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What Printing Money Really Means

A Close Look at the Monetary System and Its Effects

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Introduction:

A man walks down Times Square dressed in a worn out blue jacket. After having glanced at the big commercial screens which are impossible to miss he proceeds to buy an ice cream at the small ice cream track passing by. He pays for the cone with some coins and then proceeds to walk across the square. This time his eyes stoop at a big shop window. Inside, a new blue leather jacket which, luckily enough, happens to be on sale. "What the hell" he thinks, before entering the shop. After all, its his free day and a text message informed him this morning that his salary had been transferred into his bank account. After swiping his credit card he exits the shop and start heading towards home when he sees a big crowd of well dressed people going in the same direction. Nothing unusual on a busy Tuesday morning in New York City, except from the fact that those people are carrying card boards with personal belonging inside. Lehman Brothers went bankrupt the day before in what remains up until this day the biggest bankruptcy in U.S. history. Shocked by the event he heads home.

He would be even more bewildered to know that the money he had used to pay for the ice cream cone is, in reality, just debt. He probably wouldn't even believe that the money in his bank account isn't money at all but something else. As a result, when he swiped the credit card to buy the jacket he did not send any money to the shop. A completely different transaction occured.
Lastly, he probably would come to see the world with different eyes if he realized that the bankruptcy that shocked him so much is linked to the way he paid for the cone, and, most importantly, the jacket.

That man is you and me. It's every men's action when it comes to economic transactions. Understanding them and explaining their consequences is fundamental to understand and improve today's World.

This thesis is divided into 5 chapters. The first one takes a close look at what money was in ancient societies and the misconceptions we have today regarding its meaning.
The second part of the chapter is dedicated to the history of banking with a focus on central banking in Britain and the United States.
The second chapter is entirely dedicated to explaining how money is created in today's world and the processes which regulates it. For its sophistication and evolution, the U.K has been taken as the leading example.

The third chapter looks at the effects this system has in the World and in the real economy. Three relationships are analyzed: inflation, wars and economic growth.

The fourth chapter delves into one of the most important issue of today's world: inequality. It analyzes the main elements that causes it while providing a strong connection to the creation of money.

The fifth chapter indicates policy guidelines to address fundamental issues within the current system. I then propose a complete alternative monetary system in a best-case scenario.

The conclusion is the Author's opinion on the current monetary system.

1. A History of Money and Banking

There has never been a time in history in which money has been more prevalent. It is present in virtually every aspect of our lives and it represents the way through which we purchase goods. It is a driving force for many as we exchange our time for it in order to make a living. Today money is used as “a store of value, unit of account and a medium of exchange[1]”.
As “store of value” is intended something that can maintain its value through time and thus cannot be dissipated. The unit of account implies the creation of a price based system in which goods and services can be bought and sold. Its function as a medium of exchange is “something people can use to buy and sell from one another”[2].

1.1 A Time Before Money

The most important step to understand money is to look at its history: how it came to be, how it evolved and why. Without it, modern economies cannot exist. The most common belief is that money is a natural evolution of barter systems which can also be seen in ancient societies. This view was first expressed by Aristotle and represented again by Adam Smith’s book “The Wealth of Nations”. Smith went on to stress that the creation of money is part of human nature “ the division of labor as a consequence of a certain propensity in human nature to truck… barter and exchange one thing for another”[3]. According to this view, as the division of labour started to take place in societies, people began to need what others produced. At first, barter was used but then, to avoid problems such as the needed relevance for both of the products exchanged by the agents, specific items in a given society started to represent the relevant medium of exchange. Some societies used shells , for example, the entire continent of Africa up until the XIX century and south-east Asia 3000 years ago[4] but then they shifted to metals of no easy availability. The most preferred ones, depending on the historical period analyzed, were gold and/or silver.

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[1] “Amundson, Irena, and Ceyda Oner. "Back to Basics: What Is Money? - Finance & Development, September 2012." International Monetary Fund, n.d. Web.

[2] “Amundson, Irena, and Ceyda Oner. "Back to Basics: What Is Money? - Finance & Development, September 2012." International Monetary Fund, n.d. Web.

[3]Smith, Adam. The Wealth of Nation. London: Dent, 1947. Print.

[4] “Museum of the National Bank of Belgium." Cowry Shells, a Trade Currency.n.d. Web.

As a result money is not to be considered a key element of society “ There cannot, in short, be intrinsically a more insignificant thing, in the economy of society than money; Except in the character of a contrivance for sparing time and labour”[5].

This vision is very well represented to this day and has entered our mainstream view of how we think about money. It is simply something we need to get something else we want. The reality is a lot more complicated than that. In fact, it distracts us from truly perceiving what money is today and has distorted its meaning. Understanding the history of one thing is the first and most important step to understand its current function and subsequent evolution.

If we look at societies throughout history in which money was not in use we find that barter was not present at all. “ No example of a barter economy, pure and simple, has ever been described, let alone the emergence from it of money; All available ethnography suggests that there has never been such a thing[6]” .Alternative mediums of exchange have existed, mainly the usage of a credit and debt system. In the past, if agent A had needed something from agent B then it would have requested it. No exchange would have been made at this stage. Agent B would have simply recorded the favor asked and would have made, in time, a similar request to its counterpart. This system thus views money mainly as credit and subsequent debt that would be repaid through trust. We are, in fact, considering close societies in which the communities knew each other. This perspective is a lot closer to the role money plays in today's societies than the one in which barter is present. “ Money is not metal. It is trust inscribed. And It does not seem to matter much where it is inscribed: on silver, on clay, on paper, on a liquid crystal display[7]”.

This is not to say that barter did not exist. It existed and it was used but mainly with strangers. When someone not living in the community (and thus could not be trusted) requested an exchange, barter was used to guarantee that the debt would have been paid at the moment of the transaction[8].

This mechanism can be seen in the early civilizations of the fertile crescent. There the main currency was the shekel. Its value was established by the weight of grain. Silver was also used at that time

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[5] Quoting John Stuart Mill from : Jackson, Andrew, and Ben Dyson. Modernising Money: Why Our Monetary System Is Broken and How It Can Be Fixed. Print. p32

[6]Humphrey, Caroline. "Barter and Economic Disintegration." Man 20.1 (1985): 48. Web.

[7]Quoting Niall Ferguson from: Ryan-Collins, Josh, and C. A. E. Goodhart. Where Does Money Come From?: A Guide to the UK Monetary and Banking System. London: New Economics Foundation, 2012. Print. p.28

[8]Strauss, Ilana E. "The Myth of the Barter Economy." The Atlantic. Atlantic Media Company, n.d. Web.

but mainly by bureaucrats to track resources[9]. No exchange occurred in silver thus suggesting that the money itself wasn't backed by anything but the trust that the future exchange would have been repaid with something of equal value.

In short, "money as credit" is a concept that has existed for thousands of years. We could even say that modern day credit cards (at least the concept behind them) are nothing new.

Credit as a way to exchange things has its origins in the prevention of conflicts " The first step in the development of money as a unit of account-is thought to have come about as a consequence of the reaction of societies to disputes and feuds, specifically the attempts to prevent them from turning into matters of life and death[10]". Simply put, instead of reacting physically because of a dispute, debt, or rather "being in debt" was seen as a way to avoid physical confrontation and establish harmony in society once again.

Having said this, we know very well that in the past money started to be associated exclusively with metals such as gold and silver. From that association to the coinage of coins the passage was swift and from a historically perspective pretty short. According to the anthropologist David Graeber metal coins appeared in three different places roughly at the same time (between around 600 and 500 BC) in Northern China, Northeast India and around the Aegean Sea.

This shift occurred mainly for two reasons: the development of bigger communities in which people knew each other less and the subsequent rise of threats and violence. In fact, on one hand soldiers required something that could easily be exchanged for goods and services and their role meant they were proximate to precious metals, on the other hand it was very risky to give credit to "… a heavily harmed itinerant soldier is the very definition of a poor credit risk[11]".

From here on the passage to money guaranteed by the state is very short. In fact, the majority of soldiers were paid by the state who started coining and minting metals in order to pay and maintain its army. The last step was the enforcing of taxes payable only with the coins issued by the state in the first place so that soldiers would have had no problem exchanging them in different communities.

