, President Richard Nixon announced the end of the dollar's convertibility into gold, and so signaling the end of the Bretton Woods agreements. This led to the adoption of floating exchange rates, formalized by the Jamaica Accords in 1976. The dollar then became a fiat currency, and other currencies began to float freely on the foreign exchange markets. This was the start of a process of liberalization of trade on a global scale, resulting in increased volatility of the main exchange rates.

The 1980s saw the unprecedented development of the bond market. The securitization of public debt allowed for the widespread financing of States: thanks to this global bond market, the budget deficits of States are financed without difficulty. To protect themselves from floating exchange rates and interest rates now set by the markets, a new market developed in the 1990s, the market for derivatives that allow investors to hedge against the new risks arising from the liberalization of the money markets.

The 1990s also saw the emergence of new players: the emerging countries. These countries have strong growth potential and take advantage of the global markets to sell their products and services, but also to finance their rapid investments.

It is in this context that financial players of international stature, including the systemic banks, appeared at the turn of the millennium.

3.2. Asia and exports decline

Asian countries experienced a severe financial crisis in 1997. This financial crisis prompted them to take a series of measures that strengthened their resilience during the 2007/2008 crisis. The effects of the 2007/2008 financial crisis were mainly indirect, linked to the severe difficulties in other regions of the world. Indeed, the Asian countries most dependent on exports experienced a sharp **decline in demand**, primarily from the USA and Europe, which resulted in a decrease in their economic growth. South Asian countries, less integrated into global supply chains and international financial markets, were less affected. (Brunschwig *et al.*, 2011). *"The transmission of these shocks to the domestic economy depended on the degree of financial development, the composition of exports, degree of trade openness, corporate and household balance sheets, and the banking sector's strength*." (Khan et al., 2021).

Among the Southeast Asian countries, Malaysia and Thailand, which are open economies, suffered more than countries such as the Philippines and Indonesia (Khan et al., 2021)

Asian countries adopted more flexible exchange rate regimes after the 1997 crisis, which allowed for better absorption of external economic shocks. Strengthening banking sector supervision contributed to financial stability and protected economies from potential shocks. After the late 1990s Asian financial crisis, Asian economies generally maintained current account surpluses and accumulated significant foreign exchange reserves. This gave them greater leeway to face the 2008 crisis. The intentional implementation of expansionary fiscal and monetary policies during the global financial crisis contrasts sharply with the contractionary policies used during the Asian financial crisis, highlighting a trend towards more agile economic management (Ganguli, 2024). China and India, on the other hand, managed to maintain positive growth (respectively, 9.6% in 2008 for China and more than 6% for India in 2008) thanks to the dynamism of their domestic market and thanks to their economic stimulus policies. Among the lessons learned from the 1997 crisis, Asian countries massively implemented fiscal stimulus programs, in proportion to GDP. These programs were larger than those of industrialized economies (Brunschwig *et al*., 2011).

3.3. GCC[4] and indirect effect on oil demand

The literature identifies several resilience factors that have enabled the Cooperation countries to cope with the crisis. Among these factors, we highlight the growing importance of Islamic banks in these countries (except for Oman where Islamic banks were still relatively underdeveloped). Hussien *et a*l. (2019) emphasize that these banks, guided by Sharia principles, are better capitalized with capital adequacy ratios exceeding the required standards, which has protected their performance.

Hussien *et al.* (2019) mention that Islamic banks in the Cooperation Council countries withstood the direct shocks of the crisis better than conventional banks. Sharma (2010) further indicates that to prevent the fallout from the global crisis and to strengthen confidence in the economy, the central banks of several countries (UAE, Kuwait, and Saudi Arabia) announced that they would offer a general three-year guarantee on deposits and savings in all national banks and foreign banks with 'significant operations' in the federation, including a guarantee on all interbank lending operations between banks.

Sovereign wealth funds were used to invest in local stock markets, and the Qatar Investment Authority (QIA) and the Kuwait Investment Authority (KIA) purchased shares in national banks to help strengthen the banks' capitalization (Sharma, 2010).

Among the other Middle Eastern countries, Egypt has been among the most resilient.

The Egyptian financial sector held very few assets backed by U.S. mortgages (later termed toxic assets) and benefited from net international reserves of over 30 billion dollars, which allowed it to withstand the effects of the crisis (Sharma, 2010). According to Sharma (2010), these resilience factors limited the contagion effect of the financial crisis in Egypt.

