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ΔΙΠΛΩΜΑΤΙΚΗ ΕΡΓΑΣΙΑ
της Φιλιώς Σταμέλου
Α.Μ.: 7340012520021

Regulatory measures to address the risk from the shadow banking system in the E.U. and the U.S.A.

Επιβλέποντες:
α)Καθηγητής Χ. Γκόρτσος

β)Καθηγητής Γ. Δελλής

γ)Αναπλ. Καθηγ. Π. Μουζουράκη

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ABSTRACT

The shadow banking system is defined by the Financial Stability Board (FSB) as "a system of credit intermediation that involves entities and activities outside the regular banking system". This means that the only way to identify the shadow banking activity is based on two intertwined pillars: entities operating outside the regular banking system, examined through the activities they perform and activities that act as important sources of funding of these non-bank entities. In this spectrum, only non-bank intermediaries, which operate in a seemingly similar way with traditional banks meaning performing banking intermediation, creating excessive leverage, maturity and liquidity transformation, and credit risk transfer, can be considered as shadow banks because of the fact that they pose threats, risks and adverse effects to financial stability, and especially, because of the danger of a regulatory arbitrage happening. That is why these activities contributed in the outbreak of the Global Financial Crisis in 2007-2009, especially in the USA, where it was blamed by the U.S. Treasury Secretary Timothy Geithner, later President and CEO of the New York Federal Reserve Bank, as the main reason for the "freezing" of the credit markets. Indeed, shadow banks are not traditional, commercial banks and thus are not subject to the same regulation and supervision, nor central bank facilities or safety net arrangements, and that leads to high potentiality of risks and vulnerability. In particular, these financial intermediaries (i.e. money market funds, private equity funds, hedge funds, securitization vehicles, securities lenders, and structured investment vehicles, investment banks and mortgage brokers) which operate the shadow-banking activities, mostly in tax heavens, facilitate the creation of huge amount of credit across the global financial system. In contrast with commercial banks, they do not take deposits to lend out to borrowers, but the credit they give is based on short –term funds that come from investors. That is where the problem begins. Since their funds are provided by asset-backed commercial paper or by the repo market, it is clear that credit and liquidity risks are high and if not regulated and managed, can cause significant damage to the financial system and ,of course, to the borrowers of the shadow banking system. However, the entities and participants of this system are numerous, the percentage of the total financial system is remarkable, its assets' worth is counted in trillions and at the same time is highly unregulated, making it appealing and dangerous at the same time. However, is this infamous yet profiting industry fairly blamed for all the failures and inefficiencies? How can we make it work so that we gain all the profit and succeed to manage and minimize the risks? How can the financial sector and its participants trust a system that is called "shadow" anyway? We are going to examine all these in the following pages.

ΠΕΡΙΛΗΨΗ

Το σκιώδες τραπεζικό σύστημα ορίζεται από το Συμβούλιο Χρηματοπιστωτικής Σταθερότητας (FSB) ως "σύστημα πιστωτικής διαμεσολάβησης που περιλαμβάνει οντότητες και δραστηριότητες εκτός του κανονικού τραπεζικού συστήματος". Αυτό σημαίνει ότι ο μόνος τρόπος για τον εντοπισμό της σκιώδους τραπεζικής δραστηριότητας βασίζεται σε δύο αλληλένδετους πυλώνες: τις οντότητες που λειτουργούν εκτός του κανονικού τραπεζικού συστήματος, που εξετάζονται μέσω των δραστηριοτήτων που εκτελούν και των δραστηριοτήτων που λειτουργούν ως σημαντικές πηγές χρηματοδότησης αυτών των μη τραπεζικών οντοτήτων. Σε αυτό το πλαίσιο, μόνο οι μη τραπεζικοί μεσάζοντες, οι οποίοι λειτουργούν με φαινομενικά παρόμοιο τρόπο με τις εμπορικές τράπεζες ,δηλαδή αυτόν της τραπεζικής διαμεσολάβησης, δημιουργώντας υπερβολική μόχλευση, μετασχηματισμούς διάρκειας και ρευστότητας και μετακύλιση του πιστωτικού κινδύνου, μπορούν να θεωρηθούν ως σκιώδεις τράπεζες, λόγω του γεγονότος ότι θέτουν απειλές, κινδύνους και δυσμενείς επιπτώσεις στη χρηματοπιστωτική σταθερότητα, και ιδίως, λόγω του κινδύνου να συμβεί ρυθμιστικό αρμπιτράζ. Για αυτό το λόγο συνέβαλαν στο ξέσπασμα της παγκόσμιας χρηματοπιστωτικής κρίσης το 2007-2009, ειδικά στις ΗΠΑ, όπου κατηγορήθηκαν από τον υπουργό Οικονομικών των ΗΠΑ, Timothy Geithner, μετέπειτα πρόεδρο και διευθύνοντα σύμβουλο της Federal Reserve Bank της Νέας Υόρκης, ως ο κύριος λόγος για το «πάγωμα» των πιστωτικών αγορών. Πράγματι, οι σκιώδεις τράπεζες δεν είναι παραδοσιακές, εμπορικές τράπεζες και επομένως δεν υπόκεινται στις ίδιες ρυθμίσεις και στην ίδια εποπτεία, ούτε στις διευκολύνσεις της κεντρικής τράπεζας ή προβλέψεις του τραπεζικού «διχτυού ασφαλείας», και αυτό οδηγεί σε υψηλή πιθανότητα κινδύνων και ευπάθειας. Ειδικότερα, οι μεσάζοντες χρηματοπιστωτικοί οργανισμοί (π.χ. Αμοιβαία κεφάλαια της χρηματαγοράς , ιδιωτικά επενδυτικά κεφάλαια, αμοιβαία κεφάλαια αντιστάθμισης κινδύνου, οντότητες για τιτλοποιήσεις , δανειστές κινητών αξιών και φορείς για δομημένες επενδύσεις, τράπεζες επενδύσεων και μεσίτες στεγαστικών δανείων) που παρέχουν πίστωση και ρευστότητα, ασκούν δραστηριότητες σκιώδους τραπεζικής, κυρίως σε «φορολογικούς παραδείσους», διευκολύνοντας τη δημιουργία τεράστιου ποσού πίστωσης σε όλο το παγκόσμιο χρηματοπιστωτικό σύστημα. Σε αντίθεση με τις εμπορικές τράπεζες, δεν λαμβάνουν καταθέσεις ώστε να χρηματοδοτούν τις πιστώσεις, αλλά οι πιστώσεις που δίνουν βασίζονται σε βραχυπρόθεσμα κεφάλαια που προέρχονται από επενδυτές. Εκεί ξεκινά το πρόβλημα. Δεδομένου ότι τα χρήματά τους παρέχονται από χρεόγραφα εξασφαλισμένα με περιουσιακά στοιχεία ή από την αγορά συμφωνιών επαναγοράς, είναι σαφές ότι οι πιστωτικοί κίνδυνοι και οι κίνδυνοι ρευστότητας είναι υψηλοί και, εάν δεν ρυθμίζονται και διαχειρίζονται, μπορούν να προκαλέσουν σημαντική ζημιά στο χρηματοπιστωτικό σύστημα και, φυσικά, στους δανειολήπτες του σκιώδους τραπεζικού συστήματος. Ωστόσο, οι οντότητες και οι συμμετέχοντες σε αυτό το σύστημα είναι πολυάριθμοι, το ποσοστό του συνολικού χρηματοπιστωτικού συστήματος είναι αξιοσημείωτο, η αξία του ενεργητικού του υπολογίζεται σε τρισεκατομμύρια και ταυτόχρονα είναι εξαιρετικά ανεξέλεγκτη, καθιστώντας το ελκυστικό και επικίνδυνο ταυτόχρονα. Ωστόσο, ευθύνεται δίκαια αυτή η διαβόητη αλλά κερδοφόρα βιομηχανία για όλες τις αποτυχίες και τις αναποτελεσματικότητες; Πώς μπορούμε να το κάνουμε να λειτουργήσει έτσι ώστε να έχουμε όλο το κέρδος και να καταφέρουμε να διαχειριστούμε και να ελαχιστοποιήσουμε τους κινδύνους; Πώς μπορεί ο χρηματοοικονομικός τομέας και οι συμμετέχοντες του να εμπιστεύονται ένα σύστημα που ούτως ή άλλως ονομάζεται «σκιώδες»; Όλα αυτά θα τα εξετάσουμε στις επόμενες σελίδες.

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INTRODUCTION

The shadow banking system, even though the Financial Stability Board (FSB) recognizes it as an official alternative to the traditional bank loans and its contribution to the overall economic activity is of great importance, became widely known for all the wrong reasons. It contributed in the outbreak of the Global Financial Crisis in 2007-2009, especially in the USA, where it was blamed by the U.S. Treasury Secretary Timothy Geithner, later President and CEO of the New York Federal Reserve Bank, as the main reason for the "freezing" of the credit markets. Indeed, shadow banks are not traditional, commercial banks and thus are not subject to the same regulation and supervision, nor central bank facilities or safety net arrangements, and that leads to high potentiality of risks and vulnerability. In particular, financial intermediaries (i.e. money market funds, private equity funds, hedge funds, securitization vehicles, securities lenders, and structured investment vehicles, investment banks and mortgage brokers) which provide credit and liquidity, operate shadow-banking activities, mostly in tax heavens, facilitating the creation of huge amount of credit across the global financial system. In contrast with commercial banks, they do not take deposits to lend out to borrowers, but the loans they give are based on short –term funds that come from investors. That is where the problem begins. Since their funds are provided by asset-backed commercial paper or by the repo market, it is clear that credit and liquidity risks are high and if not regulated and managed, can cause significant damage to the financial system and ,of course, to the borrowers of the shadow banking system. However, the entities and participants of this system are numerous, the percentage of the total financial system is remarkable, its assets' worth is counted in trillions and at the same time is highly unregulated, making it appealing and dangerous at the same time. Hence, is this infamous yet profiting industry fairly blamed for all the failures and inefficiencies? How can we make it work so that we gain all the profit and succeed to manage and minimize the risks? How can the financial sector and its participants trust a system that is called "shadow" anyway? We are going to examine all these in the following pages.

The thesis starts with the **Chapter 1** describing the characteristics and elements of shadow banking, defining the main entities involved and their funding activities, as well as the historical evolution of shadow banking sector. Subsequently, data will be provided about the importance and size of the system mainly in E.U. and in the U.S.A. Chapter I is completed with the analysis of the advantages and disadvantages; this will lead to **Chapter 2**, where the focus will be on the attempts of regulation (in E.U. and in the U.S.A.) in order to eliminate the risks and maximize the benefits. Finally, the conclusion of the whole research will take place in **Chapter 3.**

CHAPTER 1: DEFINING THE SHADOW BANKING SYSTEM

1.1 Definition

The term "shadow banking" remains ambiguous on its understanding and definition. It was first introduced in a 2007 speech at the annual financial symposium of the Federal Reserve Bank by Paul McCulley, executive director of PIMCO (a global investment management firm focusing on active fixed income management). He claims it to be the whole alphabet soup of levered up non-banking investment conduits, vehicles and structures"[1]. The reference was mainly about U.S. nonbank financial institutions that engaged in "maturity transformations"[2], as they raise short-term funds in the money markets and use them to buy assets with longer-term maturities (which creates liquidity for the saver but exposes the intermediary to duration and credit risks) without explicit access to central liquidity of public sector guarantees. Apart from maturity transformation, they also perform credit transformation, which refers to the enhancement of the credit quality of debt issued by the intermediary through the use of priority of claims. Through its assets, the financial institution assumes the risks on behalf of its savers and creditors, in particular credit risk. Liquidity transformation also takes place, which refers to the use of liquid instruments to fund illiquid assets[3], as well as leverage, which is used extensively and increases profits (return on equity) by relying on debt. These bank like entities work as a channel between investors and countries/companies to gain an investment return, much how the bank acts as an intermediary between savers and borrowers to earn a predetermined interest rate, by raising funds from investors and then lending this money to countries/companies. This is exactly what ***banking intermediation*** is; banks transform their financial sources (liabilities) into assets, mainly through loans with different characteristics. Shadow banking performs all these financial intermediary activities (credit risk transfer, maturity transformation and or liquidity and leverage) in a bank-a-like way, yet operating outside the regulatory banking framework and therefore it is not subject to the constraints and not covered by the guarantees offered to the banks, but it is exposed to a major liquidity risk.

Defining the shadow banking activity, as said in the beginning, can be really challenging. There has been many attempts to this direction, and there are a few worth to be mentioned: "market-funded collateral intermediation activities, where an entity or a chain of specialized institutions issue deposit-like instruments to fund credit extension to the financial and non-financial sector" (Jackson & Matilainen, 2012); "market-based financing or alternative market financing to be employed instead" (FSB, 2013a); "entities with liabilities supposedly redeemable at par but without a government guarantee, and instruments that trade as if they have a zero performance risk" (Kane, 2014).

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[1] **McCulley, P. (2009):** *"The Shadow Banking System and Hyman Minsky's Economic Journey". PIMCO Global Central Bank Focus, Available at: http://media.pimco.com/Documents/GCB%20Focus%20May%2009.pdf*

[2] **Kodres E. Laura (2013)**: *What Is Shadow Banking? FINANCE & DEVELOPMENT, Vol. 50, No. 2 https://www.imf.org/external/pubs/ft/fandd/2013/06/pdf/basics.pdf*

[3] **Tobias Adrian Adam B. Ashcraft (2012)**: *Shadow Banking: A Review of the Literature, Staff Report No. 580, Federal Reserve Bank of New York*

On the other side, the **European Systemic Risk Board (ESRB)** calls the risks emerging from the activities of the entities of shadow banking "*EU non-bank financial intermediation* (NBFI) *risks"*[4], and monitors them by splitting them in two areas, conducting namely an entity-based and an activity-based monitoring. As a result of these mapping, the following categories of entities appear:

• Investment funds, namely money market funds (MMFs), bond funds, mixed funds, equity funds, hedge funds, real estate funds, ETFs, private equity funds and private debt funds.

• Other financial institutions (OFIs), namely financial vehicle corporations (FVCs), special-purpose entities (SPEs), security and derivative dealers (SDDs) and financial corporations engaged in lending (FCL).[5]

However, this approach of classification of entities is a lot different from other approaches by other supervisors or authorities.

In the EBA guidelines, the EBA "assessed the shadow banking system, noting its complementary role of the traditional banking sector by expanding access to credit in support of economic activity or by supporting market liquidity, maturity transformation and risk sharing, thereby promoting growth in the real economy."[6]

The global financial crisis of 2007-2009, however, made it mandatory that regulatory and supervisory measures should be taken, firstly, at international level. This was achieved through the coordination of the intergovernmental forum G20 and the **Financial Stability Board (FSB).** Consequently, FSB in 2011 publishes report, which is the first comprehensive international effort to deal with shadow banking, as well as the first official definition of it: "a system of credit intermediation that involves entities and activities outside the regular banking system".[7] This means that the only way to identify the shadow banking activity is based on two intertwined pillars: entities operating outside the regular banking system, examined through the activities they perform (**Under 1.1.1)** and activities that act as important sources of funding of these non-bank entities **(Under 1.1.2)**. In this aspect, **European Commission** issued the 2012 Green Paper "on Shadow Banking" in order to analyze –yet not in exhaustive way, as shadow banking evolves very rapidly- the possible shadow banking entities and activities. However, that is a broad definition and some entities can be involved that do not constitute a systemic risk. Thereby FSB goes further and gives more details stating that shadow banking entails all the above mentioned, but in addition it raises "systemic risk concerns". As a result, only non-bank intermediaries, which operate in a seemingly similar way with traditional banks, creating excessive leverage, maturity and liquidity transformation, and credit risk transfer, can be considered as shadow banks because of the fact that

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[4] **European Systemic Risk Board (2020):** *NBFI Monitor No 5, EU Non-bank Financial Intermediation Risk Monitor 2020*

[5] **European Banking Authority (2021)**: *Consultation Paper on Draft Regulatory Technical Standards on criteria for the identification of shadow banking entities under Article 394(4) of Regulation (EU) No 575/2013*

[6] **European Banking Authority (2021)**: *Consultation Paper on Draft Regulatory Technical Standards on criteria for the identification of shadow banking entities under Article 394(4) of Regulation (EU) No 575/2013*

[7] **Financial Stability Board (2011)**: *Recommendations on Shadow Banking: Strengthening Oversight and Regulation*

they pose threats, risks and adverse effects to financial stability, and especially, because of the danger of a regulatory arbitrage happening.[8]

1.1.1 Entities

The activities, institutions, and vehicles that make up the shadow banking system are always changing. The examples in this section are by no means exhaustive, but they do highlight aspects of the shadow banking system that have been and continue to be significant. *Investment banks, mortgage lenders, money market funds, insurance firms, hedge funds, private equity funds, and payday lenders* are all examples of credit sources that are major and rising in the economy. However, article 394(4)(b) of the *CRR*[9] states that, "entities that are subject to solvency or liquidity requirements similar to those imposed by this Regulation and Directive 2013/36/EU should be entirely or partially excluded from the obligation to be reported referred to in paragraph 2 on shadow banking entities". Despite that, regulations in the Union that address solvency and liquidity concerns have been studied in order to identify shadow-banking companies by both FSB and ESRB when approaching this matter.

Regarding to entities that channel funding from savers to investors through a range of securitization and secured funding techniques, the following can be mentioned: [10]

1. ***<u>Special purpose entities (SPE),</u>*** also known as special purpose vehicles, perform liquidity and/or maturity transformations. They are subsidiaries created by a parent company in order to isolate financial risk or securitize assets and as they are separate companies with independent legal status, they often may not appear on the parent company's balance sheet as equity or debt. The operations of the SPE are limited to the acquisition and financing of specific asset, and it can act as a counterparty for swaps and other credit-sensitive derivative products.
   An example of SPE is a *securitization vehicle*. *Securitization* is the process through which an issuer creates a marketable financial instrument by combining or pooling many financial assets into a single entity. This group of repackaged assets is then sold to investors by the issuer, which helps increasing market liquidity, brings capital to the issuer and offers opportunities to the investor. This procedure is feasible through the creation of a *special purpose vehicle/entity*, which purchases, or receives by way of capital contributions, sale or other transfer, assets from the company and obtains financing for such assets from third parties, insulating itself from the credit risk of the parent company.