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[9] "Hays, Jeffrey. "MESOPOTAMIAN ECONOMICS, MONEY, LABOR." Facts and Details. n.d. Web.

[10] Jackson, Andrew, and Ben Dyson. Modernising Money: Why Our Monetary System Is Broken and How It Can Be Fixed. Print. p34

[11] Graber, David. Debt: The First 5000 Years. 1st ed. N.p.: Melville House, n.d. Print. p.213

It is thus tangible to assess that the evolution of money and the development of a common payment system is tied to the evolution of societies. The more the latter grew and advanced (through the desire of conquering new territories and gaining new possessions) the more money evolved moving closer to what we have today. It is important to stress that Graeber's thesis is in turn relevantly tied to the payment of soldiers and thus, war. (Section 3.2)

What anthropologists like Graeber states is that, in essence, we have history backwards. This then affects how we think about money and how we don't really understand it. The obvious consequence is that if there is so much misconception about one of the pillars of today's societies then bad consequences and problems that might arise cannot be fixed. " *Our standard account of monetary history is precisely backwards. We did not begin with barter, discover money, and then eventually develop credit systems. It happened precisely the other way around. What we now call virtual money came first. Coins came much later, and their use spread only unevenly, never completely replacing credit systems. Barter, in turn, appears to be largely a kind of accident by-product of the use of coinage or paper money: historically it had mainly ben what people who are used to cash transactions do when for one reason or another they have no access to currency*[12]".

1.2. A Time After Money

To be fair, historical records provided for the existence of banking before coins by thousands of years *"... The code of hammurabi, law-giver of Babylon, who ruled from about 1792 to 1750 BC, gives us categorical evidence, available for our inspection in the shape of inscriptions on a block of solid diorite standing over 7th high, now in the Paris Louvre, showing that by this period "Bank Operations by Temples and great landowners had become so numerous and so important that it was thought necessary to lay down standard rules of procedures*[13] *"*

This Data reinforces the view that money was firstly seen as credit. Nevertheless what we know today as "banking" evolved at different times according to the social development of the countries taken into account.

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[12]Graber, David. Debt: The First 5000 Years. 1st ed. N.p.: Melville House, n.d. Print. p.40

[13]Quoting Glynn Davis from: Ryan-Collins, Josh, and C. A. E. Goodhart. Where Does Money Come From?: A Guide to the UK Monetary and Banking System. London: New Economics Foundation, 2012. Print. p.34

1.2.a Europe at the End of the Middle Ages

As trades evolved in Europe at the end of the Middle Ages it became complicated and risky to shift huge amounts of metals (Gold and Silver at the time) around the continent. Thus goldsmiths emerged. They are wildly considered as the fathers of banking. Their function was to store money (either coins or gold/silver) in a secure vault. The merchant who made the deposit was given a receipt stating the amount of precious metals deposited in the goldsmith vault. In this way transaction payments were made considerably safer and faster. With increased velocity and security came increased trade until the goldsmiths themselves realized that the majority of the metals deposited were not retrieved as the receipts were more easily interchangeable. The goldsmiths thus started to put into circulation new receipts that were not backed by any metals stored. They consequently started profiting from the mere issuance of these new receipts that could easily be used as money. Soon enough they began to charge interest. This new kind of issued money was called receipt money.

The pivotal center of these operations was the city of Venice.
Without a system in place to check and regulate the issuance of receipt money abuse soon followed. The senate of Venice in 1361 passed a law to forbid bankers to engage in any commercial pursuit. Subsequent bookkeeping analysis by officials followed. This, however, did not prevent the largest bank at the time, the house of Pisano and Tiepolo, to close its doors in 1584. The Republic, as a consequence, created a new public bank, "Banco della Piazza di Rialto" with the strict requirement not to create receipt money but to stick to "Coin Storage, exchange currencies, handling the transfer of payment between costumers and notary services[14]". Roughly 40 years later Venice was in need of funding and, not willing to fund itself through taxation, decided to create yet another new bank to issue new receipts and funds its operations. "Banco del Giro" was thus created in 1619 in order to finance the Republic directly[15]. This passage is of vital importance as the financing of the state with the issuance of new money is a practice that resonates throughout history and persists to this day (even the Western Roman Empire scrapped the percentage of silver in the coins issued in order to finance itself).

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[14] "Griffin, G. Edward. The Creature From Jekyll Island: A Second Look at the Federal Reserve. 6th ed. Print. P.171

[15] "Griffin, G. Edward. The Creature From Jekyll Island: A Second Look at the Federal Reserve. 6th ed. Print. P.171

Other relevant examples of banking in Europe where the Bank of Amsterdam, founded in 1609 and the Bank of Hamburg. The Bank of Amsterdam was forbidden to issue new credit and thus deposits were fully backed by metal. When the armies of Luis XIV approached Amsterdam in 1672 panic spread and people started asking the bank to convert receipt money into metal. As the bank did not issue new loans, all deposits were repaid. " All who sought their money were paid, and when they found this to be so, they did not want payment. As was often to be observed in the future, however, desperately people want their money from a bank, when they are assured they can get it, they no longer want it[16]".

Years later, with the spread of colonization across the world and the need of funding to support it the bank made enormous amounts of loans to the Dutch East Indies Company. It failed 10 months later in January 1790 and was taken over by the city of Amsterdam. The bank of Hamburg followed a similar path when the city was invaded by Napoleon, who took over the reserves and substituted them with French securities of dubious value[17].

The practice of issuing "deposit receipts to a value greater than the value of deposits the custodians actually possessed[18]" would later be known as "Fractional Reserve Banking".

1.2.b The Bank Of England

Fractional reserve banking and later bond issuance were practices present in England from the middle of the XVIII century. The case of England in particular is historically significant because it led to the creation of the world's first central bank, the Bank of England.

After the Glorious Revolution of 1688 the throne of the British Monarchy was offered to the daughter of the deposed king James II (Queen Mary) and her husband Prince William Of Orange by parliament. As a result of this succession France declared war on England. England suffered a crushing defeat at the battle of Beachy Head. The British Crown was in very much need of resources as it did not have any. It was, furthermore, plagued by Charles I's action. The king, in 1640, borrowed

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16 "Quoting John K. Galbraith from: Griffin, G. Edward. The Creature From Jekyll Island: A Second Look at the Federal Reserve. 6th ed. Print. ch. IX

17 "Griffin, G. Edward. The Creature From Jekyll Island: A Second Look at the Federal Reserve. 6th ed. Print. ch. IX

18Ryan-Collins, Josh, and C. A. E. Goodhart. Where Does Money Come From?: A Guide to the UK Monetary and Banking System. London: New Economics Foundation, 2012. Print. p37 gold and silver deposited in the royal mint by the merchants of the country thus sinking considerably the trust in the king and its credit rating[19].

In order to fund the cost of the war and the consequent rebuilding of the British Navy the Crown needed £1.2 million. A bond of that amount was issued. To make it more appealing to investors " the subscribers were to be incorporated as shareholders of a new joint stock company, the Bank of England, which would be authorized to issue new bank notes (up to the amount of the fund) and take deposit[20]."However, the tax revenue of the monarchy was not enough to cover its debts and pay for its current spending. The government decided to pass a bill in 1697 to allow the bank to issue new shares in exchange for government debt and Bank of England notes held by the investors. The bank was furthermore given exclusive privilege to issue banknotes, given limited liabilities to protect its shareholders and given monopoly as a banking corporation[21]. This led to bank of England notes becoming the most used among banks as they were seen as the safest (given the monopoly) and the most widespread (given the ability to issue more notes).