However, some authors such as Gana-Oueslati and Jean-Yves Moisseron (2010) are much more nuanced, particularly regarding Egypt's resilience to the 2008 crisis. These authors even mention the myth of Egyptian resilience. Indeed, it seems that the 2008 crisis caused significant damage to the Egyptian economy, the effects of which only became apparent a few years later. The Egyptian economy is heavily dependent on revenues from tourism, oil, the Suez Canal, American aid, and remittances from Egyptian workers abroad. The 2008 crisis reduced these revenues, which had a negative impact on the economy. Following the deterioration of Egypt's

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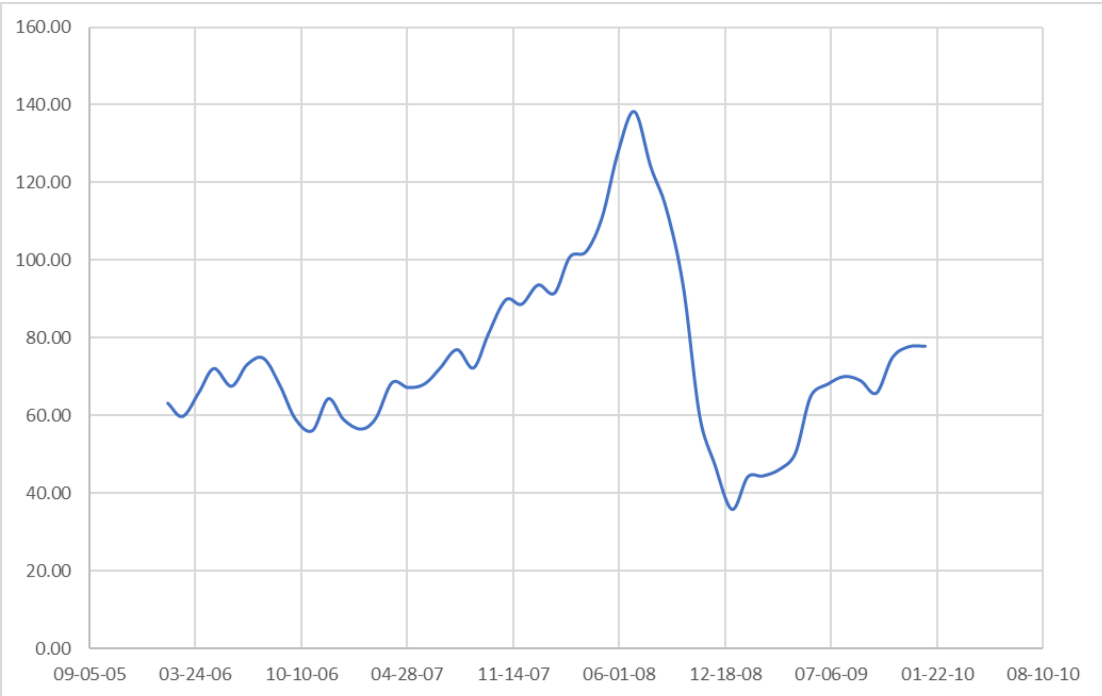
[4] Saudi Arabia, United Arab Emirates, Kuwait, Qatar, Bahrain, Oman

economic conditions, the country experienced a severe social crisis in 2011. This crisis calls into question the reality of Egypt's resilience following the global financial crisis of 2007/2008.

Even though the Gulf economies fared better than European and American economies against the direct effects of the 2007/2008 financial crisis, these countries had to face the indirect consequences of this crisis. Indeed, the 2007/2008 crisis led to a global recession that **reduced the demand for oil** in the USA and Europe, which, in turn, also reduced oil prices from the end of 2008. The OPEC countries naturally responded to this situation by reducing their production, but these measures took time to have significant effects on the markets and the economies of the countries concerned. The price of West Texas Intermediate (WTI) increased from $93.93 USD in January 2008 to $130.63 USD in June 2008. The price of Crude Oil Brent Global Spot Ice increased from $97.26 USD in January 2008 to $138.40 USD in June 2008 (Table 6). The year 2008 was marked by extreme volatility as, after reaching a historic peak in June 2008, the price of oil plummeted. The price of Brent fell to below $40 in December 2008. This volatility in oil prices in 2008 can be attributed to several economic as well as geopolitical factors. Firstly, the rapid economic growth of certain Asian countries like China and India led to an increase in oil demand. Investors also massively invested in short-term oil contracts, convinced that the price increase would continue (Schlumberger, 2009). In the second half of 2008, oil prices dropped dramatically. The financial crisis resulted in a significant contraction of credit, which was accompanied by a reduction in global demand for oil. Additionally, to these economic factors, a series of geopolitical factors must also be considered. Indeed, it was also during this period that the Middle East experienced some instability. Geopolitical tensions, particularly in Iran and Iraq, disrupted oil supplies and contributed to the price increase. Oil supplies were also hampered by attacks on oil facilities in Nigeria (Cisneros-Lavaller, 2007)

Figure 5. Evolution of Crude oil Brent Global Spot Ice per month in Dollar between 2006 and 2009



Source: Factset Data processed by the authors

3.4. USA and favorable monetary policies

The close ties between European banks and American banks accelerated the contagion effect following the loss of value of financial products backed by subprime loans in which European banks had heavily invested. Furthermore, some European banks had very low capitalization levels, leading to high exposure to risks, particularly systemic risk.