   Types of securitization vehicles, which are of concern in the present thesis, are:
   i. *ABCP conduits*: An *asset-backed commercial paper* (ABCP)[11] is a short-term money-market security with a maturity date that is typically between 90 and 270 days, issued typically by the financial institution itself, in order to fund short-term financing needs. These notes are backed by collateral, which often consists of the

[8] **Lene Elisabeth Gridseth (2014):** *SHADOW BANKING: A European perspective, Supervisor: Michael Kisser, Master Thesis in Financial Economics, Norwegian School of Economics*
[9] **European Parliament and Council (2013):** Regulation (EU) No 575/2013 of 26 June 2013 *on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012*
[10] **European Commission (2012)**: *Green Paper on Shadow Banking, 102 final, p.4*
[11] https://www.investopedia.com/terms/a/asset_backed_commercial_paper.asp

corporation's expected future payments or receivables, and might include payments the corporation expects to collect from loans it has made. The issuance of these securities is combined with the use of a special purpose vehicle (SPV) or conduit, which is set up by the sponsoring financial institution. Structured to be bankruptcy remote and legally separate from its sponsor, they are a means of off-balance sheet funding for the seller-originator and sponsor, allowing the sponsor to avoid capital requirements normally imposed on financial institutions. The financial institutions and large nonbank corporations looking to enhance liquidity may sell receivables to an SPV or other conduits, which, in turn, will issue them to its investors as asset-backed commercial paper. As the ABCP is backed by anticipated receivables cash inflows, the originators are supposed to send the funds to the conduit, which is responsible for disbursing the funds generated by the receivables to the ABCP noteholders, as the receivables are collected. When the collateralized paper matures, the investor receives a principal payment that is funded either from the collection of the credit's assets, from the issuance of new ABCP, or by accessing the credit's liquidity facility. The likelihood of liquidity risk is one major concern about ABCPs and related assets. If the market value of the underlying assets falls, the ABCP's safety and value may suffer as well. On the contrary, *commercial paper* (CP) is a money market security issued by large corporations to raise money to meet short-term obligations, and acts as a promissory note that is backed only by the high credit rating of the issuing company. Thus, only enterprises with outstanding credit ratings from a reputable credit rating agency will be able to sell commercial papers at a reasonable price, because typical commercial papers are not secured by collateral.

ii. *Special (or Structured) Investment Vehicles (SIV)*:[12] A Special Investment Vehicle (SIV) is a pool of investment assets that earns profit on credit spreads between short-term debt and long-term (structured) finance products such as asset-backed securities (ABS), mortgage-backed securities (MBS) and the less risky tranches of collateralized debt obligations (CDOs). This activity includes the issuing of commercial paper of varying maturities and the use of leverage, in means of reissuing commercial paper, in order to repay maturing debt. A SIV administered by an asset manager such as a hedge fund, will issue asset-backed commercial paper (ABCP) to fund the purchase of these securities. For example, a SIV may borrow money in the wholesale market at 2% and then invest it in structured products for a return of 5% and earn a profit of 3%.[13] SIVs are typically heavily leveraged to magnify returns and borrow on a very short-term basis, leaving them vulnerable to money market liquidity.

iii. *and other Special Purpose Vehicles (SPV)*, which are separate legal entities, with their own assets and liabilities, as well as their own legal status, created for the isolation of financial risks (risk sharing),for the transfer assets from the company-creator by selling them to the SPV, and for the sake of securitization of loans.

[12] https://www.investopedia.com/terms/s/structured-investment-vehicle.asp
[13] https://www.wallstreetoasis.com/finance-dictionary/what-is-a-special-investment-vehicle-siv

2. ***Money Market Funds*** [14](MMFs) and other types of investment funds or products with deposit-like characteristics, which make them vulnerable to massive redemptions ("runs"). The *money market* refers to trading in very short-term debt investments such as overnight reserves or commercial paper. At the retail level, it includes money market mutual funds bought by individual investors. A *money market fund* is a kind of mutual fund that invests in highly liquid, near-term instruments such as cash, cash equivalent securities, and high-credit-rating, debt-based securities with a short-term maturity. These money market instruments intend to offer investors high liquidity with a very low level of risk, fixed income and guarantee holders a 100% reimbursement of the amount invested. They are the lowest-volatility types of investments and that is because the duration of money market mutual funds is so short —securities that mature in 397 days or less— that they are typically subject to less interest rate risk than longer-maturing bond fund investments. Unlike typical bank certificates of deposit (CDs) or savings accounts, money market mutual funds are not guaranteed by an insurance mechanism or scheme.

3. ***Investment funds***,[15] including Exchange Traded Funds (ETFs) that provide credit or are leveraged. An investment fund is a financial vehicle (also known as a collective investment scheme or "CIS") that pools money contributed by a group of individuals to invest in derivatives, fixed-income securities, shares and other financial instruments, while each investor retains ownership and control of his own shares, as these vehicles diversify the investments. In this way, consumers are allowed to invest in markets that they would otherwise be unable to access on their own. The players involved in these activities are: investors, management companies and depositaries. Investors must first acquire units in a fund they choose and are able to sell ("redeem") the units or shares they own whenever they want. A fund manager oversees the fund and decides which securities it should hold, in what quantities and when the securities should be bought and scans the market for the best profit possibilities, providing a broader selection of investment opportunities, greater management expertise, and lower investment fees. The depositary on the other hand, which can be an organization, bank, or institution, holds securities and assists in the trading of securities, providing security in the process, as its goal is the storage and safeguarding of the units. Types of investment funds include mutual funds, exchange-traded funds, money market funds, and hedge funds.
   i. *Mutual fund*[16] is a form of investment vehicle that consists of a portfolio of stocks, bonds, or other securities administered by professional managers who aim to generate capital gains or income for the fund's owners by allocating the fund's assets. As a result, each stakeholder shares in the fund's gains and losses proportionately. Mutual funds give small or individual investors access to diversified, professionally managed portfolios at a low price. Open-end mutual funds hold the majority of investment fund assets. As money is added to the pool, these funds issue new shares, and as money is withdrawn, shares are retired. On the

[14] https://www.fidelity.com/learning-center/investment-products/mutual-funds/what-are-money-market-funds
[15] https://www.santander.com/en/stories/whats-an-investment-fund
[16] https://www.investopedia.com/terms/m/mutualfund.asp

other hand, closed-end funds, which trade more similarly to stocks, are a publicly traded investment entities that invest in stocks and bonds. The fund raises assets largely through an initial public offering in order to meet its investing objectives. The term "closed" refers to the fact that once the money has been raised, the fund sponsor normally has no more shares available and the issuance of new shares is no longer open to investors.

ii. *Exchange-traded fund*[17] is a basket of securities that can be purchased or sold on an exchange just like stocks. An ETF can be structured to track anything from the price of an individual commodity to a large and diverse collection of securities, even specific investment strategies. As a marketable security it has an associated price that allows it to be easily bought and sold. ETF share prices fluctuate all day as it is bought and sold; this is different from mutual funds that only trade once a day after the market closes. This type of funds emerged as an alternative to mutual funds for traders who wanted more flexibility with their investment funds, because compared to the latter, ETFs tend to be more cost effective and more liquid.

iii. *Hedge funds*[18] are alternative, private investment vehicles that are distinct from mutual funds or ETFs, using pooled funds and employing different strategies, with the goal of generating high returns. These funds, whose structure is typically a limited partnership, are available only to a limited number of accredited and qualified investors, meaning individuals with certain high annual income. Hedge funds are often managed by institutional investors who employ a variety of atypical investing methods with the primary purpose of reducing risk through the use of nontraditional portfolio management techniques such as shorting, leverage, arbitrage, swaps. Although "hedging" symbolizes the practice of attempting to limit or reduce exposure to risk, by diversifying the investments in the portfolio, and thus not completely depending on one asset class, the goal of most hedge funds managers is to maximize return on investment, by investing in riskier assets, like derivatives such as futures and options. As a result there are some unique risks of hedge funds like the exposure to potentially huge losses, because of the concentrated investment strategy, the locked up investors' money for a period of years, and the excessive use of leverage, or borrowed money, which can also lead to significant losses. For example, leverage can wipe out hedge funds, as it happened in the 2008 financial crisis. That is the reason why this practice has strongly been associated with a number of issues in the global financial stability, in the recent years, during its increasing activity and the growing number of hedge funds.

iv. *Private equity funds*[19], also known as Private Equity, are an alternative form of private financing which consist of capital and are not listed on a public exchange. Institutional and retail investors provide these pools of capital, which are invested directly in private companies that represent an opportunity for a high rate of return,

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[17] https://www.investopedia.com/terms/e/etf.asp
[18] https://pitchbook.com/blog/hedge-funds-101-what-are-they-and-how-do-they-work
[19] https://corporatefinanceinstitute.com/resources/knowledge/trading-investing/private-equity-funds/

and can be utilized to fund new technology, make acquisitions, expand working capital, and to bolster and solidify a balance sheet of a company. Specifically, private equity capital is raised from institutional and retail investors who can afford to invest huge sums of money for extended periods of time due to the long holding periods of private equity funds. In addition, private equity firms make money by charging management and performance fees from investors in a fund. The ease of access to alternative forms of finance for entrepreneurs and firm founders is one of the benefits of private equity, as is the lack of quarterly performance pressures. However, these advantages are offset by the fact that private equity valuations are not set by market forces. Considering the forms that a private equity can take, they can vary from complex leveraged buyouts (meaning the buy out of a company by a private equity firm, financed through debt, which is collateralized by the target's operations and assets) to venture capital (funding of the companies which are still in the initial stages of formation and do not have access to traditional financing means or to financial markets).

4. ***Finance companies and securities entities*** providing credit or credit guarantees, or performing liquidity and/or maturity transformation without being regulated like a bank. Some examples are:
   i. *Payday lenders* are financial firms offering small, short-term loans designed to provide credit to consumers who might otherwise not be able to get loans. A payday loan is usually repaid in a single payment on the borrower's next payday, or when income is received from another source such as a pension or social security[20] and does not require any collateral (unsecured personal loan). These type of loans charge high interest rates for short-term immediate credit and are typically based on how much the consumer earns. Numerous laws have been put in place over the years in order to regulate these high fees, interest rates and hidden provisions. That is why these loans are considered "predatory lending"[21], as they can create a debt trap for consumers.

   ii. *A mortgage company*[22] is a business with the principal activity of providing, servicing (means that the company may purchase mortgages from the original mortgage lender and service the mortgage loan) or originating mortgage loans for residential or commercial property. Seeking to borrow from a mortgage lender is a preferable activity by homeowners to reduce their interest rate, lower their monthly payment, or speed up their repayment period. A mortgage company (e.g. Quicken loans, Better, New American Funding) may be a bank, a credit union, a trust company or other financial institution (any mortgage lender that is not a bank or credit union providing mortgage loans). In exchange for the loan, mortgage lenders charge interest, which is compounded monthly and paid during the loan's life. The

[20] https://www.consumerfinance.gov/ask-cfpb/what-is-a-payday-loan-en-1567/
[21] https://www.investopedia.com/terms/p/payday-loans.asp
[22] https://themortgagereports.com/61542/what-is-a-lender-mortgage-lenders-explained

provision of the loan is based on the lender's evaluation of the borrowers' financial situation, and their probability of default. This is one of the main factors that led to the subprime mortgage crisis of 2007-2008, as mortgage companies were not backing most of the loans, they had few assets of their own, so when the housing markets dried up, their cash flows vanished swiftly. There are many types of mortgage lenders: *mortgage bankers* (they borrow money at short-term rates from warehouse lenders to fund the mortgages they issue to consumers and after a loan closes they sell it on the secondary market to repay the short-term note), *retail lenders* (they provide mortgages directly to consumers), *direct lenders* (they originate their own loans using their own funds or borrow them from elsewhere), *portfolio lenders* (they fund borrowers' loans with their own money and set their own borrowing guidelines and terms), *wholesale lenders* (they don't work directly with consumers and usually sell their loans on the secondary market shortly after closing), *correspondent lenders* (they are the initial lenders that make the loan and might even service the loan, collect a fee from the loan when it closes, and then immediately try to sell the loan to a sponsor to make money and eliminate the risk of default), *warehouse lenders* (help other mortgage lenders fund their own loans by offering short-term funding), *hard money lenders* (are often the last resort and are usually private companies or individuals with significant cash reserves and their loans generally must be repaid in a few years. If the borrower defaults, the lender seizes the home). M*ortgage broker*s are not considered mortgage companies, since they do not directly lend funds, but deal with the mortgage lender on behalf of the consumer, working as an intermediary between consumers and lenders.

iii. An *investment bank*[23] or financial institution is a financial services company that acts as an intermediary between investors in the financial markets (who have money to invest) and corporations (who require capital to grow and run their businesses) in large and complex financial transactions, helping individuals or organisations raise capital, providing financial consultancy services to them and helping new firms to go public. When a startup firm prepares for an initial public offering IPO or when a corporation merges with a competitor, an investment bank (e.g. JPMorgan Chase, Goldman Sachs, Morgan Stanley, Citigroup) is actively involved, by either buying all the available shares at a price estimated by their experts and resell them to public or selling shares on behalf of the issuer and taking commission on each share. The more connections a bank has in the global financial sector, the more probable it is to benefit from matching buyers and sellers, particularly for one-of-a-kind transactions. Investment bank clients include corporations, pension funds, other financial institutions, governments, and hedge funds. The services provided by the investment banks include underwriting (working between investors and companies that want to raise money or go public via the IPO process in the primary market), mergers and acquisitions (advisory roles for both buyers and sellers of businesses), sales and trading (matching up buyers and sellers of securities in the secondary market), equity research (helps

[23] https://corporatefinanceinstitute.com/resources/careers/jobs/investment-banking-overview/

investors make investment decisions and supports trading of stocks), asset management, commercial banking, and retail banking. Finally, investment banks must maintain what is known as a Chinese wall between divisions to prevent information exchange that would allow one side or the other to profit unfairly at the expense of its own customer.

iv. A *broker-dealer*[24] (B-D) is a financial entity in the business of buying and selling securities on behalf of clients, but may also trade for itself. When a brokerage executes orders on behalf of its clients, it functions as a broker (or agent), whereas when it trades for its own account, it acts as a dealer (or principal). The services they provide include investment advice to customers, supplying liquidity through market-making activities, facilitating trading activities, publishing investment research, and raising capital for companies. A wirehouse (non-independent) broker ,or a business that sells its own goods to clients, and an independent broker-dealer, or a firm that sells products from outside sources, are the two types of broker-dealers.

5. ***Insurance and reinsurance undertakings***, which issue or guarantee credit products, based on the policy of hedging against the risk of financial losses and of underwriting these risks, while a reinsurer is a company that provides financial protection to insurance companies.

1.1.2. Activities

The *Commission Communication on shadow banking*[25] states that shadow banking is "a system of credit intermediation that involves entities and activities outside the regular banking system". However, as the creation of credit across the world by unregulated -or merely regulated- non bank intermediaries is expanding year by year and the mapping of these entities can be problematic, is safer to address them through the detection of the *activities* and functions they are engaged to.[26] In this way, the monitoring of developments over time is easier, as well as the decreasing of the scope for regulatory arbitrage is feasible and most importantly having the same approach of defining these terms will prevent diverging application across in the Union.

Shadow banking entities normally engage in the following bank-like activities:[27]

1. accepting funding with deposit-like characteristics;
2. performing maturity and/or liquidity transformation;
3. undergoing credit risk transfer; and
4. using direct or indirect financial leverage.

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[24] https://www.investopedia.com/terms/b/broker-dealer.asp
[25] **European Commission (2013)**: Communication to the Council and the European Parliament **-** *Shadow Banking – Addressing New Sources of Risk in the Financial Sector*
[26] **Klára Bakk-Simon, Stefano Borgioli, Celestino Giron, Hannah Hempell, Angela Maddaloni, Fabio Recine and Simonetta Rosati (2012):** *Shadow banking in the euro area, an overview, Occasional Paper series No 133, European Central Bank, 2012*
[27] *Green Paper on Shadow Banking – Frequently asked questions, MEMO/12/191*
Brussels, 19 March 2012

Therefore, credit intermediation is decomposed into a network of wholesale-funded, securitization-based lending through a chain of nonbank financial intermediaries in a procedure with several stages. Specifically, there are *seven steps of shadow banking credit intermediation*[28]*:*

1) loan origination by finance companies,

2) loan warehousing by single- and multi-seller conduits and is funded through asset backed commercial paper,

3) pooling and structuring of loans into term asset-backed securities (ABS) by broker-dealers,

4) ABS warehousing through trading books, which is funded through repos, total return swaps, or hybrid and repo conduits,

5) pooling and structuring of ABS into collateralized debt obligation, which is also conducted by broker-dealers,

6) ABS "intermediation", which is performed by limited-purpose finance companies (LPFCs), structured investment vehicles (SIVs), securities arbitrage conduits, and credit hedge funds, which are funded in a variety of ways including, for example, repo, ABCP, MTNs, bonds, and capital notes, and

7) wholesale funding for the financing of all the above activities and entities, which is conducted in wholesale funding markets by providers such as regulated and unregulated money market intermediaries and direct money market investors, as well as fixed-income mutual funds, pension funds, and insurance companies.

On the other hand, *the FSB* (Financial Stability Board) wants to keep an eye on any activity that resembles banking but is carried out by unregulated or scarcely regulated firms or within an unsupervised framework. The shadow banking system excludes entities and activities that are not subject to the danger of a large withdrawal (bank run) on their liabilities. Pension funds, insurance firms, and the majority of investment funds fall under this category.

According to *the EBA* guidelines[29], when defining the term 'shadow banking activities', given that the CRR does not specify these terms, some entities are excluded and these are those that are subject to an appropriate and sufficiently robust prudential framework, for example credit institutions, investment firms, insurance corporations.

In addition, the *ESRB's* activity-based monitoring bolsters entity-based monitoring, resulting in a more comprehensive knowledge of financial stability concerns associated with non-bank financial intermediation. These include derivative markets practices, securities financing transactions and securitization of non-tradable assets, as examined subsequently.[30]

[28] **Zoltan Pozsar, Tobias Adrian, Adam Ashcraft, and Hayley Boesky (2013):** *Shadow Banking,* Economic Policy Review, Vol. 19, No. 2

[29] **European Banking Authority (2021)**: *Consultation Paper on Draft Regulatory Technical Standards on criteria for the identification of shadow banking entities under Article 394(4) of Regulation (EU) No 575/2013*

[30] **European Systemic Risk Board (2020):** *NBFI Monitor No 5, EU Non-bank Financial Intermediation Risk Monitor 2020*

1.1.3 Sources of funding

The focus needs to be transferred to the important sources of funding of non-bank entities. The shadow banking system is organized around securitization and wholesale funding. These functions include securities financing transactions (SFT), securitization, as well as derivative markets.