However, as a consequence of the silver recoinage act of 1969 , a constant drainage of Britain's silver because of external trading and the artificial setting of the price of Silver below the market price by the government, there was simply not enough silver around to pay employees[22]. (It is important to remember that at the time silver, although diluted through fractional reserve banking, was still the main form of backing money). As a result employers started creating their own credit notes to pay their employees. Many became, effectively, banks. Subsequent reckless lending exploded and was fueled by creative start-ups aimed at the exploration of South America and the Industrial Revolution (section.3.3). As history has shown so far, failures exploded particularly between 1825 and 1839. The conservative government in power at the time in England finally decided to put an end to this and established that the only bank able to issue currency was the Bank of England (Bank charter act, 1848). This is the historical reason why today on every British Pound Sterling note there is in circulation has the name of the Bank of England on it. Unfortunately, or perhaps unwisely, the

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[19] "Jackson, Andrew, and Ben Dyson. Modernising Money: Why Our Monetary System Is Broken and How It Can Be Fixed. Print. p38,39

[20]Jackson, Andrew, and Ben Dyson. Modernising Money: Why Our Monetary System Is Broken and How It Can Be Fixed. Print. p38,39

[21]Jackson, Andrew, and Ben Dyson. Modernising Money: Why Our Monetary System Is Broken and How It Can Be Fixed. Print. p38,39

[22] "Jackson, Andrew, and Ben Dyson. Modernising Money: Why Our Monetary System Is Broken and How It Can Be Fixed. Print. p.40

chart did not involve bank deposits, only banknotes. This is the first reason why private banks are able to issue money today (section 2.1). The second reason is the abandonment of the gold standard (which was in use in England between 1717 to 1931)[23].

In short, the agreement between the Government and the banks happened this way:

- The government granted a chart to the bankers to form a bank
- The Bank was given a monopoly to issue banknotes
- The Bank could create money through fractional reserve banking
- The newly created bank could loan the government as much money needed
- The money created for the government was to be backed by Government I.O.U.s
- The government was to be charged interest to pay for the money
- Government I.O.U.s could also be considered as reserves to further increase the money supply[24].

1.2.c History Of Central Banking In The United States

Virtually all sovereign countries on earth have a central bank today (only North Korea and small states such as the federal state of Micronesia do not have one[25]) and 99.9% of the world population lives in a country where a central bank is present. The most important central bank in the world is the Federal Reserve of the United States.
Its history is controversial and very much overlooked. The United States had, in fact, three other central banks before the institution of the current one 24 December of 1913.

The first bank was the Bank of North America, instituted in 1781. It was given this name because at the time it was thought that Canada as well could have been part of the United States. (A branch in Montreal was opened in 1787). The creation of the bank was supervised by Robert Morris, a member of Congress. The bank was issued a monopoly on the issuance of notes by Congress and federal taxes could be paid with the notes issued and were accepted at face value. Historically, the acceptance of banknotes as payment was done in order to diffuse and spread the usage of such notes among the public. Today it is illegal in the United States and in the majority of the countries to not

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[23]Bordo, Michael D. "Gold Standard." The Concise Encyclopedia of Economics. N.p., n.d. Web.

[24] Griffin, G. Edward. The Creature From Jekyll Island: A Second Look at the Federal Reserve. 6th ed. Print. Overview of these agreements: Murray Rothbard, the Mystery of Banking p.180, Martin Mayer, The Bankers (pp. 24,25)

[25] “How Many Countries Are Left without a Central Bank?" Lions Ground, News Publishing. n.d. Web.

pay taxes with the currency issued by the central bank of the Nation in question "United States coins and currency (including Federal Reserve notes and circulating notes of Federal reserve banks and national banks) are legal tender for all debts, public charges, taxes, and dues" (Coinage Act of 1965, Section 31 U.S.C 5103, "Legal Tender"). Like today, the bank was private as its own charter provided for investors to fund it with an initial public offering of $ 400.000. It was the first initial public offering of the U.S, many more would follow[26]. However, the chart, which expired 20 years later, was not renewed as the public lost confidence on the issuance of paper money by the bank through fractional reserve banking. According to the economist, historian and political theorist Murray Rothbard *" The market's lack of confidence in the inflated notes led to their depreciation outside the Bank's home base in Philadelphia… After a year of operation, Morris's political power slipped and he moved quickly to shift the Bank of North America from a central bank to a purely commercial bank chartered by the state of Pennsylvania. By the end of 1783,.. the first experiment with a central bank in the United States had ended[27]".*

The second bank of the United States was established in 1791 by Congress. Its president, Thomas Willing, was the president of the previous bank. Its history was short as its twenty year chart was not renewed following a very close vote in both Congress and the Senate (bill rejected by one vote in each chamber). Data from the period shows a 72% increase in wholesale prices during the Bank first five years of operation[28].

Following the chaos of the War of 1812 Congress decided to issue a new chart for a third central Bank, this time Called the Second Central Bank of the United States. Its proceedings were similar to the ones previously analyzed except for its greater organization and ramification across the country.

However, the public discourse behind it changed. After 1820 political opinion started to veer in favor of the Central Bank's abolishment. The head of the central bank, Nicholas Biddle, asked for a renewal of the bank chart in advance as the election year was coming up, hoping that the then president would not risk controversy during the election campaign and allow for an anticipated

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[26]DiLorenzo, Thomas J. "The Corrupt Origins of Central Banking." The Corrupt Origins of Central Banking. Mises Institute, n.d. Web.

[27] Quoting Murray Rothbard from :Griffin, G. Edward. The Creature From Jekyll Island: A Second Look at the Federal Reserve. 6th ed. Print.(pp. 194-195)

[28] "Griffin, G. Edward. The Creature From Jekyll Island: A Second Look at the Federal Reserve. 6th ed. Print. ch. XV

renewal[29]. The President at the time was Andrew Jackson. His political speeches both in Congress and to the public manifested a strong opposition to the central bank and the concept of central banking itself. Jackson was elected once again and the Central Bank chart was not renewed. On July 10, 1832, he gave a speech to congress regarding the reasons for him closing the Bank of the United States. "… *and deeply impressed with the belief that some of the powers and privileges possessed by the existing Bank are unauthorized by the Constitution, subversive of the rights of the States, and dangerous to the liberties of the people… I can perceive none of those modifications of the Bank charter with are necessary, in my opinion, to make it compatible with justice, with sound policy, or with the Constitution of our country*[30]". Referring to the (private) shareholders of the bank " Their power would be great whenever they might choose to exert it; but if this monopoly were regularly renewed… they might seldom in peace put forth their strength to influence elections or control the affairs of the nation[31]". Outside of Congress he frequently expressed his opinion on the matter " The bold effort the present (central) bank had made to control the government.. are but premonition of the fate that await the American people should they be deluded into a perpetuation of this institution or the establishment of another like it[32]".

To this day this period of time is called "the Bank War". It is peculiar to read these speeches and quote from the then president of the United States. Indeed, if read out of context and without knowing who expressed them, one could even easily dismiss them as "conspiracies".

Jackson was not the only one who expressed deep concern, opposition and future warnings against the practice of central banking (which at the time was nothing more than fractional reserve banking). Before "the Bank War" two other eminent figures among many others (and founding fathers of the United States) were George Washington " Paper money has had the effect in your state that it will ever have, to ruin and oppress the honest, and open the door to every species of fraud

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29 "Christopher, Guy. "The Colors of Money: Andrew Jackson Still Fights the Banking War." Money Metals Exchange. Web.

30 "Avalon Project - President Jackson's Veto Message Regarding the Bank of the United States; July 10, 1832." Yale Law School. Web.

31 "By Books Group (Author). "PUBLIC DOCUMENTS PRINTED BY ORDER OF THE SENATE OF THE UNITED STATES, FIRST SESSION OF THE TWENTY-SECOND CONGRESS, IN THREE VOLUMES. Volume III.".Web. p.180

32 "By Books Group (Author). "PUBLIC DOCUMENTS PRINTED BY ORDER OF THE SENATE OF THE UNITED STATES, FIRST SESSION OF THE TWENTY-SECOND CONGRESS, IN THREE VOLUMES. Volume III." Web. p.180

and injustice[33]" and Thomas Jefferson " *If the American people ever allow private banks to control the issue of their currency, first by inflation, then by deflation, the banks and corporations that will grow up around them will deprive the people of all property until their children wake up homeless on the continent their Fathers conquered… I believe that banking institutions are more dangerous to our liberties than standing armies.. The issuing power should be taken from the banks and restored to the people, to whom it properly belongs[34]*" .

From the period of Andrew Jackson to 1913 the United States financial system was affected by a series of booms and busts due to the fractional reserve system adopted by private banks. The same pressures that existed for the institution of the three banks already examined happened for the institution of a new central bank. Senator Aldrich was the main sponsor of a bill that was passed by Congress on 24 December 1913 under president Wilson[35]. The motives behind the Central banks were the same cited before. This time the bank was called "Federal Reserve System". "Federal" because it had to appear as it were a government entity (which was not, like the others it was and still is a private entity), reserve to give the idea of having the purpose of storing deposits and system because at first it was conceived as a decentralized system of 12 banks across the country[36].