While the USA and Europe were hit hard by the effects of the financial crisis, their responses were not at all the same. Indeed, the USA quickly attempted to stabilize the financial system by implementing economically favorable monetary policy measures (historically low interest rates and liquidity injections through quantitative easing programs). The clear goal was to encourage lending and investment. Furthermore, the USA managed to avoid a total collapse of their financial system through the execution of rescue plans such as the Troubled Asset Relief Program (TARP), which granted the Secretary of the Treasury authority to either purchase or insure up to $700 billion in troubled assets owned by financial institutions (Webel, 2013). These financial stabilization measures took place in 2008/2009.

In 2009-2010, the American Recovery and Reinvestment Act injected funds into the economy to stimulate growth and help create jobs. Finally, in 2010, the USA implemented a series of regulatory reforms to strengthen financial sector regulation (Dodd-Frank Act). According to Baily *et al.* (2017), although adjustments are possible and recommended, the Dodd-Frank Act has brought "*clear gains*" in improving financial stability, particularly in terms of higher capital requirements for banks, without harming the economic growth of the USA. The USA managed to recover their pre-crisis economic growth as early as 2011 and, more importantly, stabilize it by 2012 (Figure 2).

3.5. Europe and the sovereign debt crisis

In Europe, the situation was quite different from that of the USA. Indeed, public debt significantly increased within the Eurozone due to the rescue plans implemented, massive state interventions to refinance European banks, and the contraction of state revenues due to the economic recession that followed the financial crisis. It was in Greece in 2010 that the revelation of the extent of public debt and the budget deficit panicked investors. They began to doubt the ability of Greece and, by contagion, other states such as Ireland, Portugal, Cyprus, Italy, and Spain to repay their debt. The consequence was a particularly rapid rise in interest rates on public borrowings, plunging the Eurozone into a new crisis commonly called the sovereign debt crisis. To stabilize the situation, measures were taken such as the creation of the European Financial Stability Facility in 2010 and the European Stability Mechanism in 2012 to help countries in difficulty through the granting of loans. The goal was to restore market confidence (Banque de France, 2023). Some European banks, weakened by the consequences of the financial crisis, were heavily exposed during the sovereign debt crisis.

To assist states weakened by the sovereign debt crisis, the "Securities Markets Programme" (SMP) was launched in May 2010 by the European Central Bank. It involved purchasing sovereign bonds of Eurozone states facing investor distrust on the secondary market, who demanded high-risk premiums to acquire these securities (. The European Central Bank (ECB) thus proceeded to buy bonds from Portugal, Ireland, Italy, Greece, and Spain for a total amount of approximately 220 billion euros. This program has now ended. It was replaced in September 2012 by the "Outright Monetary Transactions" (OMT) program, which, however, did not lead to the acquisition of new securities by the ECB. These purchases made under the SMP program did not result in monetary creation. Indeed, while the ECB did inject liquidity during its purchases, it carried out the "sterilization" of its interventions[5]

Several European countries adopted austerity policies to reduce their budget deficits and stabilize their economies after the 2008 financial crisis. Among the main countries that chose austerity were Greece, Ireland, Portugal, Italy, Spain, and even France. However, these measures were quite controversial because the significant reduction in public spending had varied impacts on national economies (once again, we return to Keynes...).

4. Regulation as a safeguard?

According to the Global Financial Stability Report published by the IMF in October 2024, the global banking sector demonstrated remarkable resilience throughout the year. This resilience is undoubtedly the result of increasingly effective macroprudential regulations regarding capital requirements, liquidity, and risk management.

This section will draw up the regulatory framework and show the current situation of banks.

4.1. Basel accords as the common regulatory framework for banks

The Basel Accords are a set of international banking regulations developed by the Basel Committee on Banking Supervision (BCBS). Their primary aim is to strengthen the regulation, supervision, and risk management within the banking sector. The spirit of the Basel Accords is to ensure that banks hold sufficient capital to cover their risks, thereby promoting financial stability and reducing the likelihood of systemic crises (BIS, 2010).