Firstly, the Global Financial Crisis (GFC) of 2007-2009 highlighted the need to improve transparency and monitoring of several aspects of shadow banking, especially concerning the *securities financing transactions*. They are of big importance, as they offer investors and companies an opportunity to fund their activities by using their assets (bonds, shares) to secure this funding, and boosting the financial sector efficiency by promoting credit expansion, maturity transformation, and liquidity transformation outside of the banking system. However, at the same time, they pose threats and systemic risks to the financial sector. This happens because SFTs have short maturities, with short-term leverage, which can lead to liquidity risks, especially in the event of a sudden repricing of the securities used as collateral, while collateral values, haircuts and eligibility can contribute to procyclical effects. Consequently, as it was obvious that SFTs can lead to "bank-like" risks,[31] and the need for regulation was urgent, in 2015 the Regulation on transparency of securities financing transactions (SFTR, Regulation (EU) No. 2015/2365) was published, implementing the FSB's policy framework on the transparency provisions.[32] ESMA also regulates these activities by setting out reporting requirements, data access, collection, verification, aggregation, comparison and publication of data on securities financing transactions (SFTs) by trade repositories (TRs), through the issuance of Guidelines. SFTs, which are secured (i.e. collateralised) transactions that "involve the temporary exchange of cash against securities, or securities against other securities"[33], include four types of instrument: securities lending, repurchase agreements, buy-sell back transactions and margin lending transactions.

1. The process of lending shares of stock, commodities, derivative contracts, or other securit ies to other investors or companies, in exchange of collateral, is known as *securities lending*. This practice boosts the financial sector with liquidity and enables short selling, hedging, arbitrage, and other strategies. The transferring of shares or bonds to a borrower is temporary and takes place through a brokerage firm. At this point it is worth mentioning that in mid-2014 until today during the COVID-19 era of 2020 with PEPP[34], in order to support the monetary policy transmission mechanism and to ensure price stability, the ECB injected cash into the financial system through launch of programs for purchase of Eurosystem securities and bonds in terms of unconventional monetary policy, named APPs (asset purchase programs)[35]. To avoid inflation staying too low for too long, the Eurosystem is buying huge amounts of assets from banks. A central bank's large-scale purchases of assets are expected to reduce the number of securities accessible on the market over time. In this way, securities holdings can continue to be used by others for their transactions.

[31] **European Systemic Risk Board (2016):** *ESRB opinion to ESMA on securities financing transactions and leverage under Article 29 of the SFTR, October 2016*

[32] **European Parliament and the Council (2015):** *Regulation of 25 November 2015 on transparency of securities financing transactions and of reuse and amending Regulation (EU) No 648/2012 (SFTR)*

[33] **European Securities and Markets Authority (2016):** *Report on securities financing transactions and leverage in the EU Report prepared under the mandate in Article 29(3) SFTR*, 4 October 2016, ESMA/2016/1415, p. 12

[34] **PEPP**= Pandemic Emergency Purchase Program

[35] For more information: **https://www.ecb.europa.eu/mopo/implement/app/html/index.en.html**

2. The *repurchase agreement (repo) market* is an extremely important practice as a huge amount of collateralized short-term loans are traded each day. These loans are a form of short-term borrowing agreement in order to raise short-term capital. The procedure includes selling securities in order to buy them back at a slightly higher price, while the difference between the securities' initial price and their repurchase price is known as the repo rate, which is a proxy for the overnight risk-free rate. It is a repo for the party selling the security and promising to repurchase it in the future; it is a reverse repurchase agreement for the party on the other end of the transaction, purchasing the security and agreeing to sell it in the future. The securities serve as collateral, and here lies the problem, as the repo market will promptly stop if there is a loss of confidence in these assets, like it happened during the subprime crisis. The value of assets used as security for operations is the basis for this over-the-counter market (off-exchange trading only). Finally, this is also a common practice central banks use for open market operations, din the context of monetary policy implementation.
3. *A buy/sell-back* is a pair of simultaneous transactions the first being the purchase of bonds, securities, commodities, guaranteed rights or other assets and the second being the sale of the same assets back again from the same counterparty for settlement on a later date. It is called a buy-sell back transaction or sell-buy back transaction depending on the counterparty's point of view. They are types of repo, but differentiate from repurchase agreements as the latter are always combined with a written contract, while buy/sell backs come with two independent contracts, one for the spot contract, and one for the forward contract (separate buy and sell contracts without a master agreement).[36]
4. *Margin lending* is a type of financing, allowing loans to be made against the security of a portfolio of investments. This means that the borrower can borrow money to invest, by using the existing shares, managed funds and cash, units in managed funds, commodities, derivatives and any other form of market-traded asset as security. The assets in the portfolio, their loanable value, determine the amount of the loan, as well the a credit limit is based on the borrower's financial position. The problem occurs when a "margin call" is triggered. This means that the investments fall in value and the borrower may not be able to repay the loan, so they either have to pay down the loan or "top-up" the portfolio with additional assets to restore the coverage ratio, leading to magnified losses.

As regards the *securitization* activity, non-marketable, illiquid assets, such as individual loans, can be pooled and tranched into tradable securities. Financial institutions that originated the loans transfer credit risk to the securities buyers through a financial vehicle corporation that buys the portfolio of loans, repackages it into tradable securities, and sells it to investors, or through the issuance of securitisation fund units or synthetic securitisations, which are based on the cash flows generated from the derivatives. The ESRB is required by the STS Regulation to regularly monitor trends in the securitisation market and to complement this evaluation with granular data from the European Data Warehouse (EDW).[37]

[36] **European Securities and Markets Authority (2016):** *Report on securities financing transactions and leverage in the EU Report prepared under the mandate in Article 29(3) SFTR*, 4 October 2016, ESMA/2016/1415, p. 12

[37] **European Data Warehouse** is a market infrastructure and designated by the European Securities and Markets Authority (ESMA), aiming to increase transparency and restore confidence in the asset-backed securities market, since 2013.

Finally, in respect with the unregulated, off-exchange trading activity of OTC[38]*derivatives market*, as well as with the derivatives in a regulated market (ETDs)[39], it was the point of interest at the global financial crisis. This practice aims in the hedging of risks that can be potentially explosive in the case where a default occurs, including market risks, credit risks, and counterparty risks. As derivatives' trading and execution are critical to market integrity, efficiency, and transparency, their procyclical behavior arising from interconnectedness is causing domino adverse effects, and their exposures increase liquidity needs for investment funds[40], it is demanding that they are regulated. This was accomplished with the EMIR Regulation (No 648/2012) [41]on OTC derivatives. EMIR data show that investment firms and banks dominate the EU derivatives market.[42] The most common form of credit derivative is the (OTC) credit default swap (CDS)[43], used to transfer credit exposure on fixed income products in order to hedge risk, against an ongoing premium payment.

1.2 Historical evolution: Origins and Growth - Global financial crisis 2007-2009 – Today

In the first place, it should be clarified that there has not been a coherent study that provides a theoretical model of the growth and collapse of the whole shadow banking system, since the components of this system are various and different with each other, in a way that they can only be examined separately. As we saw under **1.1** in order to define the system, we needed many tools like the entities, the activities, and the ways of funding. We are not going to investigate the evolution of all of them separately, but focus on the most important moments in history that shaped what we call today the "shadow banking system".

1.2.1 Origins of the shadow banking system

The growth of the shadow banking system is due to both supply and demand factors, as well as due to the fact that it provides a simple method for financial businesses to avoid regulation (for example, by utilizing tax havens) and enhance chances for financial innovation and speculative activity. One of the first shadow-banking innovations were *money-market mutual funds*. These funds flourished in the 1970s, during deregulation process and internationalization of capital and products movement. At that time, banks in the U.S struggled, as inflation crossed the 5% threshold, savers effectively began losing their savings, and the attractiveness of bank deposits was eroded, as the rising interest rates and the prohibition of Regulation Q[44] (which was effective until 1986) on interest payments on demand deposit accounts and the limitation of 5% on what banks could

[38] **Over-the-counter (OTC)** derivatives are financial contracts, privately negotiated and not traded on regulated exchanges such as regulated markets.
[39] **Exchange-traded derivatives (ETDs)** are contracts that derive their value from an underlying asset, are traded on regulated markets and have become more widely used in response to regulatory requirements, in terms of their standardized nature, higher liquidity, and ability to be traded on the secondary market. That point is their difference between OTC derivatives. Yet the latter are most common.
[40] **European Systemic Risk Board (2020):** *NBFI Monitor No 5, EU Non-bank Financial Intermediation Risk Monitor 2020*
[41] **EMIR:** REGULATION (EU) No 648/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on OTC derivatives, central counterparties and trade repositories
[42] **European Systemic Risk Board (2020):** *NBFI Monitor No 5, EU Non-bank Financial Intermediation Risk Monitor 2020*
[43] **Credit default swaps (CDSs)** are financial derivatives or contracts, which offer insurance against default risk by allowing investors to "swap" or offset their credit risk with that of another investor.
[44] **Regulation Q** is a Federal Reserve Board (FRB) rule that sets "minimum capital requirements and capital adequacy standards for board regulated institutions" in the United States. Regulation Q was updated in 2013 in the aftermath of the 2007–2008 financial crisis and continues to go through changes. (Investopedia)

pay savings depositors, led to cash outflows. On the other side, money market mutual funds managed to make their products appear safer and more like bank deposits, by pricing their shares based on a fixed “net asset value.”[45] As a result, depositors turned into investors to money market mutual funds, which offered a new alternative for relatively safe, liquid investments. The first ever money market mutual fund named “Reserve Fund” was introduced in 1971 by Bruce Bent and Henry Brown. It offered investors the preserving of their cash and the earning of a small rate of return and was regulated by the Securities and Exchange Commission (SEC)[46], by undergoing several requirements. However, because of the fact that these money market instruments were paying well over 5.25%, which increased competition for banks, and because of the risk exposures associated with deregulation (price and exchange rates fluctuations, credit risk, settlement risks etc.) the Depository Institutions Deregulation and Monetary Control Act of 1980 (DIDMCA)[47] was issued in the U.S.A., in order to give the Federal Reserve greater control over non-member banks. The fall of this trend was in 2001, when following the bankruptcy of Enron[48] several money market funds fell off short of their stable value. Today, money market funds have evolved into one of the most important pillars of today's capital markets, offering a diversified, professionally managed portfolio with high daily liquidity. In Europe, nevertheless, money market funds have always had much less power than in the United States or Japan, as regulations of the EU have always made the facilities provided by banks look more appealing than money market funds.

In addition, in the early 1970s banks were allowed to engage in a variety of other financial activities and innovation came in many forms. One of the most remarkable development was the *securitization* of loans, as we know it today, that enabled them to become liquid and tradable as they could be sold in secondary markets, and allowed portfolios of loans to be sold into the capital markets. However, in Europe the practice of securitization originates back in the 17th-century Dutch Republic, because of the trading with the Far East and their predominant role in world trade, a wide range of modern investment products were provided with the mediation of the merchant bankers and institutions (Bank of Amsterdam). On the other hand, in the U.S. the mortgage-backed securities were most common already in the mid-19th century with the farm

[45] The **Net asset value (NAV)** represents a fund's per share market value. NAV is calculated by dividing the total value of all the cash and securities in a fund's portfolio, minus any liabilities, by the number of outstanding shares.
[46] **The U.S. Securities and Exchange Commission (SEC)** is an independent federal government regulatory agency, created by Congress in 1934 as the first federal regulator of the securities markets. It has a three-part mission: Protect investors. Maintain fair, orderly, and efficient markets. Facilitate capital formation.
[47] The **Depository Institutions Deregulation and Monetary Control Act of 1980** was an important piece of financial legislation that required all depository institutions to meet Federal Reserve minimum requirements.
[48] **Enron** was an energy company that began to trade extensively in energy derivatives markets. The company hid massive trading losses, ultimately leading to one of the largest accounting scandals and bankruptcy in recent history. In October 2001 it was revealed that this America's seventh largest company was involved in corporate corruption and accounting fraud, leading to its shareholders losing $74 billion in the four years after its bankruptcy, and its employees lost billions in pension benefits.

railroad mortgage bonds[49], which is one reason that contributed to the panic of 1857[50]. As previously stated, securitization is a type of off-balance sheet banking in which bank loans are sold to a special purpose vehicle (SPV) (a legal entity) that uses capital markets to fund the purchase of a portfolio of loan, has its own legal status, created for the isolation of financial risks (risk sharing) and cannot go bankrupt. In fact, it was highly promoted by the government in the U.S.A., in the aim of promoting secondary markets in mortgages to allow liquidity for mortgage finance companies. It is noticeable that there are two most popular forms of securitization: the "mortgage-related" and the "asset-backed." The first one includes all securitized mortgages, both privately securitized product but also securitizations by government-sponsored entities. In 1970, **Ginnie Mae**[51] developed the very first mortgage-backed security (MBS)[52], a financial product that constituted an alternative way to privately fund home loans without deposits and allowed many loans to be pooled and used as collateral in a security that could be sold in the secondary market. In addition, **Fannie Mae[53]** was a proto-shadow bank in certain ways, also one of the first to offer mortgage-backed securities. This innovation encouraged the development of other similar investment products, like the *money market account*, which was introduced in 1971. This was like a bank account, but unlike the standard bank deposits, was not insured by the government. Of course the way was paved by President Lyndon Johnson when he published the 1968 Housing and Urban Development Act[54], giving banks the ability to sell off mortgages and allowing non-bank financial institutions to enter the mortgage business. Nevertheless, after the housing crisis, there are in U.S. several regulations with new requirements for the MBSs. On the other hand, the

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[49] In the 19th century in the U.S.A., some "companies approached individual farmers who lived on railroad routes, asking them to mortgage their farms in return for shares of stock. They assured the farmers that the dividends on stocks would be equal to the interest payments on mortgages and that the value of farmland would be improved by adding infrastructure near the property, as well as that farmers would earn money through appreciation of stock prices. In turn, railroad companies could claim they sourced local equity capital and lower their reported leverages. In reality, these railroad farm mortgages were high-leverage, no-documentation, no-down-payment loans that didn't require actual mortgage payments. Railroad farm mortgage-back security consisted of the farmer's signed obligation to pay the mortgage amount; the mortgage, which labeled the farm as collateral; and the bond of the railroad, which offered the reputation of the railroad company for repayment." **Wisconsin Historical Society** *: Historical essay: The Panic of 1857 and the Farm-Mortgage Crisis; From Boom to Bust and Civil War* (https://wisconsinhistory.org/Records/Article/CS16403)

[50] The panic of 1857: "Despite their efforts, Wisconsin railroads failed in 1857 with the Ohio Life Insurace Trust Company, a shadow bank that lent money almost exclusively to northwestern railroads. The failure triggered a massive farm mortgage foreclosure crisis. No-interest farm mortgages robbed investors of any securities for investment in failed railroads, while over-appraised mortgage values and declining land prices deepened the economic blow. Tensions between Eastern financiers and Wisconsin farmers spiked. Though circuit courts in Wisconsin overwhelmingly sided with farmers and placed stays of foreclosure on affected properties, many farmers still lost everything after speculators and investors bought out properties at steeply-discounted prices." **Wisconsin Historical Society** *: Historical essay: The Panic of 1857 and the Farm-Mortgage Crisis; From Boom to Bust and Civil War* (https://wisconsinhistory.org/Records/Article/CS16403)

[51] **Ginnie Mae** or the Government National Mortgage Association (GNMA) is a government agency in the U.S.A. that guarantees timely payments on mortgage-backed securities (MBS). In doing this, Ginnie Mae works with other government agencies to make affordable housing widely available through mortgage loans.

[52] **A mortgage-backed security (MBS)** is a bond-like instrument made up of a group of identical house loans purchased from the banks that originated them. MBS investors are paid on a regular basis, much like bond holders are paid on a regular basis. Home and other real estate loans are used as collateral for these bonds.

[53] **Fannie Mae** or the Federal Nation Mortgage Association**,** is a government-sponsored enterprise in the U.S.A. that makes mortgages available to low- and moderate-income borrowers and thus providing liquidity to the nation's mortgage finance system. Fannie Mae buys home loans from private lenders, packages them into mortgage-backed securities, and guarantees to outside investors that the principal and interest on those securities will be paid o n time. Fannie Mae also holds some home loans and mortgage securities in their own investment portfolios.

[54] **The Housing and Urban Development Act (1968)** provided a significant expansion in funding for public programs, such as Public Housing, and prohibited discrimination concerning the sale, rental and financing of housing based on race, religion, national origin or sex.

first securitization of receivables outside the mortgage markets happened in 1985, when the term asset-backed securities (ABS) was first introduced, as Sperry Lease Finance Corporation created securities backed by its computer equipment leases. Speculation can occur in corporate bonds based on information from the company's stock.

Furthermore, the rise of *repo market*, as discussed above, was a consequence of the rise of securitization coincided with the increased demands for collateral. This happens because in order (investment and commercial) banks, that buy loan portfolios to sell to SPVs, to hold the SPV-issued bonds until they can be sold, they need to expand their balance sheets. Accordingly, this activity must be financed in a way that is free risk and short-term. Therefore, these factors contributed to an enormous growth in the sale and repurchase ("repo") market, meaning a short-term collateralized lending market. However, as John Mullin writes on repo markets[55], at a very basic level, collateralized loans go back at least as far as ancient Greece in different forms, used mainly for maritime trade, as well as Ancient Mesopotamia (there are records about giving collateral-backed loans in Babylon), and Roman Empire, which was way more successful as the forms of lending were described in the Roman law. Considering the U.S. repo market, this practice was already spotted from as early as 1917, but were exclusively used by the Federal Reserve to lend to other banks. The use of repos expanded greatly since then, facing multiple recessions, resulting in changes in the federal bankruptcy laws, concerning mainly the repo collateral. It reached its peak in the late 1970s and early 1980s, for the reasons we examined above, meaning the limitations of Regulation Q and the inability of banks to increase the deposit rates they offered to their customers (a factor that as we mentioned turned customers to the money market mutual funds which in turn channeled money to the repo market). The repo market included mainly real estate loans secured by property and loans on cars subject to repossession. In contrast to the U.S. repo market, which is dominated by tri-party repo, meaning post-trade collateral selection, management and settlement are outsourced to an agent, the European repo market is largely cross-border and accounts for a less proportion of the balance sheets of key market intermediaries.