Its institution, although officially in place to stabilize the U.S. financial system by putting an end to booms, busts and schizophrenic regulations did not prevent future crisis. Indeed, the expansion of the Money supply deeply contributed to what would then become the most destructive market collapse of the XX century in September 1929.

The abandonment of the gold standard in 1933 , its official demise in 1971 and bank deregulation reforms of the 70s s up until the early 90s created the financial system we have today[37]. An analysis of it is provided in the next chapter.

33"George Washington to Jabez Bowen, 9 Jan. 1787 - The Washington Papers." The Washington Papers. Web.

34"Thomas Jefferson's Monticello." Private Banks (Quotation). Web

35"The Federal Reserve and the Financial Crisis Chairman Bernanke's College Lecture Series." FRB: Origins and Mission of the Federal Reserve

36 "Griffin, G. Edward. The Creature From Jekyll Island: A Second Look at the Federal Reserve. 6th ed. Print. p.449

37 "Scranton, Philip. "When Roosevelt Ditched the Gold Standard." Bloomberg.com. Bloomberg, Web

2. Money Today.

There are a lot misconceptions about what money is today and where it comes from.
" A poll conducted by ICM Research on behalf of Cobden Centre found that 33 per cent of people were under the impression that a bank does not make use of the money in customers current account[38]". Similarly, 66 per cent of people polled believed that the bank uses the money deposited in their accounts to lend them to someone else, assessing the risk and giving the costumer a return. The reality couldn't be further from the truth.
Another poll by Dods Monitoring in July 2014 assessed that 7 out of 10 Member of Parliaments (in the UK) believe only the government, through the bank of England, has the power to create money[39]. These views, both from an electorate level and a governmental one, show the thick veil of mystery and misrepresentation that exists on how money is created and why. In particular it is worrisome that the very people that represent the supreme legal authority of the U.K. and in charge of regulating the financial system (by drafting laws and appointing members of various financial committees) don't know the main basic characteristic around our monetary system. To be fair this misrepresentation, although on a lower level, is present in most university books currently on sale. This is largely because they use an outdated model put in place in the early 70s and that just is not true today. " The way monetary economics and banking is taught in many-maybe most-universities is very misleading…"(David Miles, Monetary Policy Committee, Bank of England).

For reasons of clarity and because it is one of the world's most advanced, we will use the UK monetary system as a base to explain how money is created. The process is virtually the same everywhere in the western world. When needed a differentiation will be made between the Federal Reserve and the E.C.B model.

2.1. Three Types of Money

First of all there are three types of money. The first one consists of two variations: coins and banknotes. Both are coined and printed by a specialist printer under the authority of the Bank of England.

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[38] "Ryan-Collins, Josh, and C. A. E. Goodhart. Where Does Money Come From?: A Guide to the UK Monetary and Banking System. London: New Economics Foundation, 2012. Print.p.11

[39]"POLL RESULTS: Only 1 out of 10 MPs Understand That Banks Create Money - Positive Money." Web

The second type of money is central bank reserves. This form of money is created electronically by the Bank of England. They are risk-free but the public cannot access them, not even indirectly. Only the commercial banks who have an account at the Bank of England have access to them.
Both of these types of money are called Central Bank Money. They are exchanged between the Banks and the Central Banks or within Banks through interbank markets[40].
They are the most liquid asset there is. The process on how the central bank gives central bank money to the commercial banks can be explained in this way: commercial bank A needs both cash to replenish its ATM machine and central bank reserves to cover its exposure. It then asks the central bank for this money. The central bank loans those reserves to bank A for very safe assets (mainly government securities) at an interest rate that is fixed by the central bank.
It is important to notice that central bank money constitutes what is known as “the monetary base”. As stated before, banks can also trade central bank money between themselves, and this is indeed the case for the majority of transactions.

The third type of money is the most common and interesting one. It is the money that you safeguard in your bank account. This form of money represents the vast majority of money (97.4% in the U.K and the U.S, roughly 92% world wide) and has nothing to do with the money created by central banks. This money is created only by commercial banks. Technically these are just digits on a computer, legally it is what the bank owes to the person who has made a “deposit”[41]. The term deposit in this case means a debt that the bank owes you as owner of the bank account. This implies that the moment you deposit a sum of money, for example a monthly salary of £1000 (or euros/U.S. dollars etc.) the bank owns the money and has a liability to you. The problem is that paychecks as all electronic money were originally created by a bank simply by extending credit. What this means is that every time a bank “lend” money in reality it is just creating it.

Let us assume consumer A needs a loan to buy a house for £100.000. He goes to the bank and asks for it. The bank, having assessed the credit risk of the customer decides to grant a loan. It then proceeds to create £100.000 by simply digiting that sum onto a computer. The sum is transferred into Customer A deposit. Now the bank registers a liability to the customer of the said sum and an asset

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[40] “Ryan-Collins, Josh, and C. A. E. Goodhart. Where Does Money Come From?: A Guide to the UK Monetary and Banking System. London: New Economics Foundation, 2012. Print. ch.2

[41] United Kingdom. Bank of England. Modern Creation in the Modern Economy. By Michael Mcleay and Ryland Thomas. N.p.: Bank of England, n.d. Print. Quarterly Bulletin 2014 Q1

in the form of the loan granted plus the interest attached to it (this accounting standard is called double-entry bookkeeping). Once the loan is fully paid the money created disappears. One must inevitably ask: if all money is created this way, where does the interest to pay for the credit come from? Interests represent one of the biggest forms of profit for banks.The profits a bank makes are added to its equity capital. As such they are effectively removed from the system and the money supply reduced. The more a bank pay its staff and shareholders with such profits the more the interests initially paid return into circulation[42]. This has never completely happened as banks always require some capital and in harsh economic times they may even be at a loss, not a profit. In the end the interests do not come from anywhere. They are either non existent, which means that there is, mathematically, always going to be someone unable to pay the interest on the loan and thus default, simply because there is not the money to pay for it, or it is created through new credit . The second hypothesis could explain why the amount of money has continuously been rising in the past century and the value of the currency has consequently been sinking. It also goes hand in hand with economic growth and it inevitably creates inequality (chapter 4).

To make the connection on how money created this way is actually what everyone has in their bank accounts we continue with the example: Customer A pays house owner B the sum agreed in exchange for his asset (the house). With this money house owner B then decides to buy a new car. He thus deposits, for example, 25000 pounds into a firm account to pay for the car. The firm then uses the money to pay the salaries of his workers, manufactures new cars, etc. The process is continuos.

As a consequence of this "bank deposits are not legal tender in the strict definition of the term - only coins and notes under certain conditions set this test, but they function as money[43]".

They function as money because they are wildly accepted and can be exchanged for notes and coins if needed. With the arrival of payment systems such as credit cards, debit cards and the like they might even be more accepted than cash. It is important to stress the fact that they are not cash and from a financial perspective they are less liquid than both cash and central bank reserves. This is the reason why when a bank run happens people rush to withdraw cash from their accounts. Central bank reserves instead cannot be withdrawn because, as previously mentioned, they are only used by

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[42]"Ryan-Collins, Josh, and C. A. E. Goodhart. Where Does Money Come From?: A Guide to the UK Monetary and Banking System. London: New Economics Foundation, 2012. Print. p.87.

[43]Ryan-Collins, Josh, and C. A. E. Goodhart. Where Does Money Come From?: A Guide to the UK Monetary and Banking System. London: New Economics Foundation, 2012. Print. p.15

and among banks. There is no doubt in my mind that the majority of people would call anyone who would argue that the money they have “deposited” in their bank accounts is not really money at all but credit created by the banks, literally “out of nothing” crazy.
The historical reason for the differentiations between these three forms of money is because the Bank of England forbade commercial banks to print paper currency but did not forbid them to create commercial “money” (see section 1.2.b, and Bank of England Chart of 1848).