The Basel Committee on Banking Supervision, which formulates these accords, consists of members from major banking supervisory authorities and central banks around the world. Countries that are part of the Basel Committee include the United States, the United Kingdom, Germany, France, Japan, Canada, Italy, and many others[6]. These countries commit to implementing the Basel standards within their national regulatory frameworks.

While Saoudi Arabia is member of the committee, The **United Arab Emirates (UAE)** holds observer status. As an observer, the UAE can attend meetings and participate in discussions, gaining access to valuable information and documents produced by the Committee. Although observers do not have voting rights, they can contribute their perspectives and experiences, enriching the dialogue on international banking regulations. This status allows the UAE to stay informed about regulatory developments and best practices, while actively engaging in the global financial regulatory community.

4.2. Basel III as a response to deficiencies in financial regulation

The latest version of the accords was introduced in response to the weaknesses in financial regulation revealed by the 2008 financial crisis. It brought several significant changes to enhance the banking sector's resilience.
First, Basel III **increased the minimum capital requirements** for banks. It introduced stricter definitions of capital, ensuring that banks hold a higher quality of capital that can absorb losses

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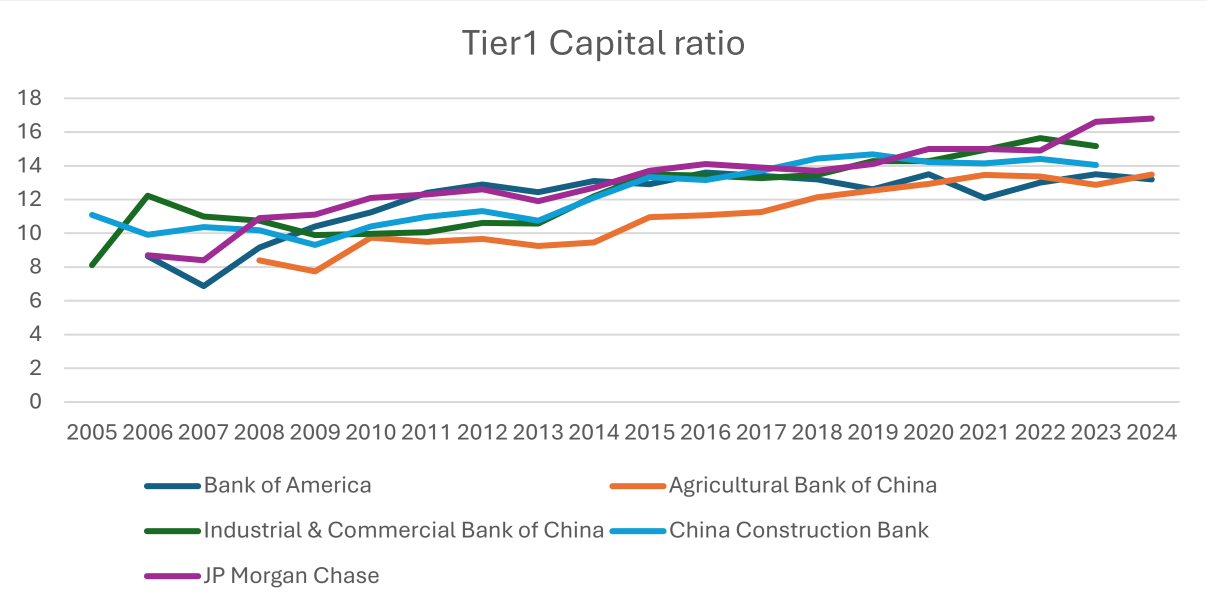
[5] https://www.economie.gouv.fr/facileco/bce-creation-monetaire-dette-publique#
[6] List of members can be consulted on https://www.bis.org/bcbs/membership.htm

more effectively. Figure 6 shows Tier 1 Capital ratio of top 5 banks in the Forbes' Global 2000 ranking 2024[7]. The Tier 1 capital ratio is calculated by dividing a bank's Tier 1 capital by its risk-weighted assets. For example, a Tier 1 capital ratio of 12 means the bank has a strong financial position, with 12% of its risk-weighted assets covered by Tier 1 capital.