However, when Long Term Capital Management, a hedge fund, went bankrupt in 1998, because Russia defaulted on its sovereign debt, it was one of the earliest signs that the shadow banking industry would one day become the epicenter of global disaster. The hedge fund had grown to such proportions that Federal Reserve Chairman Alan Greenspan considered it as "Too Big To Fail" and was concerned that it could pull the entire economy down with it. At the time, Greenspan's idea was to orchestrate a private bailout, which would save taxpayers money, but did not further examined the causes and consequences of this collapse in a systematic and macroeconomic way.

1.2.2 Global Financial Crisis 2007-2009

The shadow banking system was at the heart of the current financial crisis of 2007-2009.[56] The beginning of the events of the banking panic was in August 2007, with a series of adverse, domino effects leading to a systemic crisis. There is no doubt that historically banking panics have a

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[55] **John Mullin:** *The Repo Market is Changing (and What Is a Repo, Anyway?); The market for repurchase agreements has repeatedly adapted to changing circumstances*, Econ Focus, First Quarter, 2020

[56] For a thorough look of what happened at the 2007 crisis see: **Gary Gorton(2009):** *Slapped in the Face by the Invisible Hand: Banking and the Panic of 2007,* Prepared for the Federal Reserve Bank of Atlanta's 2009 Financial Markets Conference: Financial Innovation and Crisis, May 11-13, 2009, version of May 9, 2009

tendency to occur periodically, with the Panic of 1930[57] ,which was a financial crisis that occurred in the United States and led to a serious decline in the money supply during a period of declining economic activity, being the most severe of all. During these banking crises, depositors ran to their banks and withdraw cash from their accounts. As a result, banks were unable to meet these demands, they run out of liquidity and in some cases they may even became insolvent. However, in the current panic event the shadow banking industry contributed highly to the housing market collapse and the worldwide financial crisis. A factor that played the main role for the occurrence of this situation was for sure the lack of a proper and equivalent to the banking sector regulation, and the operation of hazardous activities and excessive exposures to liquidity and credit risks by the shadow banking entities. The Securities and Exchange Commission (SEC) in October 2004 relaxed the net capital requirements for Goldman Sachs (NYSE: GS), Merrill Lynch (NYSE: MER), Lehman Brothers, Bear Stearns, and Morgan Stanley (NYSE: MS), increasing bank risk-taking and enabling them to leverage their initial investments by up to 30 times or even 40 times, which can have pro-cyclical effects. Consequently, many collapses of financial firms and investment banks took place, with the most shocking of all being the one in September 2008 of Lehman Brothers[58], a global financial services firm, the fourth-largest investment bank in the United States, which could not bear the losses of the ongoing subprime mortgage crisis, originated with derivative securities that were comprised of mortgage loans. Put in simple words, Lehman Brothers were not able to finance their huge investments in MBS, as due to the continuing crisis, they could not sell the assets to raise sufficient funds. After that, the financial markets followed with a free fall. Prior to that, in March 2008, Bear Stearns, a worldwide investment bank based in New York City, went bankrupt. Bear Stearns was significantly exposed to mortgage-backed securities, which turned into toxic assets as the underlying loans began to collapse, resulting in a run on funds. JPMorgan Chase eventually bought Bear Stearns for a fraction of its pre-crisis worth, as it went bankrupt by March 13.

The main problem was that the securities were sold with credit ratings that did not accurately reflect the true level of credit risk, as these investment banks conducted major portions of off-balance sheet, “shadow” transactions such as credit default swaps, which were not fully regulated, alongside with regulated activities. Nevertheless, the focus should be on mortgage lending companies, which expanded severely their lending practices, as the demand for houses was high and almost everyone was able to buy a home, even subprime borrowers, with poor or no credit history. This activity was not something new in the U.S.A., since the government had already sponsored the mortgage lenders Fannie Mae and Freddie Mac, as we mentioned before, to make home loans accessible to almost everyone. This is something that Gorton (2008)[59] explained as a problem meaning that the particular design of subprime mortgages made them especially sensitive to house prices. As a result, there was an upward spiral in home prices with low mortgage rates, which led to an increase in the rate of global inflation. After the 2008 housing crash, property fell

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[57] For more information look at: **Bordo Michael** and **Lane John Landon (2012):** *The Lessons from the Banking Panics in the United States in the 1930s for the Financial Crisis of 2007-2008*, Department of Economics, Rutgers University and NBER, Paper prepared for a seminar at the Graduate Center, CUNY, Feb 7, 2012.

[58] You can, also, watch ***Six of the best films about the financial crisis of 2008:*** “Inside Job”(2010), “Wall Street: Money Never Sleeps”(2010), “Margin Call”(2011), “Too Big To Fail”(2011), “Queen of Versailles”(2012), “The Big Short”(2015),

[59] **Gary Gorton(2009):** *Slapped in the Face by the Invisible Hand: Banking and the Panic of 2007,* Prepared for the Federal Reserve Bank of Atlanta’s 2009 Financial Markets Conference: Financial Innovation and Crisis, May 11-13, 2009, version of May 9, 2009

in value by 20% in just 16 months. This meant that the buyers would be in a place where their houses worth less than what they paid for them, as the price of the asset collapsed, leading in over-indebtness for many households, as borrowers were not able to pay back the loans. The banks then sold the loans to Wall Street institutions, who packaged them into low-risk financial products including mortgage-backed securities[60] and collateralized debt obligations (CDOs)[61], creating a large secondary market for subprime loan origination and distribution. In August 2007, as the financial markets could not absorb losses and solve the subprime crisis, the interbank market freeze completely, and the involved financial firms were not renewing sale and repurchase agreements (repo) or they increased the repo margin ("haircut").

The conclusion of all these events was the passage of the *Dodd-Frank Wall Street Reform and Consumer Protection Act in 2010*[62], a United States federal law, as a response to the financial crisis. The legislation had a major impact since it prohibited some of the biggest banks' riskier activities, enhanced government monitoring of their operations, and required them to have bigger capital reserves. It sought to decrease predatory lending on the consumer side.

1.2.3 Today

Prior to the pandemic, the global shadow banking sector was growing really fast, taking over lending activities from banks, accounting for almost half of global financial assets, based on the annual report of Financial Stability Board (FSB)[63], as the shadow banks represented 49.5% of total financial assets, up from 42% in 2008. Investment firms, pension funds, and insurance organizations accounted for the majority of the increase in shadow banking assets. The participants, which mostly consist of investment funds (hedge, money market, and other), private equity firms, and structured finance vehicles, increased by 13.5 percent in 2019, accounting for 72.9 percent of shadow banking, and currently supply almost 80% of credit solely in the United States, with the Covid-19 crisis accelerating this trend. However, because they are less regulated than banks, have more crisis transmission channels, and are able to lend out more money while holding less in their reserves, they pose several significant systemic risks to financial stability. This explains a lot, because some vulnerabilities in the shadow banking system, which were exposed when the markets were roiled by the effects of Covid-19, amplified the pandemic's shocks. The problem lies in the question if these entities of the shadow banking system are resilient enough to absorb losses and are capable of withstanding under periods of extreme stress. Some investment funds, for example, saw substantial withdrawals when funding markets became increasingly stressed in March 2020, like money market and fixed-income funds, which allow daily redemptions and invest in less liquid assets.[64]

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[60] **A mortgage-backed security (MBS)** is a bond-like instrument made up of a group of identical house loans purchased from the banks that originated them. MBS investors are paid on a regular basis, much like bond holders are paid on a regular basis. Home and other real estate loans are used as collateral for these bonds.

[61] **A collateralized debt obligation (CDO)** is a complex structured finance tool that is backed by a pool of loans and other assets. Individual loans are bundled together into a product that can be sold on the secondary market. If the loan defaults, the underlying assets are used as collateral. CDOs are a practical instrument for transferring risk and freeing up cash, however they are hazardous and not suitable for all investors.

[62] For more information about **Dodd-Frank Wall Street Reform and Consumer Protection Act (2010)** see the **2.3.1 in Chapter 2 below.**

[63] **Financial Stability Board:** *Global Monitoring Report on Non-Bank Financial Intermediation 2020*

[64] **The Investment Company Institute (ICI):** *Experiences of US Money Market Funds During the COVID-19 Crisis*, Report of the COVID-19 market impact working group, November 2020

By saying that, we may consider that the shadow banks are though to be still Too Big to Fail, or based on the term that Dodd-Frank bank reform bill and European legislation use, "systemically important financial institutions," or SIFIs. This means that the worries about reliving the financial crisis of 2007-2009 are not exactly groundless. These worries were expressed also by Nancy Wallace, a real estate professor at Berkeley, in an interview to the University of California's business school. She shifts the focus on a probability of a request of a bail-out by nonbank mortgage servicers (Quicken Loans[65] for example) that collect mortgage payments and repackage them into other financial products, such as the infamous mortgage-backed securities, which were one of the factors that led to the financial crash in 2007. Since the pandemic crisis has had a huge impact on the economic life and has sufficiently changed the balance in the financial field, it is logical that some non-bank intermediaries have been influenced. The first response of the governments and monetary authorities around the world in order to restrain the adverse effects of this non-financial –yet- crisis has been the quantative easing measures and the allowance of borrowers to defer payments for up to a year some time (moratoria on loan repayments). When these moratoria end, we will be able to see the consequences of this decision, and if there are going to be bankruptcies and bailouts. Needless to say that the Federal Reserve has already bailed out many asset managers and other shadow banks by backstopping money market funds, repurchase agreements, and other corporate financing tools, while hedge funds are turning to government loans. The performance of traditional banks in the contrary is expected otherwise, since after 2008, both U.S. and European banks became subject to higher capital requirements[66], have more liquidity and are less leveraged, which allowed them to absorb rather than amplify the macroeconomic shock as occurred in 2008. As Myret Zaki highlights in her book «The Shadow Banking System Takes Control» (published in French[67]) the speculative debt of the subprime lending practices of these less regulated financial intermediaries are an «Everest of systemic risk».

The good news are that the global financial system is resilient thanks to the political responses by G20 after the GFC[68], including Basel III, OTC derivatives, resolution frameworks, which is proven by the performance of banks and FMIs[69] so far, who continue the supply of financing to the real economy and provide economic assistance. Except from the reforms in the banks' regulatory frame, changes in the OTC derivatives trade have also had a good impact in the financial stability, since the complex links between market participants have been replaced with simpler and

[65] **Rocket Mortgage, LLC** (formerly known as **Quicken Loans LLC**) is a mortgage lending company, the largest overall retail lender in the U.S., that relies on wholesale funding to make its loans.

[66] "Indeed, **BCBS** analysis indicates that more strongly capitalised banks showed higher increases in lending to businesses and households than other banks. Derivatives volumes also increased, enhancing the ability of market participants to transfer and hedge risks. To an important extent, the banking sector's resilience can be attributed to the adoption of Basel III reforms. From 2013 to the end of 2019, banks' capital, leverage and liquidity positions improved as reforms were implemented. Taken together, most banks entered the pandemic with capital and liquidity levels well above minimum regulatory levels. Core equity tier 1 (**CET1**) capital ratios improved by nearly 3 percentage points on a weighted average basis for large internationally-active banks. **Leverage** ratios exhibited marked improvement since the introduction of the Basel III reforms, with weighted average leverage ratios for large internationally-active banks increasing by between 1-2 percentage points. **Liquidity** positions also improved materially, both qualitatively and quantitatively. Significant progress in addressing the **too-big-to-fail** problem also added to bank resilience. Systemically important banks in advanced economies have built up significant loss absorbing and recapitalisation capacity by issuing instruments that can bear losses in the event of resolution. These reforms have given authorities more options for dealing with banks in distress. **Recovery** and **resolution** planning have also improved the operational capabilities of banks and authorities, and supported risk management on a cross-border basis through enhanced liquidity monitoring and reporting." **Financial Stability Board:** *Lessons Learnt from the COVID-19 Pandemic from a Financial Stability Perspective,* Interim report, 2021

[67] **Myret Zaki and Dominique Morisod**: *La finance de l'ombre a pris le contrôle,* FAVRE (April 15, 2016)

[68] Global Financial Crisis of 2007-2009

[69] Financial Market Infrastructures

more transparent, supported by robust risk management requirements. However, this is not the case for all financial sectors. As regulatory measures encouraged banks to support financing to the real economy and fiscal authorities provided significant financial support to companies and households, there are serious worries that we may face a swift from deflation rates to almost inflation rates. In addition, COVID-19 highlighted the fact that procyclicality, an inherent feature of the financial system and component of systemic risks, is once again in the spotlight and the policy makers should take measures in a macroprudential level.

As mentioned in the FSB report on COVID-19 support measures: Extending, amending and ending (April 2021)[70] “The COVID-19 event may yet test the resilience of the global financial system”, because of the asynchronous economic, which may widen interest rate differentials between economies and may lead to capital outflows. The center of attention are of course banks and non-banking intermediaries, which are for sure better capitalized and more resilient under a range of recovery scenarios, but there are still worries about their ability to sustain real economy financing in an environment of deteriorating non-financial sector credit quality. That is why all measures taken are targeting a wide range of fields combining micro prudential and macro prudential level, in order to maintain the financial stability. FSB highlights also that the attention must be drawn at the vulnerabilities in parts of the NBFI[71] sector, which need to be addressed, by the comprehensive work programme of the FSB in collaboration with SSBs[72], to enhance the resilience of the NBFI sector while preserving its benefits. Given the cross-border activities of many entities in this sector, this includes policy work to improve MMF[73] resilience and analysis of vulnerabilities in open-ended funds, the role of margins, and the drivers of bond market liquidity, as well as international coordination of NBFI policy responses to avoid regulatory arbitrage and market fragmentation. This also entails assessing the situation. This also includes work to assess the adequacy of financial resources of CCPs[74] in light of their systemic importance.

Finally, there is also an opinion expressed by Donna Carmichael, Ph.D. Researcher in Sociology at the London School of Economics and Political Science, that COVID-19 pandemic has exacerbated inequalities around the world allowing some wealthy investors to benefit from the crisis[75], which is an important social economic aspect that we must also take into consideration. The evidence is that last year, U.S. billionaires increased their wealth by over one third, to one trillion dollars, while millions of Americans faced deep financial hardship. New research from Copenhagen Business School looks at how American ‘shadow banks,' which are less regulated and include private credit intermediaries such as private equity, venture capital, and hedge fund firms, have invested in ways to extract profit of the current situation. Private equity, for example, invests in private firms and frequently has a strong impact on how executives manage them, whereas venture capital invests in start-up companies and advises founders, showing how influencing these NBFI can be. “This has had the effect of increasing healthcare costs and

[70] **Financial Stability Board (FSB):** *Covid-19 support measures- Extending, amending and ending,* 2021
[71] Non-bank financial intermediaries
[72] (global) Standard setting bodies
[73] Money market funds
[74] A **central counterparty clearing house (CCP)** is an entity that helps facilitate trading in various European derivatives and equities markets.
[75] **Megan Tobias Neely** (Copenhagen Business School) and **Donna Carmichael** (London School of Economics and Political Science): *Profiting on Crisis: How Predatory Financial Investors Have Worsened Inequality in the Coronavirus Crisis,* 2021

overburdening underpaid healthcare staff," says Carmichael. The study shows how, throughout the pandemic, shadow banks benefitted by investing in both rising and struggling industries (such as health technology and delivery services, including the airline, energy, and hospitality sectors). "This is what hedge funds did that sparked the recent 'GameStop Rebellion[76]. An example of short-selling[77] during the crisis is how one hedge fund manager made a $1.3 billion profit by shorting shopping mall stocks, knowing they'd be hit hard by COVID shutdowns," says Megan Tobias Neely. Of course, this is how the… business works, but it is for sure worth mentioning from a sociopolitical point of view. Making profit of random events is not a crime, but those actions that can be characterized as market abuse or manipulation should definitely be examined under public and criminal law.

1.3 The role of Shadow Banking System in the financial system-Importance and size

The shadow banking sector operates across the American, European, and Chinese financial sectors, and in perceived tax havens worldwide. It accounts for almost half of global financial assets, and thus growing faster than the traditional banks, based on the annual report of FSB[78], which shows that in 2019 the sector grew by 8.9% to US$200.2 trillion (170, 7 trillion Euro), while representing 49.5% of total financial assets, up from 42% in 2008[79]. The main players that contributed to this abrupt growth are investment funds, pension funds and insurance corporations, as well as the non-bank financial institutions, rising by 11.1% to €49 trillion in 2019. Hedge funds, money market and other investment funds grew by 13.5% in 2019, which during the market turmoil in 2020, because of the pandemic, suffered large outflows.

While the share of shadow banking in financial intermediation had decreased by about 25% after peaking at 27% just before the GFC, when The United States had the largest shadow banking system (€20 trillion), followed by the Euro zone (€19 trillion) and the United Kingdom (€ 7trillion), today in the U.S.A. is worth € 45 trillion in assets, a 75% increase since the financial crisis ended. In the euro area, this measure stood at €39.4 trillion in the fourth quarter of 2020, an increase of 1.5% (0.5%) compared with the end of 2019, which shows that the monitoring universe has recovered from the initial effects of the pandemic[80].

It is obvious that, globally, the non-bank financial intermediation (NBFI) sector has grown faster than banks over the past decade, including in 2019. The financial assets of the NBFI sector – comprising mainly pension funds, insurance corporations and other financial intermediaries (OFIs) – accounted for 49.5% of the global financial system in 2019, compared to 42% in 2008.[81] Based on the global annual report of FSB the relative size of NBFI in emerging market economies

[76] **GameStop Corp.** is an American video game, consumer electronics, and gaming merchandise retailer. In January 2021, a short squeeze resulted in a 1,500% increase in GameStop's share price over the course of two weeks, reaching an all-time intraday high of US$483.00 as of January 29, 2021, on the New York Stock Exchange.

[77] **Short selling** is an investment or trading strategy that speculates on the decline in a stock or other security's price. The investor borrows a stock, sells the stock, and then buys the stock back to return it to the lender. Short sellers are betting that the stock they sell will drop in price. The difference between the sell price and the buy price is the profit.