If the banks deposits are not really money one might ask how they get exchanged in the real world. For example, if the old customer A (from now on “agent”) has sold its house he now has to rent. The rent, which we set for the sake of the argument at £1000 needs to be paid by agent A to the landlord, agent B. For convenience they are to be paid by bank transfer and not cash. How is the money exchanged if the “money” in the “account” is just the promise to pay from someone to someone else (alias credit)? There are two possible ways. In the first one the banks simple adjust the money they have in each others’ bank accounts. When agent A transfers the money to agent B, agent’s A bank subtracts £1000 from the bank’s bank account in the bank of Agent B while the bank of agent B adds 1000 pounds to its bank account in bank A. The second method is to do the same adjustment but with central bank reserves at the centre. When Agent A asks for a transfer bank A asks the bank of England to move the £1000 from the reserve account (in the bank of England) of the bank to the reserve account of bank B. After this is done the Bank of England notifies the banks. Banks A subtracts £1000from agent A’s account while Bank B adds 1000 pounds to Agent B’s account.

As we can see this process is not intuitive and it is, indeed, very far away from what we think would happen. Lastly, it is important to notice that cash is not debt-free money because it is money that is only accessible by customers through their deposits and is created by by the bank of England that then lends it to the commercial banks[44].

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[44] “Ryan-Collins, Josh, and C. A. E. Goodhart. Where Does Money Come From?: A Guide to the UK Monetary and Banking System. London: New Economics Foundation, 2012. Print. p.72

2.2. Limits to the Creation of Money

Now that the question on how money is created has been answered another one arises. If commercial banks can create money out of nothing, can they do it illimitably or is there a limit?
The "mainstream answer" is that there is a limit. There is not.

The mainstream view present in textbooks is that banks are required to have an initial deposit before extending credit. This deposit can be multiplied as the reserve ratio banks are required to hold in many legislations (such as the U.S.) is 10%. This means that there is a limit to the amount of money banks can create. This is not true as banks in reality do not need initial deposits. They create it out of nothing by writing a loan to themselves "Subject only (but crucially) to confidence in their soundness, banks extend credit by simply increasing the borrowing customer's current account, which can be paid away to wherever the borrower wants by the bank "writing a cheque on itself" that is, banks extend credit by creating money[45]".

The second view is even more diffused. It states that the central bank can limit money creation by varying the interest rates for central banks reserves. When the economy is booming the central bank increases the interest rate to cool down lending and when it is in depression (as of this moment in many western countries) it lowers the interest rate to encourage lending.
In practice the central bank has little power over the regulation of credit. Altering the interest rate does not affect at any given time the amount of credit created (the last thirty years in Japan are an example) as it does not do this the influx of central bank money that we saw with various "Quantitative Easings" in the U.S. , England and Europe. This is because what they do is simply transferring to the banks more central bank reserves. These reserves could , in theory, be used to extend even more credit to the economy. In practice they don't as in a negative environment banks are risk avert and thus prefer not to lend money. The only way in which credit is expanded to the private sector is by the confidence the banks have on the ability of their costumers to repay the loans. This "confidence" is given by a number of factors (mainly the banks own credit rating assessment risk) and the overall economic situation[46]. It is indeed peculiar that in an age of complex algorithms and

[45] " Quoting Paul Tucker, Deputy Governor at the Bank of England and member of the Monetary Policy Committee, 2007 from Ryan-Collins, Josh, and C. A. E. Goodhart. Where Does Money Come From?: A Guide to the UK Monetary and Banking System. London: New Economics Foundation, 2012. Print. p.21

[46]"Ryan-Collins, Josh, and C. A. E. Goodhart. Where Does Money Come From?: A Guide to the UK Monetary and Banking System. London: New Economics Foundation, 2012. Print. ch.5

in which science and technology have taken over many aspects of our lives the most important pillar of our economic system are subjectives factors such as “confidence and trust”.
Transferring central bank reserves to banks (again, “Quantitative Easing”) has two other faces: reducing the availability of government bonds as the central banks buy a lot of them including pushing up their prices. Both measures have no direct effect on the economy. Indeed, many investors, pushed back from the market of government securities by low yields and high prices divert to high risk assets, sit on their cash or buy assets abroad. The only “credit easing” to the real economy would come if investors bought non bank bonds directly on the primary market[47]. This did not happen and it is merely a small part of the overall market. What this new liquidity does though is to push up stock prices. This is why “quantitative easing” doesn’t affect the real economy and it has not created inflation (in the real economy). Needless to say this further augments inequality of wealth across the population (section 4.2).

The third and last argument on the possibility of limiting banks creation of credit (or money) is capital requirements.
According to Basel regulations (directives emanated by a committee linked to the Bank for International Settlement), which are widely adopted by every central bank in the western world,
banks have to set aside capital every time they make a loan. The level of capital required varies according to the loan made and the credit assessment risk of the bank in question. For example, mortgages requires less capital to be set aside than loans to businesses. This is because in case of a mortgage default the bank can repossess the home and sell it. On the contrary, if the business fails then the bank looses the loan (that is, it still has the liability of the money created but not the asset, in this case the loan and the interest attached to it). The loan is lost because the repayment of the loan comes from the business cash flow and the owner does not have direct liability. This is why in many countries today banks prefer to loan to households and not businesses[48]. In turn, economic growth is affected. It is not hard to imagine that business loans are more growth friendly than mortgages that just inflate the housing markets and make houses expensive and/or unaffordable (see section 3.1).

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[47]Ryan-Collins, Josh, and C. A. E. Goodhart. Where Does Money Come From?: A Guide to the UK Monetary and Banking System. London: New Economics Foundation, 2012. Print. ch. 4

[48] “Ryan-Collins, Josh, and C. A. E. Goodhart. Where Does Money Come From?: A Guide to the UK Monetary and Banking System. London: New Economics Foundation, 2012. Print. p.94

Capital requirements do not affect credit creation. This is because if the main factor of evaluation in granting a loan is the confidence of it being repaid then in booming times banks will lower their risk assessments and reduce the capital set aside. In turn, because of the positive economic moment banks will make even more loans to increase their profits. Lastly, if regulators (alias the Basel Committee linked to the world's central Banks which are owned by the commercial banks) decide to raise the capital requirements in the future then the banks will find it easy to raise new capital anyway. One of the ways of raising capital is issuing new shares. The money to buy these new shares is created by the banks themselves[49].

As demonstrated, banks have no limit to the amount of money/credit they can create.
The austerity to which many European countries are subjected to is very strident if compared to the ability of the banks to create as much money as they like. This is because states, especially in the European Union, have no power in the creation of money. They gave up that power centuries ago. Direct debt monetization is furthermore prohibited by the treaty of the functioning of the European Union (Article 123).

The only limit in money creation is thus dependent on the demand side, not the supply. If there is no demand for loans banks will not create them.

2.3 Why Banks Fail?

Having assessed how banks create money and how they have no limit on its emittance (and not less importantly, allocation) the last answer that could reasonably be given is: why banks fail if they can create money?

Banks fail because they have the ability to create money but not the ability to create capital.
In short, "to stay in business, banks must ensure their assets (loans) are greater than or at least match their liabilities (deposits)[50]".

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[49]Ryan-Collins, Josh, and C. A. E. Goodhart. Where Does Money Come From?: A Guide to the UK Monetary and Banking System. London: New Economics Foundation, 2012. Print p.95

[50] "Ryan-Collins, Josh, and C. A. E. Goodhart. Where Does Money Come From?: A Guide to the UK Monetary and Banking System. London: New Economics Foundation, 2012. Print p. 86

For example, if customers default on the loans the bank made to a decree greater than the capital of the bank (usually 10%, in reality even less) then the bank goes bust. This means that for the banks to collapse (and the entire financial system plus our economies) all that is needed is the default of roughly 10% of the total loans out there. This is a very lax standard and indeed one of the reasons why the central banks have the key function of lenders of last resorts. Every time a bank has a liquidity problems it can ask the central bank for reserves. It could also asks other banks for reserves but in time of crises that would not be possible because banks would not trust each others as they would be afraid of being related to the failing banks by the market. It is astounding the amount of times the central bank has to intervene to cover bank reserves. Without it, the system would not work and probably cease to exist within a few months. It is important to state that the central bank function of "lender of last resort" just means that in the end it is the tax payer that takes on the bill . A market in which the taxpayers constantly have to save the businesses involved is indeed unusual by capitalist standards.

2.4. Ethical Problems

Seeing money as credit is nothing new and was present in the majority of ancient societies as previously analyzed. The critical and innovative elements of the current system are: the role of banks in credit creation, the virtually unlimited supply of money based on "confidence and trust", the extensive power banks have in granting loans, the lack of regulations.