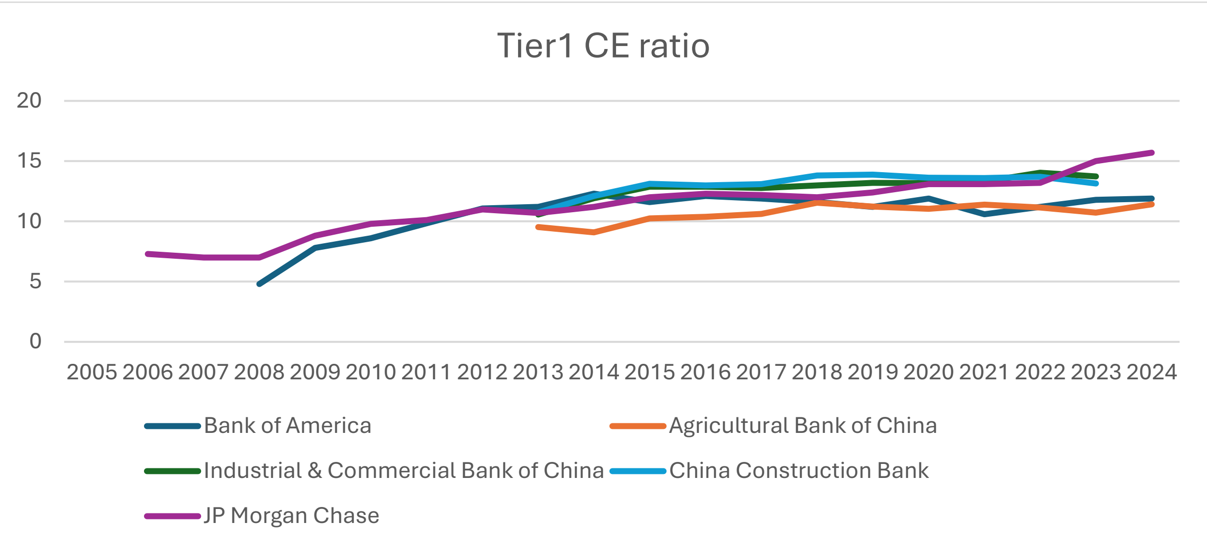
Figure 6 - Tier 1 Capital ratio of top 5 banks in the Forbes' Global 2000 ranking 2024



Source: Bloomberg Data processed by the authors

The Common Equity Tier 1 (CET1) ratio is calculated by dividing a bank's CET1 capital by its risk-weighted asset. For example, a CET1 ratio of 12 means the bank has a strong capital base, with 12% of its risk-weighted assets covered by common equity, indicating financial resilience (see Figure 7).

Figure 7 - Tier 1 Common Equity ratio of top 5 banks in the Forbes' Global 2000 ranking 2024



Source: Bloomberg Data processed by the authors

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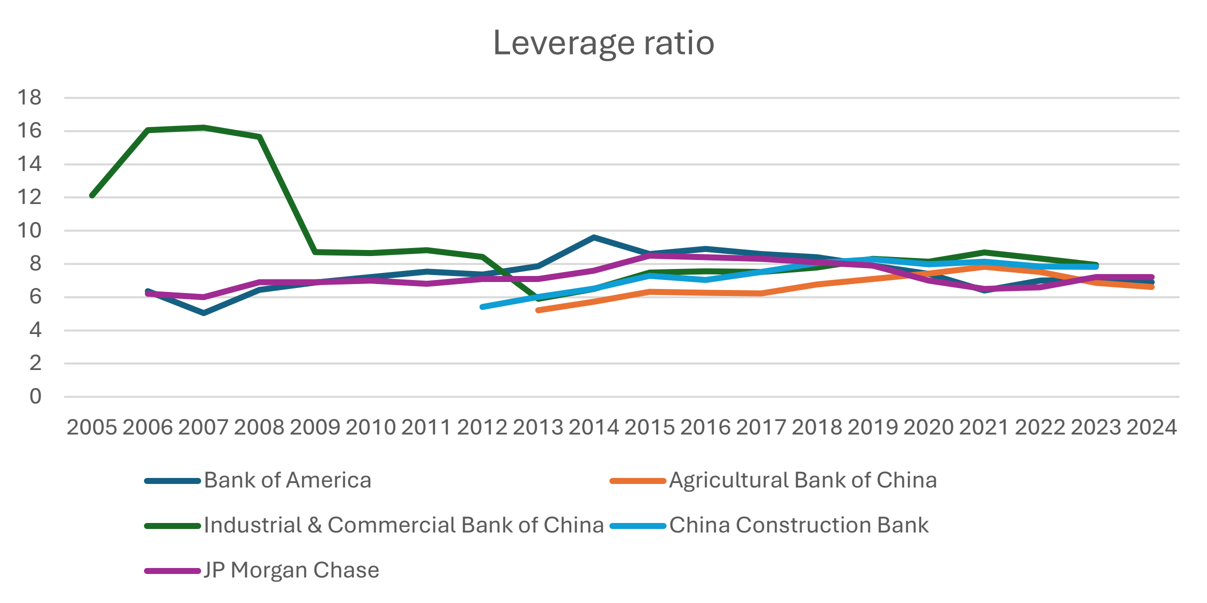
[7] https://www.forbes.com/lists/worlds-best-banks/