[78] **FSB(2020):** *Global Monitoring Report on Non-Bank Financial Intermediation, 2020*

[79] As it is based on annual data, the main part of this report discusses trends in the NBFI sector globally before the onset of the COVID-19 shock in early 2020. It presents the results of the tenth annual FSB monitoring exercise to assess trends and risks in NBFI, covering 29 jurisdictions that account for 80% of global GDP.

[80] **ESRB(2021):** *EU Non-bank Financial Intermediation Risk Monitor 2021,* NBFI Monitor No 6 / August 2021

[81] **FSB(2020):** *Global Monitoring Report on Non-Bank Financial Intermediation, 2020*

(EMEs) has increased at a faster pace than in advanced economies (AEs), especially in loan provision on short-term funding. One of the key factors that contributed to that growth of NBFI has been the expansion of collective investment vehicles (CIVs)[82], including hedge funds, MMFs and other investment funds (OIFs), which made up 31% of NBFI sector assets in 2019. Needless, to say that the growth in assets of insurance corporations and pension funds are a prominent driver of EU shadow banking, which shows that shadow banking entities, insurance corporations and pension funds are highly interconnected.

One of the main changes has been the increasing use of repo transactions as a source of funding, particularly in the USA, as well as the cross-border links of OFIs, which are larger than those of banks, with the highest degree of such links seen in investment funds. In addition, financial assets of broker-dealers, who dependent on short-term funding, increased steadily over the past decade, as well as their leverage.

Some innovation reported by the jurisdictions were peer-to-peer (P2P) lending, collateralized loan obligations (CLOs), of investment funds (e.g. loan funds), special purpose vehicles (SPVs), pension funds or insurers in leveraged loan markets, reported crypto-asset-based lending, crowdfunding to raise mortgage down payments, digital only non-banking financial companies, FinTech lending (consumer credit). Operational risk is a problem because of their reliance on new digital procedures, as leverage and credit risk.

1.4 BENEFITS AND RISKS

All things considered, it is obvious that the creation of credit by the shadow banking activity is for sure a huge business that we should take into consideration. Between the advantages of this system is that it offers an alternative to the traditional banks, providing lending facilities to many categories of borrowers, even to some of them who would be excluded under commercial banking lending. Thus, the expansion of credit and the economic development globally is growing rapidly thanks to the contribution of the non-bank intermediaries. Moreover, the diversification in the financial system is enhanced with a variety of financial products that can apply to each person's preference, risk appetite and economic ability. For example, in the repo market, investors have access to a short term funding, with easier and cheaper financial services, without having to worry about long term liabilities. On the other hand, money market funds, which are very popular, provide participants with the ability to safely "park" their money, as these funds invest in certificates of deposit (CDs)[83] and short-term commercial paper[84], which are less volatile and risky than bonds or stocks. In addition, through securitization companies are able to remove debt from

[82] A **collective investment vehicle (CIV)** is any entity that allows investors to pool their money and invest the pooled funds, rather than buying securities directly as individuals.

[83] **A CD, or certificate of deposit**, is a product offered by banks and credit unions that pays a set interest rate on money deposited. In exchange, you agree to keep the full deposit in the account for a set term.

[84] **Commercial paper** is a commonly used type of unsecured, short-term debt instrument issued by corporations, typically used for the financing of payroll, accounts payable and inventories, and meeting other short-term liabilities. **Short-term** refers to the fact that it typically has original maturity of less than nine months. It is usually issued at a discount and provides a relatively low-risk financing alternative for companies, governments, or other organizations to fund normal operations.

balance sheets and replace it with new funding, and thus become more liquid, by transforming that debt into securities. Investment banks, also, intermediate large financial transactions of billions and trillions for the corporate, capital market, and governments (e.g. for large infrastructural projects), and thus highly contributing to the national economy.

However, the risks associated with the activity of these non-bank intermediaries are extremely high and numerous, as it became obvious during the financial crisis of 2007-2009. Starting with the repo market for example, the major risk lies in the probability of counterparty default, meaning the probability that the other party of the transaction might default on its contractual obligation, while the loss of the lender is only certain after the sale of the underlying security. Next, money market funds are highly influenced by inflation rates and investors may face losses in their returns of their money market accounts, without having the government insuring their non-deposit accounts. The securitization activity can also involve exposures and uncertainties, as well as moral hazard problems. This complex process just transfers the problem through the financial system without eliminating it and the risk ratings of the issuer do not correctly reflect their true level of risk. Finally, investment banks mostly do their businesses with wealthy individuals and big companies, excluding small enterprises or retail investors, dealing with a lot of capital, which can be tempting, considering the human factor and nature, and may lead to hazardous behavior and even market manipulation. For the same reason, meaning the volume of capital, they may pose extreme threats to the financial stability, because any malfunction or problem with these banks could put a severe effect on whole the economy. Nevertheless, most importantly, shadow banks are not backed by the central bank money, neither they are insured by the government, nor they are subject to preventive regulations or the safety nets. Therefore, if they face problems with liquidity or insolvency, they may cause adverse effects overall financial system, creating a systemic risk. This happened during the GFC in 2007-2009, when too many investors decided to withdraw their funds at once and shadow banks had to sell assets (“fire sales”), which caused the value of similar assets of other shadow banking entities (and some banks) to drop in order to reflect the lower market price, creating further uncertainty about their health. Unfortunately, because of the –almost- absence of regulation, supervision and transparency, this event could not be easily prevented or quickly and correctly handled.

Consequently, the next big step was the effort to address these problems and risks from the shadow banking system, in the EU and in the U.S.A., with the adoption of regulatory measures both in international and national level.

CHAPTER 2: REGULATION AND SUPERVISION

2.1 At international level

After the financial crisis of 2007-2009, the regulation of the shadow banking system became the main concern, since the key factors of the crisis where due to the players of this system, especially with the distribution of mortgage-backed securities and the collapse of important investment banks, like Lehman Brothers. As it became clear that shadow banks were capable of posing systemic risks to the financial system, regulators and supervisors globally undertook comprehensive reform of the financial services. At the level of adoption of rules, in the context of the making of international law, international fora and organizations, through non-legal binding (but with binding effects and enforceable implementation) standards (soft law), played a huge role in the shaping of this reform, considering also shadow banking entities. In this thesis, we are going to examine the work of two of them: **Basel Committee on Banking Supervision**, or Basel **(BCBS)**, and **Financial Stability Board (FSB).**

2.1.1 Basel Committee on Banking Supervision (BCBS)

The Basel Committee on Banking Supervision (BCBS), formed in 1974 by G10 members and located in Basel, is an international forum for banking regulators and supervisors, who aim to enhance banking regulation through cooperation and exchange of information. The 45 members, including central banks from 28 jurisdictions, work together in order to shape a globalized approach in the making of non-legal binding (soft law), yet enforceable, standards. These standards, known as the Basel Accords, are highly influential and the adoption of them by national policymakers is monitored and reinforced. The main contribution of these standards is in the shaping of banks' capital requirements. The first Basel Accords or Basel I (1988) determined the assessing of banks' credit risk based on risk-weighted assets and published suggested minimum capital requirements to keep banks solvent during times of financial stress. Basel II (2004) was about to be implemented, but then the 2008 financial crisis occurred. Basel I and II have been blamed for contributing to the financial crisis of 2008.[85] The expansion of off-balance sheet exposures, as well as insufficient capital growth, weakened Basel II's risk-weighted capital regulation system. Furthermore, it is was quite tempting to follow the route of shadow banking activities, as an (less or) unregulated alternative to the strict requirements that traditional banks carry. Thus shadow banks gained a competitive advantage, especially in the field of credit intermediation.

The aftermath of the crisis led to the adoption of Basel III, which designed methods to mitigate risk within the international banking sector, by forcing banks to maintain proper leverage ratios and certain levels of reserve capital, in order to make banks capable of dealing with financial stress, risk management, as well as to promote transparency.

Specifically, Tier 1 refers to a bank's core capital, equity, and reserves that appear on the bank's financial statements, taking into account first the minimum capital requirements. Tier 1 capital acts as a buffer for a bank in the case of substantial losses, allowing it to keep operations running. On the other hand, Tier 2 refers to a bank's supplemental capital, such as undisclosed reserves and unsecured subordinated debt instruments with at least a five-year original maturity. Basel III increased the minimum capital requirements for banks from 2% to 4.5 percent of common equity as a proportion of risk-weighted assets. In order to be Basel compliant, there is additionally a 2.5 percent buffer capital requirement, bringing the total minimum need to 7%. When banks are in financial distress, they can utilize the buffer, but doing so might result in even more financial limitations when it comes to paying dividends. Additional requirements are the capital adequacy ratio, meaning that banks should keep a minimum level of 8% of capital to risk-weighted assets (RWAs); the countercyclical buffer, with the aim to increase capital cushions during good economical times, that can be used to prevent the urge to take on more and more risk and invest all of one's money for the best potential return; and the additional buffer of global systemically important banks (G-SIBs).

[85] **Rustom M., Irani Rajkamal Iyer Ralf R. Meisenzahl Jose-Luis Peydr**: *The Rise of Shadow Banking: Evidence from Capital Regulation*, 2018

Moreover, Tier 1 capital is of big importance, as it has loss absorbing capacity so that a bank can continue its activities and remain solvent. It is regulated under Article 26 of the CRR[86] and consists of both Common Equity Tier 1 capital (CET 1), including capital instruments, share premium accounts, retained earnings and other reserves, and Additional Tier 1 capital (AT 1),including for example, certain subordinated loans, hybrids and convertibles. On the other hand, Tier 2 capital, defined under Article 71 of the CRR, consists of capital instruments, subordinated loans and share premium accounts and ensures that depositors and senior creditors can be repaid, if the bank would fail. The minimum 8% capital requirement regime is composed of the following: 6% Tier 1 capital, namely 4.5% of CET 1 and 1.5% of AT 1 and 2% Tier 2 capital.

Second, in terms of countercyclical measures, Basel III imposed additional regulatory capital requirements that allow major banks to withstand cyclical fluctuations on their balance sheets. Banks must set aside extra capital during periods of credit growth. Capital requirements might be reduced during periods of credit contraction. Banks accumulated excessive debt in many situations while maintaining good risk-based capital ratios, so Basel III aims to minimize this by incentivizing banks to take steps to shrink their balance sheets by limiting the size of operations a bank may expand in comparison to its own capital.

Finally, Basel III established leverage and liquidity rules to protect banks from excessive borrowing while also ensuring that they have adequate liquidity during times of financial stress. The leverage ratio was restricted at 3%, which is calculated as Tier 1 capital divided by the amount of on and off-balance assets minus intangible assets. As a backup to risk-based capital requirements, Basel III included a non-risk-based leverage ratio. A leverage ratio of more than 3% is needed for banks, and the non-risk-based leverage ratio is determined by dividing Tier 1 capital by a bank's average total consolidated assets. Liquidity ratios were also adopted as part of Basel III. The first is the Liquidity Coverage Ratio (LCR), which ensures that banks maintain an appropriate amount of unencumbered high-quality liquid assets that can be turned into cash instantly to fulfill their liquidity demands for a 30-day liquidity stress scenario. The second is the Net Stable Funding Ratio (NSFR), which requires banks to maintain a consistent funding profile in order to reduce the risk that disruptions to a bank's regular funding sources will erode its liquidity position, increasing the risk of failure and potentially leading to broader systemic risk.

Basel IV, which is complementary to Basel III and focuses on filling the gaps of Basel III, seeks to complete the prudential regulatory framework, by introducing four novelties: banning the use of IRB[87] for specific types of exposures, utilizing the SA[88] in order to quantify operational risk, completing the framework for G-SIBS[89], and introducing the output floor, a fixed level of all RWAs[90] calculated by using the SA. However, the implementation of these standards has been postponed, because of the pandemic.[91]

All these standards propose regulatory measures concerning the traditional banking system, not the shadow banking system. However, it is arguable that, since shadow banks perform in very similar ways as traditional banks, they remain under regulatory influence of the Basel standards,

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86 EU Capital Requirements Regulation (*575/2013*) (CRR or EU CRR)
87 Internal ratings-based (IRB) approach
88 Standardized approach
89 Global systemically important banks
90 Risk weighted assets
91 **Katarzyna Parchimowicz & Ross Spence:** *Basel IV Postponed: A Chance to Regulate Shadow Banking?*

especially if they are parts of the same conglomerate, so they are regulated on a consolidated basis. Banks have to take into account exposures to SBS firms in their capital calculations, but they can avoid that by establishing, for instance, special purpose vehicles (SPVs) or even subsidiaries. As a result, the problem will remain as long as SBS is not explicitly regulated in a prudential manner.

2.1.2 The Financial Stability Board (FSB)

The Financial Stability Board (FSB) is an international body that monitors and makes recommendations about the global financial system. The FSB promotes international financial stability; it does so by coordinating national financial authorities and international standard-setting bodies as they work toward developing strong regulatory, supervisory and other financial sector policies. It fosters a level playing field by encouraging coherent implementation of these policies across sectors and jurisdictions. Embedded in the FSB’s structure is a framework for the identification of systemic risk in the financial sector, for framing the policy sector policy actions that can address these risks, and for overseeing implementation of those responses. The Plenary is the FSB's primary decision-making body, with a Steering Committee to carry out operational tasks in between Plenary sessions and three Standing Committees. Members of the FSB agree to pursue financial stability, maintain financial sector openness and transparency, implement international financial standards (including the 15 key International Standards and Codes), and submit to periodic peer reviews, based on evidence from the IMF/World Bank public Financial Sector Assessment Program, among other things.

Following the implementation of the new capital rules for banks (Basel III), the G20 Leaders cautioned that regulatory gaps might arise in the shadow banking sector during the November 2010 Seoul Summit. They asked the Financial Stability Board (FSB) to produce proposals to improve the monitoring and regulation of the shadow banking sector in conjunction with other international standard-setting organisations. In response to the G20’s request, the FSB formed a Task Force with the following objectives:

• define what the term "shadow banking system" means, as well as its function and dangers in the broader financial system;

• provide methods for effective shadow banking system monitoring; and

• draft, if required, new regulatory measures to address the shadow banking system's systemic risk and regulatory arbitrage issues. Following that, the Task Force performed a thorough regulatory mapping exercise to take stock of current national and international measures, as well as a rigorous monitoring exercise to examine recent trends and changes in the global shadow banking sector. The FSB has issued suggestions based on these exercises. Given the fluid, evolving nature of financial systems, it is crucial for the authorities to take a practical two-step approach in defining the shadow banking system:

• First, regulators should cast a wide net, looking at all non-bank credit intermediation to ensure that data collection and surveillance cover all sectors where shadow banking-related financial system vulnerabilities might develop.

• Second, for policy purposes, authorities should focus on the subset of nonbank credit intermediation where there are I developments that increase systemic risk (in particular, maturity/liquidity transformation, imperfect credit risk transfer, and/or leverage), and/or (ii) indications of regulatory arbitrage that undermines the benefits of financial regulation. This technique may be used to create a monitoring system for assessing shadow banking risks. To begin, regulators would need to examine the overall scope and trends of non-bank credit intermediation in the financial system. Authorities should next restrict their emphasis to credit intermediation based on this evaluation. Authorities should then focus their attention on credit intermediation activities that have the potential to pose systemic risks, focusing in particular on activities involving the four key risk factors: I maturity transformation; (ii) liquidity transformation; (iii) imperfect credit risk transfer; and/or (iv) leverage, based on this assessment. Monitoring should be flexible, forward-looking, and adaptive enough to identify systemic innovations and mutations that might lead to increased systemic risks and arbitrage, undermining the efficacy of financial regulation. Other variables, such as the interconnectedness of the system, should be considered when analyzing systemic risk in depth.

Using this improved monitoring approach, the FSB's Standing Committee on the Assessment of Vulnerabilities continued to undertake yearly monitoring exercises to analyze global trends and risks (SCAV). As more data becomes accessible as a result of FSB and member authority activities, such assessments will improve over time. The results of this worldwide evaluation are presented to the G20 and the FSB Plenary on an annual basis.

FSB has created a series of stylized measures for enhancing shadow banking system monitoring. From both the macro (system-wide) and micro (entity/activity-based) perspectives, this draws on many types of data and analytical methodologies. Authorities are expected to implement an adequate monitoring procedure in accordance with the specified steps, as well as to strengthen their data reporting or disclosure requirements as needed to guarantee effective monitoring.

For example, the FSB collaborates with the International Organization of Securities Commissions (IOSCO) on MMFs, which demonstrated their vulnerability during the crisis when a large number of them had contagious investor runs. The International Organization for Securities Commissions (IOSCO) has developed policy recommendations to address the systemic risks of contagious investor runs on a large segment of MMFs. These proposals serve as the framework for establishing international standards for the regulation and administration of MMFs. The FSB has accepted the IOSCO recommendations, which include requiring MMFs that offer their investors with a stable or constant net asset value (NAV) to migrate to a floating NAV as soon as feasible. Where such conversion is not practicable, the FSB believes that the safeguards required to improve the resilience of stable NAV MMFs to runs should be put in place operationally.

In addition, FSB released policy recommendations for securities financing transactions in November 2012 in order to reduce the risks associated with the shadow banking system's heavy dependence on this form of short-term wholesale borrowing. The majority of the FSB's policy proposals have already been finalized.

Furthermore, on August 29, 2013, the FSB released specific proposals for consultation on minimum standards for methodologies used by market participants in calculating the "haircuts (margins)" that limit the amount of financing that can be provided against a given security, as well as a framework of numerical haircut floors to prevent margin erosion below minimum levels when non-banks obtain a security. These policies would aid in reducing excessive leverage and dampening pro-cyclicality in such financial markets.

Recognizing that shadow banking entities and activities take many forms and evolve over time, the FSB has developed a forward-looking high-level policy framework for authorities to use in detecting and assessing the sources of financial stability risks from shadow banking in the non-bank financial space, as well as implementing appropriate policy measures to mitigate these risks where necessary.

The framework is comprised of three components:

(i) Financial stability assessment based on economic functions (or activities) – Authorities will identify potential sources of shadow banking risks in non-bank financial entities in their jurisdictions by categorizing them according to five economic functions, regardless of the entities' legal form. They are: (1) management of collective investment vehicles with features that make them vulnerable to runs; (2) loan provision that is reliant on short-term funding; (3) market intermediation that is reliant on short-term funding or secured funding of client assets; (4) credit creation facilitation (e.g. through credit insurance);and (5) securitisation-based credit intermediation and funding of financial entities.