Aside from these issues, which are the prevalent reasons why there have been crisis in the economy in the last few centuries, there are ethical problems as well. First of all no private institution should have the power to create money as it is a fundamental public good and thus should be regulated and distributed by the government.

Secondly, every transaction made always creates a disadvantage for the bank's customer. On one hand the costumer put his work, time and energy to repay the loan granted. On the other hand the bank does nothing other than input numbers on a computer. This requires virtually no effort and a few seconds of time (bureaucracy aside). In a worst case scenario the customer is not able to repay its loan and thus his house becomes a property of the bank. Little does he know that the right to appropriate his home initially lies in the right the bank has to issue money "out of nothing". There is a court case about this in the U.S. In "first national bank of Montgomery vs. Daly (1969)" the bank's client, Mr.Daly, had defaulted on his loan. The bank thus asked for the possession of Mr. Daly's house as payment. Mr. Daly argued that the loan contract was not legally binding because the bank had given him no real money but credit created out of thin air. Justice Mahoney wrote in his memories "… Mr. Morgan (the bank president) admitted that no United States Law or Statute existed which gave him the right to do this[51]". The court thus allowed Mr. Daly to keep his home. The decision, which was never overruled was later nullified on grounds of erroneous jurisdiction. The implication of the ruling, if legally binding, would have had wiped out every existing loan thus causing the collapse of the economy. It is reasonable to understand why courts do not rule against banks in these proceedings.

Nevertheless, even if you have no standing loan the money you work for (taking for granted the understanding that it is not technically money, but credit) and you require to live a decent life took no effort to create. This is only because banks are granted the power to issue money. Power by the way which no people have ever directly given to them. The U.S. constitution strictly relegates the power of issuing money to Congress " Congress shall have the power-to borrow money.. to coin money, regulate the value thereof, and of foreign coin, and fix the standard of weights and measures …to provide for the punishment of counterfeiting" (United States Constitution, Article I, Sections 8 and 10). It is important to stress that for " coining money" it is intended the issuance of currency backed by metals and not paper money with no backing (fiat money). At the constitutional convention in 1787 Oliver Ellsworth (that later would become the third Chief Justice of the Supreme Court) stated: " This is a favorable moment to shut and bar the door against paper money. The mischief of the various experiments which have been made are now fresh in the public mind and have excited the disgust of all the respectable parts of America[52]". In addition "To emit an unfunded paper as the sign of value ought not to continue a formal part of the Constitution, nor ever hereafter to be employed, being, in its nature, repugnant with abuses and liable to be made the engine of imposition and fraud[53]".

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[51] "First National Bank of Montgomery, Plaintiff. Vs. Jerome Daly, Defendant. In Justice Court, State of Minnesota, County of Scott, Township of Credit River. 7 Dec. 1968. Web.

[52]"Quoting Oliver Ellsworth from: Griffin, G. Edward. The Creature From Jekyll Island: A Second Look at the Federal Reserve. 6th ed. Print. p315. For statement and context see "Bancroft, pp. 30,43-44,82)

[53]"Quoting Alexander Hamilton at the Constitutional Convention from: Griffin, G. Edward. The Creature From Jekyll Island: A Second Look at the Federal Reserve. 6th ed. Print. p316. For statement see "Alexander Hamilton, works, Part II, P.271)

The ramifications of all that has been explained go way beyond banks. The creation of money affects most aspects of one's life and the world we live in. After all "money makes the world go round[54]".

3. Main Street

This chapter analyzes the effects of money creation in the real economy.

It is divided into three parts:

- Inflation and its effects
- Wars
- Money creation and economic growth

3.1. Inflation and its effects

Inflation is very easy to define. It is simply " a persistent increase in the level of consumer prices or a persistent decline in the purchasing power of money[55]".

The latter part of this definition sheds some lights on the causes of inflation.

It does not happen because prices rise but because money looses value.

A dollar in 1914 would be worth roughly 23.65$ in 2016, for a total inflation rate over a century of 2265.25%.[56]

The way the currency looses value is because of an increase in the money supply. Whenever a bank grants a loan (thus creating money) it increases the total money supply. This makes one ask oneself how money has value if it is created out of nothing. Money has value because it soaks up a part of the value from the existing money supply. Thus, when a bank creates money a price is paid, not by the banks but by whoever holds the rest of the money in the economy.

In the past the transmission between money creation and inflation was almost linear.

This does not seem to be the case anymore (section 2.2).

[54] "John Kander, Fred Ebb, line from song "Money,Money-musical cabaret"

[55] (Quoting The American Heritage Dictionary from: Comley, Pete. Inflation Tax: The Plan to Deal with the Debts. N.p.: Pete Comley, 2013. Print.

[56] "Https://www.measuringworth.com/uscompare/. N.d. Raw data.

According to the economist Milton Friedman “inflation is always and everywhere a monetary phenomenon[57]”. This statement was indeed true for much of history. With the advent of more complex financial systems the theory behind this statement changed. Friedman’s phrase is in fact based on the equation: MV= PY where M is money, V is the velocity of money (how fast money changes hands), P is prices and Y is nominal GDP. In order for this equation to lead to the phrase expressed before V needs to be constant as well as Y. While Y may be constant in the long run but certainly not in the short, the velocity of money is not and has changed wildly since the 80s. Furthermore, the initial equation only accounts for GDP transactions (transactions that affect GDP), not financial and assets transactions. These transactions have been made at an increasing rate as the financial sector expanded. They thus have the consequence of reducing the velocity of money in said equation (because it does not take financial transactions into account). A revisited version of the equation, substituting M (money) with C(credit created by the banking sector) and differentiating it into credit flows for the financial sector and for GDP transaction would offer a clear look at inflation today[58].

Moreover, as assessed in section 2.2, credit creation cannot happen without the money being used. Thus, even if the central bank increases bank’s net reserve through an asset purchase program (ex: quantitative easing) the net effect is zero if people in the real economy do not ask for loans and if banks are not willing to create money for them (because of fear of the costumer defaulting). In fact, the main objective of the Fed’s quantitative easing program (same for BoE and E.C.B.) was not to create inflation in the real economy but to prevent a banking collapse by loaning banks more reserves, alias “real money” and by lowering the government’s long term interest debt[59]. The indirect effect of this was inflating the stock exchange. The “help” to the real economy had to manifest in the form of “trickle down economics” and the hope that credit demand could restart once banks were able to lend again.

What all of this tells us is that money printing does not alone creates inflation in the real economy anymore. It does, however, create inflation in other assets. This price inflation then leads to bubbles whenever these assets (mainly financial) do not reflect the underling economic situation (alias production of goods and services).

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[57] “Blanchard, Olivier, and David R. Johnson. Macroeconomics. 6th ed. N.p.: Pearson, n.d. Print.p. 191

[58]“Ryan-Collins, Josh, and C. A. E. Goodhart. Where Does Money Come From?: A Guide to the UK Monetary and Banking System. London: New Economics Foundation, 2012. Print.p109,110

[59] “Carney, John. “Quantitative easing does’t create inflation or deflation" CNBC. Getty Images, 2013. Web.

One of the thing that is feasibly and frequently inflated in the real economy is the housing market. This is because mortgages (money created by banks to buy a house) do not affect inflation directly, they merely inflate home prices up until the houses become unaffordable (meaning the price does not reflect underling economic activity anymore, in this case average income). This is what happened in 2008. Banks granted excessive loans without considering the credit rating of the costumers thus inflating the housing market. When those people found themselves unable to pay the mortgages the housing market collapsed along with the banks' balance sheets. The situation was exasperated by the fact that banks traded these loans to other banks (alias Mortgage backed securities) and financial institutions. With the development of financial markets granting a loan to someone who could not repay it no longer was a problem. You just had to get rid of it by selling it to someone else. One of the banks prime costumers of mortgage backed securities in the years prior to the crisis were government entities and pension funds[60].It is easy to see how this creates systemic problems. The moment the bubble exploded no bank in the market place trusted one another. If they cannot trust one another then they cannot exchange reserves in the interbank market and become prey of speculation and market volatility. That's when the central bank intervenes.