Second, a non-risk-based **leverage ratio** was introduced to serve as a backstop to the risk-based capital requirements. This measure limits the extent to which banks can leverage their capital base. The leverage ratio is calculated by dividing a bank's total assets by its equity. For example, a leverage ratio of 7 means the bank has 7 units of assets for every unit of equity, indicating a relatively high level of debt (see Figure 8).

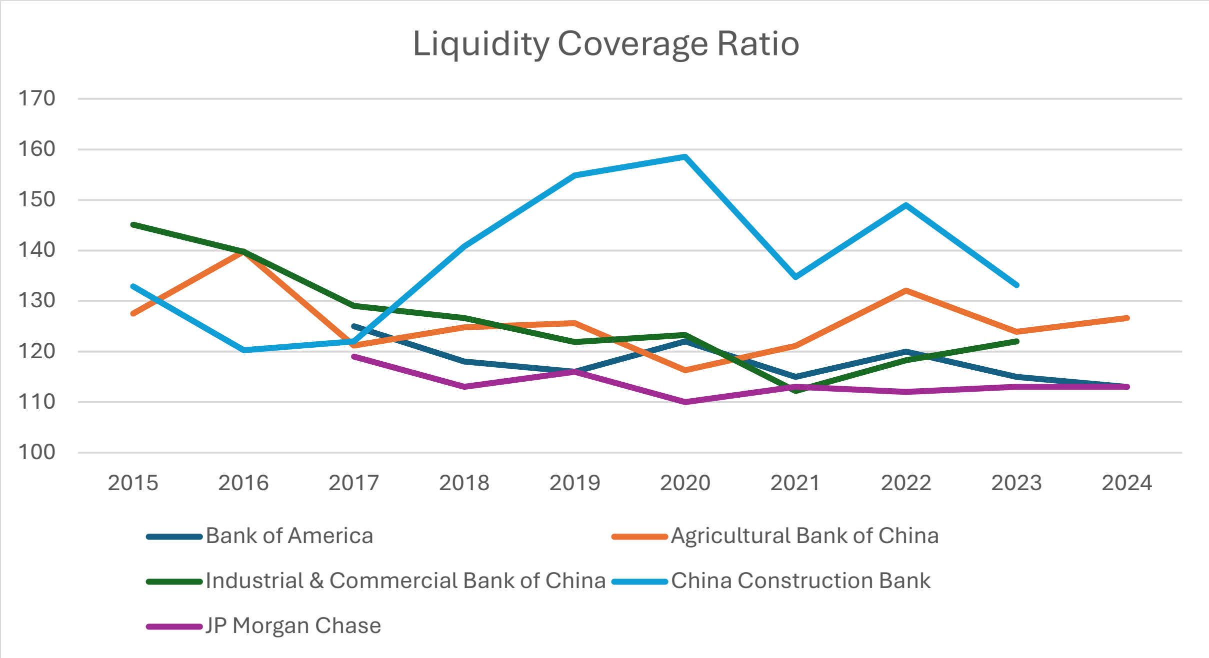
Figure 8 – Leverage of top 5 banks in the Forbes' Global 2000 ranking 2024



Source: Bloomberg Data processed by the authors

Basel III also introduced two **new liquidity ratios**, the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR). The LCR requires banks to hold sufficient high-quality liquid assets to survive a stressful funding scenario of 30 days. LCR is calculated by dividing a bank's high-quality liquid assets by its total net cash outflows over a 30-day period. An LCR of 120 means the bank has 20% more high-quality liquid assets than needed to cover its net cash outflows for 30 days, indicating a very strong liquidity position (see Figure 9).