(ii) Adoption of policy instruments — Authorities will rely on agreed-upon overarching principles for overseeing non-bank financial organizations that have been recognized as presenting a danger to financial stability due to shadow banking. Furthermore, authorities will use appropriate policy tools from a menu of optional policies (policy toolkit) for each economic function as they believe best fits the non-bank financial entities concerned, the structure of the markets in which they operate, and the degree of financial stability risks posed by such entities in their jurisdictions, where necessary to mitigate financial stability risks.

(iii) Authorities will share information on I which non-bank financial entities (or entity types) are identified as being involved in which economic function20 and why, as explained by each shadow banking risk factor; and (ii) which policy tool(s) the relevant authority adopted and how, through the FSB process, to ensure consistency across jurisdictions in applying the policy framework.

FSB issues every year a monitor review of NBFIs.[92] NBFIs are a key source of funding for many businesses and families, promoting credit provider diversification and competition. It summarizes the findings of the FSB's ninth annual monitoring exercise on NBFI trends and risks, which included 29 countries accounting for 80% of global GDP.

The FSB's supervision of NBFI is divided into two stages. The first phase uses sectoral balance sheet data to examine the size and trends of financial sectors in aggregate and across jurisdictions. The second stage examines NBFI operations and organizations that might represent bank-like financial stability concerns and/or entail regulatory arbitrage. If non-bank financial organizations execute one of the five economic tasks outlined in the FSB monitoring methodology, they are included in this "narrow measure." The methodology taken in this evaluation is cautious, based on the premise that policy actions and/or risk management techniques have not been used (i.e. on a pre-mitigant basis).

[92] **Financial Stability Board (2020):** *Global Monitoring Report on Non-Bank Financial Intermediation*

2.1.3 The International Financial Reporting Standards (IFRS)

The International Financial Reporting Standards (IFRS) are a collection of accounting regulations for public businesses' financial statements that are designed to make them consistent, transparent, and easily comparable across borders.

IFRS have been adopted by 120 countries, including those in the European Union. The Generally Accepted Accounting Principles (GAAP) are used in the United States (GAAP). The International Accounting Standards Board (IASB) publishes the IFRS (IASB)[93].

Moreover, these standards describe how businesses must keep records and report their costs and revenue. They were created to provide a worldwide accounting language that investors, auditors, government regulators, and other interested parties could understand. They are intended to ensure that accounting terminology, procedures, and statements are consistent, as well as to assist businesses and investors in making informed financial assessments and choices.

IFRS include a wide variety of accounting operations and provide obligatory regulations for some elements of company activity.

- The balance sheet is the statement of financial position. The International Financial Reporting Standards (IFRS) have an impact on how balance sheet components are reported.
- Statement of Comprehensive Revenue: This might be a single statement or two distinct statements, one for profit and loss and the other for other income, such as property and equipment.
- Statement of Equity Changes: This statement, often known as a statement of retained earnings, details the company's change in earnings or profit throughout a specific financial period.
- Statement of Cash Flows: This report describes the company's financial activities during a certain time period, dividing cash flow into three categories: operations, investment, and financing.

A firm must also provide a description of its accounting procedures in addition to these fundamental reports. The entire report is frequently compared to the prior report to illustrate how profit and loss have changed. For each of its subsidiary firms, a parent corporation must generate individual account reports.

The International Financial Reporting Standards (IFRS) promote openness and confidence in global financial markets and the firms that trade on them. Investors would be less likely to accept financial statements and other information provided to them by firms if such standards did not exist. We could see fewer transactions and a weaker economy if we don't have that trust, especially in the case of shadow banks, where transparency is number one requirement.

[93] International Accounting Standards Board

2.2 At European level

2.2.1 European Commission (COM)

The 2008 financial crisis was global in scope, with financial services at its epicenter, exposing regulatory flaws, inadequate oversight, opaque markets, and excessively complicated products. The G20 and the Financial Stability Board have coordinated the worldwide reaction (FSB). In carrying out its G20 promises, the European Union has demonstrated global leadership. The EU is well on its way to implementing the changes connected to the G20 pledges, according to the EU's Financial Reform Roadmap. The majority of the measures are presently in the legislative process.

However, there was a growing sector of non-bank credit activity, known as shadow banking, that has escaped the attention of prudential regulators and supervisors. In the financial system, shadow banking plays an essential role. It, for example, adds new sources of finance and provides investors with alternatives to bank deposits. However, it may represent a danger to long-term financial stability. In light of this, the Commission deems it a top priority to investigate the problems raised by shadow banking activities and organizations in more depth. The goal is to actively respond to and participate to the global discussion; to maintain the Union's financial system's resilience; and to guarantee that all financial activities contribute to economic progress. The goal of Commission's Green Paper in 2012 was to take stock of current developments and to offer ongoing views on the issue in order to enable for broad stakeholder input.

In this Green Paper there were a lot innovations included. To begin, it was highlighted that the appropriate authorities must identify and monitor the relevant entities and their actions. Most national authorities in the EU have relevant experience, and the European Central Bank (ECB), European Banking Authority (EBA), European Securities and Markets Authority (ESMA), European Insurance and Occupational Pension Authority (EIOPA), and European Systemic Risk Board (ESRB) have begun to develop shadow banking expertise. However, there is still a pressing need to close the data gaps on the worldwide interconnectivity of banks and non-bank financial organizations.As a result, all EU supervisors, the Commission, the ECB, and other central banks needed to establish permanent mechanisms for the gathering and exchange of information on identification and supervisory activities. This would necessitate tight cooperation among them in order to share information and spot issues quickly.

Second, authorities must establish how shadow banking institutions will be supervised. It should I be carried out at the appropriate level, i.e. national and/or European; (ii) be proportionate; (iii) take into consideration existing supervisory capacity and expertise; and (iv) be incorporated into the macroprudential framework, according to the Commission. On the latter, authorities must be able to comprehend hidden credit intermediation chains, assess their systemic importance appropriately, consider the macro-prudential implications of new products or activities, and map the shadow banking system's interconnectedness with the rest of the financial sector.

Third, proper regulatory measures are required because shadow banking concerns may necessitate broadening the scope and type of prudential oversight. The FSB study cited above suggests some broad principles that regulators should follow when creating and implementing shadow banking regulations. Regulatory measures, according to the FSB, should be focused, proportionate, forward-looking and flexible, effective, and open to evaluation and revision. The Commission believes that these high-level concepts should be considered by the authorities. The Commission also believes that each type of business and/or activity requires a unique strategy. This will necessitate striking the right balance between three possible and complementary approaches: I indirect regulation (regulating the links between the banking system and shadow banking entities); (ii) appropriate extension or revision of existing regulation; and (iii) new shadow banking-specific regulation. Alternative or complementary non-regulatory actions must also be explored in this situation.

The main proposal of the Commission was the indirect regulation of shadow banking activities through banking and insurance regulation. To prevent banks from circumventing current capital requirements and other regulations, the EU has taken major actions indirectly to address shadow banking concerns posed by securitization structures:

• The revision of the EU banking capital requirements directive in 2009 (the "Capital Requirements Directive, or "CRD II"), which Member States were required to transpose into national law by October 2010, required both originators and sponsors of securitized assets to retain a significant portion of their underwritten risks. The order also clarified how liquidity lines and credit risk to securitization vehicles should be handled. Previously, banks were able to avoid posting capital for the associated risks because of the regulations.

• The modifications in the second version of the regulation in 2010 (the so-called "CRD III")4 tightened capital requirements even more, in line with the BCBS's July 2009 recommendations. When investing in complicated resecuritisations, banks have been forced to comply with extra disclosure regulations and maintain considerably more capital to cover their risks from December 2011. This Directive also requires competent authorities in all Member States to consider reputational risks emerging from sophisticated securitization structures or products when assessing individual banks under Pillar 2 of the Basel/CRD framework.

• The Commission has suggested the inclusion of explicit liquidity requirements as of 2015, including liquidity facilities for SPVs and any other goods or services connected to a bank's reputational risk, in its proposal for the current modification to the directive (the so-called "CRD IV")6; and

• In November 2011, the Commission approved an update to the International Financial Reporting Standards (IFRS) to enhance the disclosure requirements for financial asset transfers (related to IFRS 7). The Commission is also looking at the new consolidation requirements (related to IFRS 10, 11 and 12). The goal of these guidelines is to enhance securitization vehicle consolidation and disclosure requirements for unconsolidated participations in "structured entities" such as securitization vehicles and asset-backed finance.

COM also proposed the enlarging the scope of current prudential regulation to shadow banking activities. Existing laws have also been expanded to include new organizations and activities in order to provide greater coverage, address concerns about systemic risk, and make future regulatory arbitrage more difficult.

In the case of investment businesses, this is the strategy used. They are subject to the Markets in Financial Instruments Directive's rules (MiFID). The Commission proposed a recast directive and a regulation to broaden the scope of the framework (for example, to cover all high frequency traders and more commodity investment firms will be brought within the scope of MiFID); increase the transparency of non-equity instruments – which will improve the ability to identify risks from shadow banking – on October 20, 2011; empower competent national authorities and the European Securities and Markets Authority (ESMA) with increased and proactive intervention capabilities, allowing them to manage and reduce shadow banking risks. MiFID does not impose capital requirements on companies that fall within its purview. It does, however, make a cross-reference to the Capital Requirements Directive, putting bank-like prudential regulation on shadow banking firms.

Direct regulation of some shadow banking activities was also brought into discussion**.** Finally, the European Union has already taken steps to actively control shadow banking institutions and operations. When it comes to investment funds, the Alternative Investment Fund Managers Directive (AIFMD) already tackles a number of shadow banking concerns, as long as the organizations in question are classified as alternative investment funds under the directive. Liquidity risks must now be monitored, and asset managers must use a liquidity management system. Activities like as buyback agreements and securities lending will be easier for competent authorities to monitor thanks to new techniques for assessing leverage and reporting requirements.

In the case of MMFs and ETFs, current legislation on undertakings for collective investment in transferable securities may apply (UCITS). In addition, ESMA published recommendations that were effective on July 1, 2011. These rules provide recommendations for these funds to limit eligible assets, set a weighted-average maturity limit, and calculate daily net asset value. Credit rating agencies (CRAs) aren't leveraged and don't participate in maturity transition directly. Nonetheless, because they give ratings to items and entities, they play an essential role in the credit intermediation chain. CRAs are regulated and supervised by the European Securities and Markets Authority (ESMA) in the EU. In addition, the Commission has suggested new legislative steps to improve the credit rating process.

Finally, Solvency II tackles a number of shadow banking concerns by providing extensive insurance regulation based on a risk-based and economic approach, as well as rigorous risk management standards, including a "prudent person" criterion for investments. In particular, it clearly includes credit risks in capital requirements; it adopts a complete balance sheet approach in which all companies and exposures are supervised as a group; and it is as credit risk-conscious as CRD IV. Member States must additionally approve the formation of an insurance SPV under Solvency II. In the case of insurance SPVs, detailed regulations implementing Solvency II are presently being developed, including authorisation and ongoing regulatory obligations pertaining to solvency, governance, and reporting.

Nevertheless, since the start of the financial crisis in 2007, the European Commission has undertaken on the largest financial sector reform in Europe's history. The goal is to restore this sector's long-term health and stability by correcting the flaws and vulnerabilities shown by the crisis. The Commission's strategy include addressing all financial risks worldwide and comprehensively, as well as ensuring that the advantages gained by strengthening particular players and markets are not offset by financial risks migrating to less regulated areas. The impact of the changes would be severely harmed by such regulatory arbitrage.

The Commission has made a significant contribution to the work of the FSB, and the findings presented in this message are entirely compatible with the FSB's views. Following the Green

Paper's consultation, and at a time when financial regulation in Europe is likely to be considerably strengthened and expanded, the Commission intends to lay out its strategy for preventing the emergence of risks in the unregulated system, particularly systemic risks. These risks may develop as a result of the shadow banking sector's interconnection with the regulated financial system.

However, by its very nature, shadow banking is complex and dynamic. It evolves in response to market and regulatory developments. As a result, the Commission asks that national and European authorities maintain continual monitoring and be equipped with the system's supervision instruments. The amorphous nature of shadow banking makes such oversight all the more difficult. Responsibility for supervision is yet to be clearly defined or has a lack of depth when it comes to the competences now assigned to supervisory authorities. As a result, both national and European authorities must take steps to ensure the development of an appropriate and thorough monitoring mechanism.

Each Member State must guarantee that the risks associated with shadow banking are identified and monitored at the national level. This duty is frequently carried out by entities responsible for the financial sector's macro-prudential supervision, if such bodies exist, in conjunction with central banks and sectoral regulatory agencies. The Commission will pay particular attention to the quality of this monitoring and whether the national authorities are cooperating closely. Given the worldwide nature of the shadow banking system, cross-border risk assessments must be possible.

Work is being done at the European level. Work on assessing, identifying, and monitoring organizations and dangers presented by shadow banking is underway at the European level. The ESRB and the European supervisory agencies have done some preliminary study (EBA, EIOPA, ESMA). All of this effort must be accelerated and coordinated to ensure that no source of systemic risk escapes supervisors' notice. It must decrease cross-border chances for evading prudential regulations as well as arbitrage opportunities between financial sectors.

2.2.2 The European Central Bank (ECB)

The European Central Bank (ECB) is the central bank in charge of monetary policy in member nations of the European Union (EU) that have accepted the euro currency. The eurozone is the name given to this region, which now has 19 members. The ECB's primary aim is to maintain price stability in the euro region, therefore preserving the euro's buying power. In 1999, the European Central Bank was created. The ECB's governing council is the body that makes decisions about monetary policy. The council is made up of the six members of the ECB's executive board, as well as the governors of all 19 euro zone nations' central banks. The ECB, as a central bank, dislikes surprises. As a result, if it intends to change interest rates, it will usually give the market adequate warning of the upcoming change through press statements. The governing council meets twice a month, although policy decisions are usually taken only during sessions that include a news conference, which happen every six weeks. The ECB's mandate is to maintain price stability and promote long-term growth. Unlike the Federal Reserve in the United States, the ECB tries to keep annual inflation (increase in consumer prices) below 2%. As an export-dependent economy, the ECB has a strong interest in preventing excessive currency strength, which may jeopardize its export market.

The economy has evolved dramatically since the ECB last reviewed its policy in 2003. One of these shifts is the way businesses support themselves. They used to borrow money from banks all the time. While bank lending remains a major source of finance in the eurozone, alternative options are growing increasingly prevalent. Larger firms, for example, are increasingly financing themselves by issuing corporate bonds. These corporate bonds are then frequently purchased by financial entities that may behave like traditional banks but are not bound by the same regulations. That is why they are referred to as "shadow banks." Because the ECB's monetary policy affects individuals, businesses, and governments through the financial system, it's critical to stay on top of these changes. As part of the central bank's strategic review, the Governing Council examined shadow banking. Because it is critical to keep these developments in the financial system on our radar, the Governing Council considered shadow banking as part of its strategic review. We can guarantee that we make the correct judgments to keep prices constant by continuing to learn how the economy operates.

In the 2013 “Enhancing the Monitoring of Shadow banking”[94], ECB emphasizes the relevance of shadow banking surveillance from a central banking viewpoint – notably in relation to repo and securities lending transactions – and explains how current statistics data for the euro area only give a partial picture. In this context, the paper examines the Financial Stability Board's (FSB) proposals for improving shadow banking transparency, with a particular focus on those relating to the repo and securities lending markets. A preliminary evaluation of the key benefits and obstacles of creating a trade repository for repo transactions in the EU is made, in particular. Firstly, the definition of shadow banking activities is clarified, based on the different approaches that various jurisdictions follow. Secondly, ECB provides with data and statistics based on the quarterly ECB/Eurostat euro area accounts and the ECB’s monetary statistics of that year. Then light is shed on the enhancing of the transparency of repos and securities lending. As regards to that, FSB plays a huge role as it launches the annual monitoring of shadow banking, for which the ECB provides data on the euro area. Central banks are particularly interested in repo transactions because of their role in the transmission of monetary policy and interbank funding. Securities lending and repo markets, on the other hand, allow financial institutions to establish direct exposures to one another, boosting linkages and the risk of contagion.

The main requests of the FSB were regulatory reporting and market transparency, while in its reply to the European Commission’s Green Paper on Shadow Banking, the Eurosystem highlighted the need for enhancing transparency in shadow banking. Enhancing transparency, in the Eurosystem's opinion, is critical at this time to enhance understanding of market segments that are outside of regulatory reach and may pose financial stability risks, as well as for the execution of monetary policy and for financial stability concerns. As a result, the Eurosystem has recommended that an appropriate solution would be for public authorities and the financial industry to collaborate to develop a single database that gathers data directly from infrastructures and custodian institutions.

In the 2020 Working Paper Series “Macroprudential regulation and leakage to the shadow banking sector”[95] of the ECB, studies the effects of tightening commercial bank regulation on the shadow banking sector, by developing a dynamic stochastic general equilibrium (DSGE) model to the research program, which that differentiates between regulated, monopolistic competitive commercial banks and a shadow banking system that relies on funding in a perfectly competitive

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[94] **European Central Bank (2013*): Enhancing the Monitoring of Shadow Banking***

[95] **Stefan Gebauer, Falk Mazelis (European Central Bank (2020*): Working Paper Series- Macroprudential regulation and leakage to the shadow banking sector***

market for investments. Since coordinating macroprudential tightening with monetary easing can limit leakage mechanism, while still bringing about the desired reduction in aggregate lending.

2.2.3 European Systemic Risk Board (ESRB)

In response to the growing financial crisis, the European Systemic Risk Board (ESRB) was created on December 16, 2010. Its mission is to provide macroprudential monitoring of the European Union's financial system in order to help avoid or mitigate systemic threats to the EU's financial stability. It will contribute to the seamless operation of the internal market, ensuring the financial sector's long-term contribution to economic growth.

The ESRB is a European Union (EU) independent body that is a member of the European System of Financial Supervision (ESFS), which is responsible for overseeing the EU's financial system. The European Central Bank hosts and supports the ESRB. It is made up of representatives from the European Commission, the European Central Bank, national central banks, and supervisory bodies from EU member states.