The housing market is not the only asset inflated by commercial banks. It is one of the most common because it represents a real demand in the economy (it is essential to have a house, whether rented or owned). At this moment both the stock and the bond market are historically at the highest level ever reached. It will be interesting to see what happens once the underling economic activity shifts or if the prices just keep rising. What is certain is that within this system booms and busts are built from within. Money is created in times of boom and money is destroyed in times of bust. In times of bust banks tend to be saved by the government. Without banks there is no more money in circulation and the circle stops turning. This notion is nothing new. As this quote attributed to Andrew Jackson says "I have had men watching you for a long time and I am convinced that you have used the funds of the bank to speculate in the breadstuffs of the country. When you won, you divided the profits amongst you, and when you lost, you charged it to the bank. … You are a den of vipers and thieves[61]" (On closing the Second Bank of The United States, 1834).

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[60] "Tavakoli, Janet. "Banks Dumped Structured Products in Pension Funds." TFS. Tavakoli Structured Finance, Inc., n.d. Web.

[61] "Gutenberg, Project. "Privatizing Profits and Socializing Losses." Project Gutenberg Self-Publishing. N.p., n.d. Web.

3.2. Wars

The link between money and war goes back thousands of years. According to Graeber metals and standard units of account were first introduced to pay for mercenaries and soldiers (section 1.1). The reason why the Bank of England was first introduced was to pay for the reconstruction of the British navy destructed in a war against France. The first central bank of the United States was created with the justification to " establish order" after the colonies inflated their currencies to finance wars while the third was created after the war of 1812 (section 1.2.c). Money creation and state's financing through it played a major role in both World War I and II. After the development of a fractional reserve system up until now creating money "out of thin air" has been the most conventional way of funding wars. This happened for a very simple reason. In western democracies the government is accountable for its citizens. Wars are very costly and in order to finance them there are three ways: using the country's reserves (this almost never happens), taxing the citizens or issuing bonds which are paid for by both the central bank and commercial banks (which in turn, create money out of thin air). The last method is the most used one for the simple reason that it removes democratic accountability. If a tax would have to be levied to finance wars then the citizens would feel direct consequences, including a higher taxation rate. Turns out, people in general do not like wars. If it becomes clear to them that they need to pay for wars directly then strong oppositions will likely occur. It is further important to stress that if war-financing is of private origin then there are private interests at stake. Historically interests on war loans were never too high even though the bonds themselves were risky. This is because most of the time a country's victory would have opened up new markets and opportunities for the financiers. Citizens thus pay for wars with inflation in the real economy. The reason why the transmission of inflation through money printing does not work anymore has been explained in section 2.2.

To further delve into the relationship between money and war three examples are hereby provided (one in the XIX century and two in XIX century).

3.2.a. The Battle Of Waterloo

Napoleon was opposed to financing the government through debt . He has been attributed to saying "When a government is dependent upon bankers for money, they and not the leaders of the government control the situation, since the hand that gives is above the hand that takes. Money has no motherland; financiers are without patriotism and without decency; their sole object is gain[62]". Under his reign France ran a balanced budget and was not influenced by external pressures. Nevertheless he declared war many times. He paid for them through the Nation's reserve. Precisely those that the United States gave him in 1803. That year Louisiana passed over to the U.S. in exchange for $ 15 million and the cancellation of some of France outstanding debts[63].

After his fall and the restoration of the monarchy under Luis XVIII, Napoleon came back once again and regained control of France with around 800 men. He then moved to war agains Britain and its coalition. This time however the Treasury's vaults were empty. He thus asked and received £500.000 from the city of London. With that money he proceeded to war and lost the 18 June of 1815.

Britain, like France, had paid for this war through bonds. Bonds that were exchanged at the London Stock Exchange. Needless to say, 18 June everyone who held those bonds was awaiting anxiously for the war's outcome to be declared. If Britain won then the prices of those bonds would have risen because they could have been repaid. If France had won the bond's worth would have gone to zero.

A banker in London who held a large part of those bonds had an informer on the battle scene that was able to send the war's outcome to London before the British Government. As soon as he heard the news he started selling those bonds. That action, together with the initial rumor of a British defeat led every one else to sell. When the prices of those bonds hit rock bottom he proceeded to buy them all at a fraction of their prices. One man took control of the majority of Britain debt at the time in one day. The banker's name was Nathan Rothschild. Roughly one hundred years later The New York times (April 1, 1915 edition) reported that the grandson of said banker tried to secure a court order to prevent the publication of a book regarding that story. The court dismissed the claim stating that the story was true and made him pay all court proceedings[64].

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[62] "Wilson, R. McNair. Monarchy or Money Power." London: Eyre and Spottiswoode, 1933. Print.

[63] "Louisiana Purchase." Thomas Jefferson's Monticello. Thomas Jefferson Foundation,Inc., n.d. Web.

[64] See New York Time Article and Griffin, G. Edward. The Creature From Jekyll Island: A Second Look at the Federal Reserve. 6th ed. Print. p227.

3.2.b. World War I

The U.S. entered World War I April 6,1917 largely in rescue of its European allies France and Britain. The sinking of the Lusitania in 1912 is seen as one of the reasons that led the american public into war. The ship carried, under disguise, weaponry headed for Britain. At the time the U.S, even if neutral, provided its allies weaponry and loans (through its commercial banks, the most important one being J.P Morgan & Co.), especially to France[65]. These loans were war bonds for which the banks, as always, created money out of nothing.

The Nazis well aware in advance of the shipment headed towards Britain. As a result the German Embassy in Washington issued a statement advising U.S. citizens not to embark on the ship as it would have been seen as a threat due to its cargo. The statement said " *NOTICE! TRAVELERS intending to embark on the Atlantic voyage are reminded that a state of war exists between Germany and her allies and Great Britain and her allies, that the zone of war includes the waters adjacent to the British Isles, that, in accordance with formal notice given by the Imperial German Government, vessels flying the flag of Great Britain, or of any of her allies, are liable to destruction in those waters and that travelers sailing in the war zone on ships of Great Britain or her allies do so at their own risk. IMPERIAL GERMAN EMBASSY, Washington D.C., April 22,1915.*[66]

Once the U.S. entered World War I it financed it through multiples means. Roughly 22 % of the war was paid in taxes, 58% by borrowing from the public and 20% in money creation[67].In addition commercial banks provided loans to the allies. Loans that would have been completely lost if Germany won the war. The public was furthermore encouraged to take on loans to buy war bonds. Banks that approved of such loans were granted a lower interest rates by the central bank. This means that 78% of the war conducted by the US was financed by the creation of money. Its cost was just too much to be directly sustained by the public. It is estimated that the total cost of World War I for the U.S. was $32 billions or 52% of GDP[68].

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65 Martin Horn, " A private bank at war: J.P. Morgan & co and France, 1914-1918, "Business history review (2000) pp. 85-112

66 "Kan, Vincent. "RMS Lusitania: The Fateful Voyage." First World War.com. n.d. Web.

67 "Lozada, Carlos. "The Economics of World War I." The National Bureau of Economic Research. n.d. Web.

68 "Lozada, Carlos. "The Economics of World War I." The National Bureau of Economic Research. n.d. Web.

3.2.c. World War II

War World II was financed in the U.S roughly the same way. The majority of the war's expenditures were in fact covered by the Federal Reserve System and the savings of American taxpayers (reminder, savings in the bank accounts are just credits created by the banks). In particular the Federal Reserve lowered the interest rates and agreed to purchase the government's bonds for three-eight of a percent per year. At the time the average was between 2 and 4 %. This enabled an expansion of the money supply. Celebrities in Hollywood were casted to persuade the public to buy these bonds. Interestingly, the Federal Reserve Act of 1913 was amended removing some of the provisions established in 1913 to limit the central bank's power. " One amendment enabled the Board to change reserve requirements in banks in New York City and Chicago… without changing requirements for other banks[69]". A second amendment allowed the Federal Reserve to buy U.S. debt from the government thus financing directly the war. A third enabled "war deposits" no reserve requirements[70]. In practice the second amendment gave a competitive advantage to banks in N.Y and Chicago by enabling them to increase the amount of money they could create. The third allowed the banks who held "war deposits" further lending as those deposits did not need reserves against them.