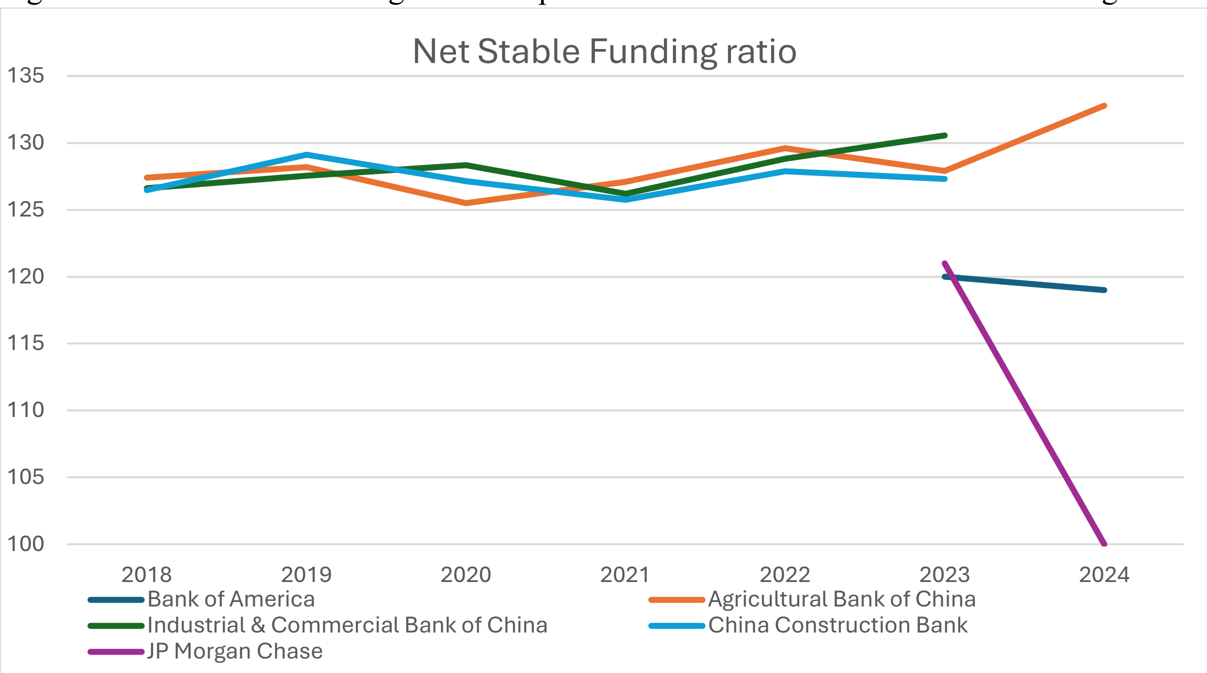
Figure 9 – Liquidity Coverage ratio of top 5 banks in the Forbes' Global 2000 ranking 2024



Source: Bloomberg Data processed by the authors

The NSFR ensures that banks maintain a stable funding profile over a one-year horizon. An NSFR of 120 means the bank has 20% more stable funding than required, indicating a very strong funding structure (see Figure 10).

Figure 10 – Net Stable Funding ratio of top 5 banks in the Forbes' Global 2000 ranking 2024



Source: Bloomberg Data processed by the authors

Furthermore, **countercyclical capital buffers** require banks to accumulate additional capital during periods of high economic growth, which can be drawn down during periods of stress. This measure aims to mitigate the procyclicality of the banking sector.
Finally, Basel III introduced additional capital requirements for globally systemically important banks (**G-SIBs**) to reduce the risk they pose to the global financial system.

These changes aim to create a more resilient banking sector capable of withstanding economic shocks and reducing the likelihood of future financial crises.

4.3. Effects of regulation on banks: a better resilience?

The main Basel III reforms were implemented in 2010-2011. However, the implementation of all Basel III reforms was gradual until December 2023. Their main objectives are to strengthen regulation, prudential supervision, and risk management to ensure the solidity and stability of the financial system[8].

Allen *et al.* (2012) examine the economic impact of these reforms. These authors emphasize several key points. It appears that the long-term impact of these reforms is less than what the banking sector's fears suggested, particularly in terms of credit granting. However, Allen *et al.* (2012) warn the banking sector against excessive rationing of financing to avoid a contraction of credit and a slowdown in economic activity. According to the authors, the implementation of the reforms must be accompanied by changes in the business models of banks. They highlight the importance of constructive dialogue between authorities, banks, and investors throughout the implementation period of the reforms to ensure coordinated adaptation to the new rules across the financial sector. Allen *et al.* (2012) emphasize that the logic of business models must shift from asset-based liability management to liability-based asset management. This type of management would thus favor the stability of financing at the expense of aggressive competition between banks, which is conducive to financing instability (this competition favored the securitization of subprime-type loans, which directly increased the contagion of the financial system during the 2008 financial crisis).

Angelini *et al.* (2015) study the long-term economic impact of the Basel III reforms. Their results support those of Allen et al. (2012) in that the authors highlight that the economic costs of the new regulatory reforms are lower than the estimates.