Its most important work on the surveillance of shadow banking activity is the annual issuance of "EU Non-Bank Financial Intermediation Risk Monitor"[96]. The NBFI Monitor evaluates risks and vulnerabilities using an entity-based monitoring methodology that takes into account both investment funds and other financial institutions including financial vehicle businesses, securities and derivative dealers, and loan corporations. An activity-based evaluation of risks and vulnerabilities in securities financing transactions, derivatives, and securitizations, which are utilized across companies and where hazards might develop from the usage and reuse of financial collateral, is also included in the study. The following are the major cyclical hazards that will need to be closely monitored:

- A sharp drop in economic activity in the EU and throughout the world, as well as an unclear economic future
- Rising debt levels, higher credit risk, and the likelihood of rating downgrades are all factors to consider.
- Increased exposure to negative yielding assets, as well as interest rates that are projected to remain low for a longer period of time
- Subdued liquidity and increased volatility in some markets

The usage and reuse of financial collateral in derivatives and securities financing transactions can generate intermediation linkages via which funding liquidity shocks might propagate, according to the NBFI Monitor. Lenders may be motivated to seek extra collateral if the value of securities used as collateral falls sharply, thereby compelling borrowers to liquidate assets to post the additional collateral. Large volumes of derivative transactions have created a complex and interdependent network of exposures that may eventually contribute to the build-up of systemic risk. Investment firms and credit institutions dominate the EU derivatives market, and large volumes of derivative transactions have created a complex and interdependent network of exposures that may eventually contribute to the build-up of systemic risk.

[96] **European Systemic Risk Board (2021):** *NBFI Monitor No 6, EU Non-bank Financial Intermediation Risk Monitor 2021*

The NBFI Monitor 2021 focuses mostly on events in 2020, which were dominated by the coronavirus pandemic (COVID-19). The impacts of the pandemic harmed the expansion of the European investment fund and OFI sectors in the first half of 2020, restricting their ability to provide financial intermediation to non-financial businesses temporarily (NFCs). Non-bank lending has become an important part of managing liquidity and funding needs for bigger NFCs that have access to capital markets. The increase of vulnerabilities that might come from non-bank financial intermediation, such as liquidity and maturity transformation, leverage, and financial system interconnectivity, is examined in this paper. This is the sixth issue in an annual series tracking non-bank financial intermediation, which has grown in importance in recent years and currently accounts for around 40% of the EU financial system. This edition of the NBFI Monitor concentrates on statistics until the end of 2020, with three special sections on the following topics:

- the vulnerabilities of commercial real estate (CRE) funds; data is utilized to analyze the leverage and liquidity of real estate funds in light of the coronavirus (COVID-19) pandemic outbreak;
- The Gamestop, Greensill, and Archegos events, which illustrate search for yield behavior, interconnection, and the use of derivatives to enhance leverage positions;
- the role of insurers in credit intermediation, their interconnectivity with funds, and the derivatives they hold.

The Non-Bank Financial Institutions Monitor also highlights cyclical and structural risks and weaknesses that impact the non-bank sector. The following are examples of cyclical risks: uncertainty about the pace of economic recovery, increasing indebtedness, higher credit risk, and related rating downgrade risks; decoupling of the real economy and financial markets; the brittle character of liquidity in some economies. The following are the most significant structural hazards and vulnerabilities: excessive risk-taking, liquidity transformation, and risks associated with the use of excessive leverage by some types of investment funds and other non-bank financial institutions; domestic and cross-border interconnectedness, as well as the risk of contagion across sectors and within the non-bank financial system; risks associated with the low interest rate environment. These risks and vulnerabilities are analyzed using an entity-based monitoring methodology that takes into account both investment funds and other financial institutions including financial vehicle corporations, securities and derivative dealers, and lending financial corporations. An activity-based evaluation of risks and vulnerabilities in securities financing transactions, derivatives, and securitizations, which are utilized across companies and where hazards might develop from the usage and reuse of financial collateral, rounds out the study.

2.2.4 The European Banking Authority (EBA)

The European Banking Authority (EBA) is the EU body in responsibility of implementing a consistent set of banking laws in all EU countries. It is self-governing, however it reports to the European Parliament, the European Council, and the European Commission. The European Parliament created it in 2010 to replace the Committee of European Banking Supervisors (CEBS). The European Banking Authority (EBA) is responsible for developing regulatory technical standards and recommendations for financial firms operating inside the EU internal market. It has control over lending institutions, investment enterprises, and credit institutions. The European Central Bank (ECB) guarantees that banks adhere to the EBA's standards. In order to reveal large exposures, the European Banking Authority (EBA) proposed regulatory technological criteria for detecting shadow banking entities. The consultation period ends on October 26, 2021 and the proposed standards will be submitted to the European Commission by December 2021 for endorsement. Following the European Commission endorsement, these standards will be subject to scrutiny by the European Parliament and the Council, before being published in the Official Journal of the European Union. The European Banking Authority (EBA) is required under Article 394(4) of the Capital Requirements Regulation (CRR or Regulation 575/2013) to produce draft regulatory technical standards to describe the criteria for identifying shadow banking organizations. The recommendations on limitations on exposures to shadow banking firms, which conduct banking operations outside of a regulated framework, served as the major inspiration for the creation of these draft regulatory standards. To give effect to the mandate of Article 395(2) of the CRR, these recommendations were issued in December 2015. Three primary legal provisions are addressed in the draft regulatory technical standards:

- Criteria for identifying both shadow banking and non-shadow banking entities
- Definition of banking activities and services
- Criteria for excluding entities established in third countries from being deemed as shadow banking entities.

Special measures have been incorporated in the proposed regulatory standards to account for the peculiarities of funds regulated under the UCITS Directive and the AIFM Directive. Money market funds are classified as shadow banking institutions because of the significant liquidity difficulties that afflicted them during the COVID-19 crisis, as well as current talks at the EU and international levels to improve their regulation. The draft regulatory technical standards take into account the status of entities based in foreign countries and differentiate between banks and other companies.

On July 2021 EBA issued the "Consultation Paper on Draft Regulatory Technical Standards on criteria for the identification of shadow banking entities under Article 394(4) of Regulation (EU) No 575/2013". The EBA is required under Article 394(4) of the CRR to produce draft regulatory technical standards that describe the criteria for identifying shadow banking organizations. The EBA is required to consider international developments and internationally agreed standards on shadow banking, as well as whether (a) a relationship with an individual entity or a group of entities may pose a risk to the institution's solvency or liquidity position; and (b) entities subject to solvency or liquidity requirements similar to those imposed by this Regulation and Directive 2013/36/EU should be entirely or partially exempted from the obligation. Regulation (EU) No 2019/876 amending the CRR has modified slightly the reporting obligation of Article 394(2) of the CRR. Where it said before "An institution shall report […] its 10 largest exposures on a consolidated basis to unregulated financial entities […]" it now states "an institution shall report […] its 10 largest exposures to shadow banking entities which carry out banking activities outside the regulated framework on a consolidated basis […]". This amended obligation becomes applicable on 28 June 2021. The EBA must submit the draft RTS to the Commission by June 28, 2020, according to the CRR. The EBA, on the other hand, implemented roadmaps with a defined timeline for delivering regulatory deliverables as a result of Regulation (EU) No 2019/876 modifying the CRR in November 2019. As a result, by December 2021, the EBA shall submit these draft RTS to the Commission.

The recommendations on limitations on exposures to shadow banking organizations that conduct banking operations outside of a regulated framework set out in Article 395(2) of Regulation (EU)

No 575/2013 served as the major inspiration for the creation of the draft RTS. Article 395(2) of the CRR mandated the publication of these recommendations, which were released in December 2015.

The large exposure (LE) framework is a mechanism for minimizing a credit institution's greatest possible loss in the case of a sudden failure of a customer or group of related clients, if accessible. The LE framework provides as a backup to the regulatory capital structure by requiring credit institutions to assess and restrict the level of their LE in proportion to their Tier 1 capital. In this way, the LE framework contributes to the financial system's stability by lowering the danger of contagion across credit institutions. The BCBS believes that the LE framework is an effective tool for reducing the risk of contagion between globally systemically significant institutions and thereby promoting global financial stability. In addition, the LE framework is viewed as a helpful instrument for contributing to the improvement of the shadow banking system's monitoring and regulation in connection to LE. The regulations for treating exposures to funds, securitization structures, and collective investment undertakings (CIU) in particular, as well as the need for banks to use a look-through approach (LTA) where applicable, all contribute to accomplishing this goal. Regulation (EU) No 575/2013 establishes the LE framework for institutions in the European Union (the CRR). The EU's LE framework was the basis for the Basel Committee on Banking Supervision's (BCBS) large exposures standard (LEX), which was implemented in 2019. It was supplemented by technical standards and recommendations established by the EBA.

Following the passage of Regulation (EU) No 2019/876 (CRR2) modifying the CRR, the LE regulations in the CRR were changed. One of the outcomes of these modifications has been a closer alignment of the Union's LE framework with the LEX, such as the use of Tier 1 as a reference rather than eligible capital. In addition to dedicated rules for the treatment of exposures with underlying assets (CIUs, securitisation structures) and the requirement for institutions to use a look-through approach, the reporting obligations in relation to an institution's 10 largest non-bank exposures, formerly known as "unregulated financial entities," were clarified by using the term "shadow banking entities" already introduced to the CRR (see Article 395(2) of the CRR) and specifying the types of non-bank exposures that must be reported.

The EBA evaluated the shadow banking system in its recommendations, stating that it plays a complementary function to regular banking by extending loan access to promote economic activity or by enabling market liquidity, maturity transformation, and risk sharing, therefore boosting real-economy growth. However, the financial crisis highlighted flaws in the shadow banking sector that jeopardized financial system stability, such as a strong dependence on short-term wholesale borrowing and a general lack of transparency, according to the report. The EBA raised various concerns about shadow banking organizations in this regard, including a) run risk and/or liquidity issues; b) interconnectivity and spillovers; c) excessive leverage and procyclicality; and d) opaqueness and complexity.

Given that the CRR does not define the words' shadow banking entities,' 'banking activities,' and 'regulated framework,' the EBA guidelines created a definition for these terms. The criteria were consistent with the earlier EBA Opinion and Report on the perimeter of credit institutions and identified organizations that were not subject to proper prudential regulation and supervision and so posed the highest risk.

Certain entities are excluded from the purview of the EBA guidelines' approach to identifying shadow banking firms. Excluded entities are those that operate within a prudential framework that is both suitable and strong. Credit institutions, investment businesses, insurance organizations, and other entities created in third countries that are subject to prudential standards deemed similar to those in the Union, for example, are excluded from the EBA recommendations under this approach. Furthermore, the recommendations do not apply to organizations subject to consolidated prudential supervision (whether as a result of EU legislation, relevant national legislation, or an analogous third-country regulatory framework). As a result, the EBA recommendations concentrate on institutions' exposures to companies that offer the highest risks, both in terms of the direct danger of being exposed to such organizations and the risk of credit intermediation taking place outside of the regulated framework. The EBA guidelines were created with several factors in mind, including the European Commission's assessment of the current scope of application of EU banking prudential rules as part of the Commission's broader workstream on shadow banking; the BCBS' work on the scope of consolidation for prudential regulatory purposes to ensure all banks' activities are appropriately captured in prudential regulations; and the European Commission's assessment of the current scope of application of EU banking prudential rules as part of the Commission's broader workstream on shadow banking.

In the context of the identification of shadow banking entities for regulatory reporting, the CRR does not provide a definition of the term ‘banking activities’, while the Commission Communication on shadow banking states that shadow banking is a system of credit intermediation that involves entities and activities outside the regular banking system. The CRR makes no mention of what constitutes the regulated framework. So, these draft RTS depend heavily on the EBA recommendations to guarantee a uniform application of the LE framework across the Union from a prudential standpoint.

Consequently, the EBA draft RTS includes: Criteria for identifying the entities, Banking services and activities, and Crtieria for excluding entities established in third countries from being deemed as shadow banking entities.

2.2.5 European Securities and Markets Authority (ESMA)

ESMA is an independent European Union Authority, which works in the field of securities legislation and regulation to improve the functioning of financial markets in Europe, strengthening investor protection and co-operation between national competent authorities.

The idea behind ESMA is to establish an "EU-wide financial markets watchdog". One of its main tasks is to regulate credit rating agencies. In 2010 credit rating agencies were criticized for the lack of transparency in their assessments and for a possible conflict of interest. At the same time, the impact of the assigned ratings became significant for companies and banks but also states.

ESMA issues reports like Technical standards , for example under EMIR and SFTR, regulations we are going to talk about later. In the context of the “Lamfalussy” process of making of European law in four stages, the three ESA’s (EBA, ESMA, EIOPA) adopt recommendations and guidelines for the consistent implementation and effective supervision of the legislative acts issued at level 1, as well as technical standards (soft law) at level 2, on which Commission is based in order to adopt delegated and implementing acts. Finally, ESMA, in collaboration with the other European supervisory authorities (EBA, EIOPA), and the European Securities and Markets Authority

(ESRB), has increased market surveillance to identify trends and vulnerabilities in the EU's financial system, putting us in a better position to deal with emerging risks in shadow banking than we were previously.

2.2.6 Regulations

2.2.6.1 Alternative Investment Fund Managers Directive (AIFMD)

The Alternative Investment Fund Managers Directive (AIFMD) is an EU law that applies to alternative investments, many of which were virtually unregulated before to the global financial crisis of 2008-09. The directive establishes marketing guidelines for soliciting private money, remuneration regulations, risk management and reporting, and overall responsibility.

The AIFMD's main objective is to safeguard investors while also reducing some of the systemic risk that alternative investment funds might represent to the European Union and its economy.

Alternative investment vehicles such as subprime mortgages were at the heart of the global financial crisis. The EU moved to regulate the alternative investment industry, notably hedge funds, real estate funds, and private equity, after the global financial crisis. On a worldwide basis, many of these vehicles were mainly uncontrolled, and in the EU, they were practically unregulated.

In 2013, the EU introduced the AIFMD. The directive's goal, rather than regulating the funds themselves, is to regulate the fund managers.

AIFMD legislation applies to any manager operating a fund in the EU, regardless of whether the fund is based within or outside the union's borders. The AIFMD covers institutional funds that were previously exempt from EU financial rules requiring disclosure and openness, such as the Markets in Financial Instruments Directive (MIFID), which intended to improve transparency throughout the EU's financial markets.

This directive has two primary goals. First and foremost, it aims to safeguard investors by enforcing tougher guidelines for how and what information is provided. Conflicts of interest, liquidity profiles, and an independent asset assessment are all part of this. Alternative investment funds are solely meant for professional investors, according to the directive, however certain member states may choose to make these funds available to public investors if extra protections are implemented at the national level.

The second goal is to mitigate some of the systemic risks that these funds may bring to the European Union's economy. To accomplish so, the AIFMD requires that remuneration policies be designed in such a manner that they do not promote excessive risk-taking, that financial leverage be reported to the European Systemic Risk Board (ERSB), and that the funds have effective risk management systems that account for liquidity.

2.2.6.2 Capital Requirements Regulation and Credit Requirements Directive (CRR/CRD)

The Credit Requirements Directive (CRD IV) and the Capital Requirements Regulation make up the CRR/CRD regulatory framework (CRD package) (CRR). By enhancing banks' solvency and liquidity positions, as well as risk management, the regulatory framework attempts to increase their ability to withstand risks.

On June 7, 2019, the European Parliament and the Council published Regulation (EU) No 2019/876 (CRR2) and Directive (EU) 2019/878 (CRDV) to strengthen the resilience of EU credit institutions (CRDV).

The key points of the reform package are:

- a binding Leverage Ratio (LR) to prevent institutions from excessive leverage and a leverage ratio G-SIB buffer for institutions identified as being of global systemic importance
- a binding Net Stable Funding Ratio (NSFR) to address the excessive reliance on short-term wholesale funding and to reduce long-term funding risk
- more stringent rules concerning the minimum requirement for own funds and eligible liabilities, applying to institutions identified as global systemically important institutions (G-SII) and other large banks
- for non-complex, small banks, reduce the administrative burden linked to some rules in the area of remuneration (namely those on deferral and remuneration using instruments, such as shares), which appear disproportionate for these banks
- a new market risk framework for reporting, including measures to ease reporting and disclosure requirements and to simplify rules related to market and liquidity risks for small and structurally simple banks
- changes in the macro-prudential toolkit (structural macro-prudential buffers (OSII-and systemic risk buffer) are added together and pillar 2 add-ons can not be used as a macro-prudential tool)
- several other actions designed with a view to the EU's special characteristics. These include measures encouraging investments to public infrastructure projects and SMEs or a credit risk framework easing the removal of non-performing loans from the balance sheet.

Regulation (EU) 575/2013 of the European Parliament and of the Council of the European Union on prudential standards for credit institutions and investment enterprises ("CRR") creates a framework with stricter measures for significant exposures.

Article 392 CRR defines large exposures as an institution's exposure to a customer or group of related clients with a value equal to or more than 10% of its eligible capital (i.e. Tier 1 capital plus Tier 2 capital). Reporting requirements and quantitative restrictions apply to large exposures.

The European Banking Authority ("EBA") was obliged under Article 395(2) CRR to produce guidelines setting appropriate limitations on exposures to shadow banking organizations.

In the absence of a definition in the CRR, the Guidelines define "shadow banking entity" as an entity that engages in one or more credit intermediation activities (such as maturity transformation, liquidity transformation, leverage, credit risk transfer, and so on) and is not an excluded undertaking (i.e. credit institutions, investment firms, central counterparties, payment institutions, entities which carry out intermediation activities on an intra-group basis only, etc.).

2.2.6.3 European market infrastructure regulation (EMIR)

Instead than using a centralized stock exchange, OTC markets allow dealers to trade stocks, bonds, derivatives, and debt instruments directly with one another. OTC transactions are typically conducted by small businesses, and dealers operate as their own market makers, quoting and negotiating prices with one another via the internet or over the phone rather than on a physical trading floor.

Because of the nature of OTC transactions, they are generally less transparent and subject to less regulatory scrutiny than regular stock exchanges. Following a promise by G20 members to regulate OTC derivatives in 2009, EMIR laws were enacted to address such vulnerabilities and guarantee that financial criminals are less able to use OTC markets to launder money or support terrorist operations.

After EMIR was enacted, OTC transactions across the EU became subject to new compliance requirements. Under these rules:

- All OTC derivatives are subject to reporting requirements.
- Certain types of OTC derivatives must be processed through a Central Clearing Party (CCP).
- OTC derivatives that do not go through a CCP must be subject to risk mitigation.
- All entities that are party to derivative contracts must report every trade to the relevant trade repository
- CCPs must comply with certain business conduct requirements in order to ensure that transactions are handled correctly and that transaction data is publicly available.