The study by Gržeta *et al.* (2023) focuses on banking performance following the introduction of Basel II and Basel III reforms. Their study covers a substantial sample of 433 European commercial banks over the period 2006-2015. Their main result shows a differentiated impact of regulation on banking performance depending on the size of the banks. According to the authors, the performance of small banks is negatively affected by prudential regulation, while the performance of medium-sized and large banks is positively affected. The authors emphasize that large banks found it easier to adapt to the new regulatory environment, whereas smaller structures had to bear heavier administrative burdens related to the implementation of the new regulatory framework.

The Basel III reforms prepare banks to be better equipped to absorb economic shock. According to Bini Smaghi (2020), since 2014, eurozone banks have strengthened their Core Tier 1 capital by €176 billion, significantly more than American banks. Eurozone banks have also accelerated the cleanup of their balance sheets. The share of non-performing loans has decreased from 6% of total gross loans to 3%, which is still higher than in the United States, but corresponds to a

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[8] https://www.fsb.org/work-of-the-fsb/implementation-monitoring/monitoring-of-priority-areas/basel-iii/

return to 2007 levels. The strengthening of capital since the 2008 financial crisis has undoubtedly led banks to greater resilience, particularly in facing the COVID-19 crisis. However, within the eurozone, banks alone would not have been able to absorb the economic shock caused by the health crisis. Indeed, the onset of the crisis was marked by an increased demand for loans from businesses. To meet this demand, states relaxed certain rules related to banks' capital requirements to enable them to support economic activity (Bini Smaghi, 2020). According to Knot (2020), the first real test of the new Basel III regulations was the COVID-19 pandemic. Knot (2020) emphasizes that in the event of an external shock like the one induced by the pandemic, it is necessary to reduce the procyclicality of bank credit to avoid widespread rationing of economic financing. The Basel III reforms, by improving the level of capital reserves, helped absorb the initial shocks of the crisis. However, the restrictions on credit issuance linked to strengthened capital requirements could, in times of instability, have the opposite effect. During the COVID-19 pandemic, eurozone states relaxed capital reserve requirements to enable banks to lend money to businesses and avoid economic recession. Knot (2020) therefore emphasizes the need for states to support prudential regulation and be responsive when necessary.

Amadou (2021) used the COVID-19 crisis to implement a macroprudential stress test of credit risk at the level of banks in the WAEMU zone. Three scenarios were analyzed. Amadou's (2021) results show that regardless of the shocks, the banks' Capital Adequacy Ratio (CAR) remained above 8% in 2020, the minimum required by Basel II and Basel III.

Benzizoun and El Haddad (2022) study the implementation of the new regulation in the Moroccan banking sector to identify its impact on the stability indicators of Moroccan banks over the period from 2010 to 2020. The analysis shows a favorable evolution of all the indicators considered during the studied period, except for the year 2020, which was impacted by the COVID-19 pandemic. Despite its repercussions, the banking sector demonstrates good resilience.

Therefore, it seems that the reforms significantly improve banking resilience.

5. Conclusion

The banking sector has faced numerous crises over the past decades, each presenting unique challenges and lessons. From the systemic crisis of 2007/2008 to the more recent COVID-19 pandemic and energy crisis, banks have had to navigate turbulent waters. These crises have underscored the importance of robust risk management practices and the need for comprehensive regulatory frameworks.

Regulation has evolved significantly in response to these crises. Post-2008, we saw the introduction of stricter capital requirements and stress testing protocols aimed at ensuring banks could withstand economic shocks. The COVID-19 pandemic further highlighted the necessity for agile regulatory responses, with central banks and governments implementing unprecedented measures to stabilize the economy. For instance, the European Central Bank launched the Pandemic Emergency Purchase Programme (PEPP) to support financial markets and maintain liquidity. Similarly, during the energy crisis, coordinated actions across Europe were taken to mitigate impacts on the banking sector and broader economy.

Looking ahead, the resilience of banks appears to be stronger than ever. The collaborative efforts of central banks during recent crises demonstrate a commitment to maintaining financial stability.

While challenges remain, the banking sector seems better prepared to face future uncertainties. The lessons learned from past crises, combined with proactive regulatory measures, the responsiveness of monetary policies and states provide a solid foundation for resilience.

The Great Recession of 2007/2009 highlighted the importance of combating systemic risk. The era of 'too big to fail' is long gone, as the past has taught us that systemic risk is precisely borne by very (too?) large structures. Policymakers must find a balance between Keynes' welfare state and Friedman's approach. Human beings can learn from their mistakes, but vigilance remains essential because no crisis truly resembles the previous one.

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