The risk mitigation measures mandated by EMIR are intended to guarantee that OTC market participants may trade safely and securely. Rules for dispute settlement, prompt confirmation of OTC transactions, and compression and reconciliation of OTC portfolios are among the risk reduction criteria. EMIR reporting rules are strictly enforced: fines for non-compliance vary by EU member state but can exceed €5 million.

Several types of financial entities are required to comply with EMIR:

- All financially related counterparties and non-financially related counterparties that are above the clearing threshold are required to implement the relevant risk mitigation techniques and abide by clearing and reporting obligations.
- Non-financially related counterparties that are below the clearing threshold must also complete certain mandated risk mitigation techniques, such as regulating disputes, confirming OTC transactions in a timely manner, and compressing and reconciling OTC portfolios. Non-financially related counterparties must comply with certain reporting obligations.
- Additionally, any firms dealing with OTC derivatives must comply with risk mitigation, reporting and clearing requirements. CCPs and trade repositories have their own EMIR compliance requirements.

2.2.6.4 Markets in Financial Instruments Directive (MIFID)

On 3 January 2018, the EU's updated Markets in Financial Instruments Directive (MiFID) and Markets in Financial Instruments Regulation (MiFID II) took effect. MiFID II, which was implemented in reaction to the financial crisis, aims to make Europe's financial markets more robust, transparent, and investor-friendly. The European Markets Infrastructure Regulation (EMIR), which aims to make the EU's OTC derivatives market safer, and the Securities

Transactions Regulation (SFTR), which aims to regulate the EU's shadow banking industry, are two examples.

MiFID introduced additional measures, including as pre- and post-trade transparency requirements, and established the behavior criteria that financial firms must follow. MiFID has a specific scope that focuses largely on equities. The directive was drafted in 2004 and has been in effect throughout the EU since 2007. In 2018, MiFID was superseded by MiFID II.

MiFID's declared goal is to provide a single, strong regulatory framework that safeguards investors for all EU members. MiFID was implemented a year before the financial crisis of 2008, but revisions were made in response to the crisis, which resulted in MiFID II. One flaw in the earlier versions was that each member state's regulatory approach to nations outside the European Union was left up to them. Because of the simpler regulatory monitoring, certain businesses outside of the EU may have a competitive edge over those inside the union.

MiFID II, which was introduced in January 2018 and unified the requirements for all businesses with EU clients, resolved this issue. MiFID focused largely on equities, which was viewed as a restriction because it did not cover the broad array of financial instruments accessible in the market, such as OTC derivatives.

OTC transactions are made between two parties without the need of an exchange to act as a middleman. As a result, there was less regulatory supervision and transparency for those involved in OTC transactions. MiFID II introduced a slew of new financial instruments under its umbrella. The Markets in Financial Instruments Law (MiFIR) is a regulation, not a directive, that works in tandem with MiFID and MiFID II to expand the code of conduct beyond equities to other forms of assets.

2.2.6.5 Securities Financing Transactions Regulation (SFTR)

On January 12, 2016, the Securities Financing Transactions Regulation (EU) 2015/2365) ("SFTR") went into effect. The SFTR regulates securities financing transactions ("SFTs"), total return swaps, and the reuse of assets obtained under a collateral arrangement, and it is part of an EU-wide effort to address the "shadow banking" sector's alleged lack of transparency and oversight.

New requirements are imposed by the SFTR in three major areas:

- Securities financing transactions must be reported to approved or recognized trading repositories (the Reporting Obligation)
- Documentary and operational requirements for all collateral reuse arrangements (not just those relating to securities financing transactions) (the Collateral Reuse Requirements),
- as well as transparency and disclosure requirements for UCITS and alternative investment funds (AIFs) in relation to securities financing transactions and total return swaps (the Transparency and Disclosure Requirements) (the Transparency to Fund Investors Requirements).

The SFTR defines a "SFT" as: (a) repurchase transactions; (b) lending and borrowing of securities or commodities; (c) buy-sell back and sell-buy back transactions; and (d) margin lending transactions; each as more fully defined in the SFTR, but in summary, each involves the raising of funds using assets owned by a counterparty to the transaction.

The SFTR applies to both financial and non-financial counterparties (such as investment firms, credit institutions, insurance undertakings, and central counterparties), subject to specific exceptions.

Counterparties based in the EU but operating through a non-EU branch, as well as non-EU counterparties operating through an EU branch, are covered. ManCos , UCITS investment firms, and AIFMs are all covered by the SFTR.

Article 4 requires counterparties to an SFT to report details of any SFT they have concluded, modified, or terminated to a trade repository no later than the next working day after the transaction is completed, modified, or terminated, or to the European Securities and Markets Authority ("ESMA") if no trade repository is available.

2.2.6.6 Undertakings for the Collective Investment in Transferable Securities (UCITS)

The European Commission's Undertakings for the Collective Investment in Transferable Securities (UCITS) is a legal framework that establishes a uniform framework for the management and marketing of mutual funds across Europe. UCITS funds can be registered in Europe and offered to investors all over the world, all while adhering to the same set of regulatory and investor protection standards. Individual European nations exclude UCITS fund providers that fulfill the criteria from national regulation.

2.2.6.7 Payment Services Directive 2 (PSD2)

The European Union's PSD 2 Directive is a notable example of rules influencing a specific area of shadow banking. This regulation package permits other parties to participate in activities that were previously solely available to banks. It expands the legal framework for providing payment services by outlining the regulations for banks, payment processing institutions, businesses that offer store cards, fuel cards, independent ATM operators, and other non-banking payment service providers. This legislation was enacted in reaction to substantial developments and innovations in the retail payments business, as evidenced by the rapid expansion of electronic payments and payments made via mobile devices, as well as the appearance of new forms of payment services. The PSD 2 package standardizes and unifies the European payment industry, which is intended to help the EU economy develop quicker while also increasing consumer security and encouraging the introduction of transparent and inexpensive payment services.

2.3 USA

In the United States, the shadow banking business is essential in supplying growing credit demand. Although it has been claimed that shadow banking's disintermediation might improve economic efficiency, its operating outside of regular banking rules raises worries about the financial system's systemic risk. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 focused primarily on banking regulations, leaving the shadow banking sector largely unaffected. While the Act increased financial institutions' responsibility for marketing exotic financial products, most non-banking activities remain unregulated. Non-banks, such as broker-dealers, may be subject to identical margin requirements as banks, according to the Federal Reserve Board. Meanwhile, outside of the US, China began releasing instructions in 2017 specifically addressing hazardous financial activities including excessive borrowing and stocks speculating.

According to Claessens et al. (2012)[97], there are three opposing viewpoints on shadow banking regulation: 1) Shadow banking should be integrated into or merged with traditional banking and brought under the same regulatory framework as traditional banking; 2) shadow banking activities should be separated from traditional banking; and 3) monetary authorities should place a cap on the supply of private assets. Each method has its own set of drawbacks, which Claessens et al. discuss in depth (2012). The Obama administration presented the Dodd-Frank Wall Street Reform and Consumer Protection Act, often known as the "Dodd-Frank" (D-F) Act, in 2010 to create a safe environment for depositors and investors. The D-F Act has been named the most important piece of financial legislation passed in the United States since the Great Depression of the 1930s. The financial crisis of 2007/08, which triggered a full-fledged recession and threatened to spiral into a Great Depression, provided the impetus for the Dodd-Frank legislation. D-F regulation attempted to address the following issues in the banking industry that contributed to the recent financial crisis[98]:

First, banks employed a strategy known as'regulatory arbitrage,' in which they redesigned goods or hid behind alternative company structures to reduce the impact of rules. One of the main aims of the D-F Act was to govern banks based on the real activities they do, regardless of whether they were commercial or investment banks.

Second, the DF Act gave the government powers to deal with banks that were either in danger or on the edge of bankruptcy, preventing a repeat of the Lehman Brothers or AIG sagas. These tec hnologies will allow banks to depart in a controlled manner, with minimal impact to other financ ial markets.

Third, in order to address the moral hazard problem of “too big to fail,” the D-F regulation 1) increased the minimum capital requirements for all banks, 2) encouraged banks to hold more liquid assets, and 3) gave authorities more authority to shut down large, complex banks and other financial institutions, effectively eliminating the need for bailouts. Very big banks, known as 'Systematically Important Financial Institutions,' were subjected to higher capital requirements (SIFIs). SIFIs are financial institutions with a market capitalization of more than $50 billion. During the previous financial crisis, the government bailed out certain huge banks that were deemed "too big to fail" at a significant cost to taxpayers. To avoid moral hazard issues arising from central banks' ultimate bailout of such institutions, better monitoring and regulations were thought required. Financial institutions were subjected to stricter rules, including internal controls and more rigorous stress testing, in addition to greater capital requirements.

Fourth, the formation of the 'Financial Stability Oversight Council' to detect early risks to financial stability was one of the legislation's main accomplishments. In addition, the 'Office of Financial Research' was established to assist the oversight council with research and statistics. Another important D-F regulation milestone was the establishment of the 'Consumer Protection Bureau,' which was created to safeguard customers from financial institution abuses and unethical activities.

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[97] **Stijn Claessens, Zoltan Pozsar, Lev Ratnovski, and Manmohan Singh:** *Shadow Banking: Economics and Policy*, IMF STAFF DISCUSSION NOTE, December 4, 2012 SDN/12/12

[98] **Michael S. Barr (2012):** *The Financial Crisis and the Path of Reform,* University of Michigan Law School

Fifth, the shadow banking industry has been subjected to extensive regulation. In the previous financial crisis, derivatives traded in the shadow banking industry were crucial.

Many provisions relevant to shadow banking are included in Dodd-Frank; for example, hedge funds must now register with the Securities and Exchange Commission (SEC), much over-the-counter derivatives trading will be moved to exchanges and clearinghouses, and the Federal Reserve will regulate all systemically important institutions. Retail lenders will now be regulated uniformly at the federal level by the new Consumer Financial Protection Bureau, which is situated within the Federal Reserve. Despite the fact that Dodd-Frank takes some positive steps in the regulation of shadow banking, there are still vast gaps where it is virtually unregulated. The regulation of MMMFs, securitization, and repos are three significant gaps.

Fortunately, the law also established the Financial Stability Oversight Council, which has broad authority to detect and manage systemic risks, including the authority to suggest major regulatory changes if they are judged essential for financial stability. We shall argue that the three sectors mentioned above had a key part in the recent crisis and that they require further regulation. Despite the fact that Dodd-Frank takes some positive steps in the regulation of shadow banking, there are still vast gaps where it is virtually unregulated. The regulation of MMMFs, securitization, and repos are three significant gaps.

Unlike the FSB, the US does not have a section dedicated to shadow banking. In the United States, the objective is to identify and categorize organizations and actions that are especially linked to triggering and causing systemic hazards. As a result, some of the entities uncovered may be part of the shadow banking system, but not all of them are. The Wall Street Reform and Consumer Protection Act, sometimes known as the Dodd-Frank Act, is the primary regulatory framework for dealing with the repercussions and preventing further failures.

This Act tackles the problem of shadow banking by establishing a special body, the Financial Stability Oversight Council (FSOC), whose mission is to monitor and identify institutions and actions that may create difficulties. However, instead of really locating and addressing the flawed institutions, FSOC has focused on the causes and procedures that strive to answer how to determine these dangerous actions and organizations. Furthermore, the actions that can be taken are limited to non-binding recommendations given to regulators such as Congress.

Another aspect ascribed to the United States' efforts to control the shadow banking system is the adoption of a "one size fits all" approach. However, there are a number of issues with this approach, particularly in relation to the shadow banking industry, its scale, diversity of organizations, and behaviors involved. Because the entities, business strategies, and financial instruments used in the parallel banking system are so diverse, the causes for and repercussions of risks connected with each of these factors are varied. Furthermore, these entities' performance, liabilities, and regulations are already governed by a complex set of laws or, if not, must be controlled separately.

Since the Dodd-Frank Act was enacted in 2010, the FSB's suggestions and observations have not been included in the law, and as a result, some of the problems associated with shadow banking may have gone unnoticed. The major focus of the Dodd-Frank Act, on the other hand, is to monitor and limit the risks to the financial system. Many additional councils and organizations are involved in the regulation. The Dodd-Frank Act, for example, requires the Federal Reserve System to use macro prudential methods in its supervision and regulation, with an emphasis on monitoring systemic risks and deciding how to avoid or deal with financial panic events

Despite the fact that the Dodd-Frank Act proposes several modifications and complicated laws for the financial system in order to eliminate risks and other concerns resulting from shadow banking, the planned remedies do not cover all of the essential features. The Dodd-Frank Act, for example, scarcely acknowledges and addresses the system's big financial firms. The Act has created a slew of new laws to increase disclosure, risk retention, and credit rating, but with the focus still on "conventional" banking, is it feasible that a similar situation would arise with clients opting for the less regulated shadow banking sector?

Though legislators' aims are to make the financial system safer and more stable, the law's provisions are overly broad and may not be as successful as they may be. The Dodd-Frank Act did not bring an end to the regulation of institutions that pose systemic hazards to the financial system's health. This Act necessitates the creation of hundreds of new regulations and requirements by a variety of regulatory agencies. Only roughly a third of the essential regulations have been completed after the Act has been in effect for two years.

As a result, no clear concept can be obtained on how the Act will operate or if it will work as anticipated while it is still in the process, leaving the financial market with uncertainty about the rules and measures that will be applied to it.

However, politicians in the United States have taken a different approach. To be more specific, shadow banking is supposed to be controlled indirectly through the stringent regulatory structure that applies to "regular" banks. This approach anticipates the practice of amended accounting rules, including the consolidation of balance sheets, to regulate the interaction between shadow banks and "traditional" banks, as well as to limit the nature and extent of bank acquaintance with shadow banking entities, similar to the FSB's approach.

2.4 Obstacles and the way forward

The main reason why the shadow banking system has escaped regulation primarily because unlike traditional banks and credit unions, these institutions do not accept traditional deposits.

Despite the fact that shadow banking played a significant role in the previous global financial crisis, the subsequent tightening of laws and capital requirements primarily impacted the banking industry, which is currently losing profitability and capacity to fund the economy as a result of the increased responsibilities. As a result, shadow banking is gaining traction among traditional financial institutions. Without the constraints of legislation, the latter is expanding into other areas, notably inside multinational technological companies like Google, Amazon, Facebook, and Apple (GAFA), who also profit from large-scale tax optimization.

Shadow banking now accounts for about a third of global financial assets, with roughly half of them posing a systemic danger. Nearly a third of these risky operations occur in the United States, which was the epicenter of the previous financial crisis and from which it spread over the globe, wrecking havoc on individual nations' economy. Furthermore, shadow banking operations that pose a systemic risk and are now unregulated account for around three-quarters of the GDP of the examined nations, implying that they will be unable to withstand a potential shock. This problem appears to be worsening, and it may become the source of the next great catastrophe. Financial supervisory agencies often operate within restricted national borders and are further dispersed into individual sectors, making the global character of the markets a difficulty for regulators.

There is a potential of a crisis due to a lack of effective regulation. Excessive regulation, on the other hand, slows economic growth, which is why it's critical to achieve the right balance in the regulatory framework. We are presently dealing with extensive banking supervision, whereas a large portion of the financial industry, which poses a systemic danger, is not subject to equivalent restrictions. Stability laws should include all market segments, including shadow banking, from the perspective of financial system security.

Consequently, despite the current difficulties, we appear to be inexorably approaching a point where, due to the rapidly growing size and scale of shadow banking, as well as the increasing systemic risk, it will simply become necessary to cover this area of activity with a regulatory framework similar to that used in the traditional financial system. This should level the playing field for all market participants, removing the existing advantage enjoyed by shadow banking and assisting in the improvement of financial stability.

3. Conclusion

At first, we examined the definition of shadow banking through the work of ESRB, EBA, COM and most important of all, of FSB, taking into account two aspects: the entities involved and their activities they perform, as well as their sources of funding. The entities include Special purpose entities (SPE), Money Market Funds, Investment funds, Finance companies and securities entities, Insurance and reinsurance undertakings, and the activities include banking credit intermediation. In the context of the sources of funding, it is worth mentioning that the shadow banking system is organized around securitization and wholesale funding. These functions include securities financing transactions (SFT), securitization, as well as derivative markets. It is important to recognise that these financial intermediaries have only recently been labelled shadow banking institutions, and cannot be considered as a uniform system with a collective purpose. What the various intermediaries have in common is that they provide a wide range of innovative financial products to the financial markets. Some of these intermediation efforts have taken on an aggressive tone in the past. As a result, complicated structured products or unexpected counterparty exposures are common.

Subsequently, we went through the historical evolution of the shadow banking system, especially through the origins and growth in the past century, with attention to the global financial crisis of 2007-2009, and its results. Last but not least, we follow the events of Covid-19 pandemic and how it affected the shadow banking system. Then we examine the data of surveys, which show the size of this system and the role it plays in the global economy.

We continue with the reference to the benefits and risks, which leads us to the next big step, which is the effort to address these problems and risks from the shadow banking system, in the EU and in the U.S.A., with the adoption of regulatory measures both in international and national level.

Afterwards, the focus is shifted to the regulation and supervision of shadow banking at international level. The work of international for and organisations is highlighted, such as Basel Committee on Banking Supervision (BCBS), Financial Stability Board (FSB), as well as the International Financial Reporting Standards (IFRS). Then the European level of regulation is mentioned, especially through the performance of Commission, European Central Bank (ECB), European Systemic Risk Board (ESRB), European Banking Authority (EBA), and European Securities and Markets Authority (ESMA). The regulations adopted at European level is also worth mentioning such as Alternative Investment Fund Managers Directive (AIFMD), Credit Requirements Directive (CRD IV) and the Capital Requirements Regulation that make up the CRR/CRD regulatory framework (CRD package), European market infrastructure regulation (EMIR), Markets in Financial Instruments Directive (MiFID), Securities Financing Transactions Regulation ("SFTR"), Undertakings for the Collective Investment in Transferable Securities (UCITS), Payment Services Directive 2 (PSD2).

Finally, of big importance are also the attempts of regulation at U.S.A. level through the Dodd-Frank Act.

Shadow banking may simply be thought of as one of the most recent developments in financial intermediation, a natural progression in which changing market conditions lead to the development of novel goods and services. Non-bank institutions have been able to compete with banks in the provision of financial services, often more effectively and at a lower cost, thanks to technological advancements. The shadow banking organizations that were the subject of this thesis already make a significant contribution to the global financial system, and future legislation should focus on making the system more robust in order to capitalize on its advantages, rather than outlawing it.

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