Last but not least it is important to stress the fact that commercial banks are private entities. They are not under the control of the government and their primary motive is business. It does not matter which side is funded as long as a profit can be made. Most of the time this goes hand in hand with working with and for foreign governments. A BBC report in 1999: " A french government commission, investigating the seizure of Jewish Bank accounts during the Second World War, says five American banks (Chase Manhattan, J.P. Morgan, Guaranty Trust.co of New York, Bank of the city of New York and American Express) had taken part. It says their Paris Branches handed over to the Nazi occupiers about one-hundred such accounts." In addition " The relationship between Chase and The Nazis apparently was so cozy that Carlos Niedermann, the Chase branch chief in Paris, wrote his supervisor in Manhattan that the bank enjoyed "very special esteem" with top German officials and a "rapid expansion of deposits" (The New York Daily News)[71].

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[69] "Richardson, Gary. "Federal Reserve's Role During WWII - A Detailed Essay on an Important Event in the History of the Federal Reserve." Federal Reserve History. Federal Reserve System, n.d. Web.

[70]"Richardson, Gary. "Federal Reserve's Role During WWII - A Detailed Essay on an Important Event in the History of the Federal Reserve." Federal Reserve History. Federal Reserve System, n.d. Web.

[71] "Washington's Blog. "American Banks Funded The Nazis." Global Research, Centre for Research On Globalization. n.d. We

The bank and the Federal Reserve successfully created a system of incentives to direct the financial system towards financing the war (and making it profitable for the banks as the same time). Needless to say, the Federal Reserve power increased consistently as its employees passed from 11,000 to 24,000 thousands in 1943 and 1944. Price controls were put in place from 1941 to 1946 to lower inflation with little success. Most of the time the quality of the products was reduced and when effective they caused shortages " such as gasoline, meats, and a few other foods accompanied by explicit government rationing[72]". During price controls, which caused sidelined damages in the form exposed, inflation was artificially low at 3.5%. It was 10.3% six months before price controls were enacted in April 1942 and boomed at 28.0% after their removal in June 1946.[73]

It appears to be clear that wars would be less likely to happen in democracies if their financing happened only through taxation while taking the money supply as given. Funding wars this way, as mentioned, removes democratic accountability and blurs citizens on how they actually paid for the wars. The creation of money has never been democratic (otherwise it would have long been a public matter) and it has been used, historically, to control and direct the allocation of resources, usually towards an expansion of State power.

The U.S was taken as the primary example because of their relevance on the worlds' stage and because they can effectively spread a part of the cost of wars worldwide. The U.S. dollar is the de fact world reserve currency and will remain this way as long as it is used as the primary standard and mean of payment.

3.3 Money Creation And Economic Growth

There is no doubt that capitalism and consumerism fit perfectly. Capitalism is "an economic, political, and social system in which property,business, and industry are privately owned, directed towards making the greatest possible profits for successful organizations and people[74]". Money creation, as we have seen, is a privately owned right and is directed towards achieving the highest possible pro-

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[72] "Friedman, Milton, and Anna Jacobson. Schwartz. From New Deal Banking Reform to World War II Inflation. Princeton: Princeton UP. Print. p141

[73] "Tassava, Christopher J,. "The American Economy during World War II." EH.net, n.d. Web.

[74] "Cambridge Dictionary." Capitalism Meaning in the Cambridge English Dictionary. n.d. Web.

fit. Indeed, Capitalism and modern day banking practices went hand in hand during the Industrial Revolutions. On the other hand, if society's standard is to consume things at an ever accelerating rate than credit creation by banks will rise as consumption rises. Consumption gives a reason to and allows for the expansion of credit and credit allows for increase consumption. Let us not forget that when banks extend and therefore create credit they bring purchasing power into existence.
This makes one ask oneself which one, among the Industrial Revolution and the creation of money (followed by consumerism), came first.
This question does not have an easy answer because historically they went hand in hand. Economic growth in fact allows for money creation as output in the economy rises while money creation can lead to economic growth in the short term if it is used to increase industrial capacity in the economy. Most of the time money growth exceeds the rate of growth of output, leading to inflation but in the past it may have played a role in the development of industries. In fact it is important to highlight that banks do not only create money, they also allocate it. In doing so they effectively manage the allocation of resources in the economy. If, in the economic environment, a certain sector provides the highest return then they will certainly invest in it by allocating credit.
This theory is the main argument used by bankers and economists to justify the fact that banks can create money out of thin air.

However, if this credit allocation may have played a role in accelerating the process of economic growth, it did not create it nor it sustained in the long term. The only thing that leads to economic growth is in fact technological progress. " In an economy with technological progress and population growth, output grows over time…. output per worker and capital per worker grow at the rate of technological progress[75]".This is because of what in macroeconomics is called "the declining marginal utility of capital". *Over the long term, the more capital there is, the less its effects on the economy "...the same increase in capital will lead to smaller and smaller increases in output as the level of capital increases. In other words, if there is little capital to start with, a little more capital will help a lot. If there a lot of capital to start with, a little more capital may make little difference[76]"*. This is why countries destroyed by the second World War grew at a such an accelerating rate once capital growth was restored.

[75] "Blanchard, Olivier, and David R. Johnson. Macroeconomics. 6th ed. N.p.: Pearson, n.d. Print.p.276

[76]"Blanchard, Olivier, and David R. Johnson. Macroeconomics. 6th ed. N.p.: Pearson, n.d. Print.p.238

Moreover, loans to the real economy have been declining lately as banks prefer to loan to families and/ or invest in various forms of finance (section 2.2.).

There seems to be no economic argument in the long run that is in favor of credit creation. Instead, there are a lot of arguments for its demise. It may indeed be the most important injustice there is in the world as of this moment. Its effects, as seen, go beyond the economic sphere and impact virtually every one on Earth. The problem is that these effects are indirect and not truly seen or understood by the population. When crises arise that shock the entire system then the people who loose it all may start to rebel against it. It does not matter whether they attack the source of the economic disaster directly (as the 99% movement did in the United States) or they start relying on strong family values and the role of the state more and more while closing themselves inwards (Le Front National in France, Trump in the U.S.A) or they focus on a country's internal problem (the Five Star Movement and corruption in Italy). The initial source is always the same. In good economic times the processes analyzed may go unnoticed even though they have strong effects thanks to economic growth (due in turn to technological change and innovation). When crises occur, when people loose their homes and their assets without really understanding why then they do the only thing they can: protest. In evolved democracies this is mostly reflected in voting.

4. Inequality

Inequality has never been so popular. All major newspapers are talking about it and it has long entered the political debate. The reason why it is so popular is because it has been rising consistently in the western world since the 70s. There is a level of inequality which is tolerated by society and it is due to one's effort and ability. That level has long been reached and surpassed. Today in the U.S the top 0.1% owns as much wealth as the bottom 90% (22% of US wealth)[77]. Worldwide 62 people own as much wealth as half the world population[78] (7.450 billion people[79]). The Pew Research Center's Global Attitudes Project found that for respondents (U.S and European citizens) "the greatest danger to the world[80]" is inequality.

According to the Cambridge Dictionary inequality is " the unfair situation in society when some people have more opportunities, money etc. than other people[81]".

The following chapter aims to shortly analyze inequality in the XX, inequality today and the link between money creation and inequality itself.

4.1. Inequality In The XX Century

During the period 1914-1945 inequality decreased in the majority of the countries who fought in the wars. In particular it decreased in France and Japan " In Japan, the share of the top 1 per cent fell from 18.6 per cent to 7.4 per cent, numbers virtually identical to those of France" while for " Denmark, the Netherlands. Norway, South Africa, Sweden, the UK, and the US, there were salient declines in top income shares after 1945"[82]. Overall the decline in inequality appears to be starker and broader in the period after 1945.

Specifically, from 1914 until 1918 the decline in inequality is relatively small.

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77 "Monaghan, Angela. "US Wealth Inequality - Top 0.1% worth as Much as the Bottom 90%." The Guardian. Guardian News and Media, n.d. Web.

78 "62 People Own the Same as Half the World, Reveals Oxfam Davos Report." Oxfam International. N.p., n.d. Web.

79 "Current World Population." World Population Clock: 7.4 Billion People (2016). n.d. Web.

80 "Atkinson A. B. Inequality: What Can Be Done? N.p.: Harvard UP, n.d. Print. p.1

81 "Inequality Meaning in the Cambridge English Dictionary." Cambridge Dictionary. n.d. Web.

82 "Atkinson, A. B. Inequality: What Can Be Done? N.p.: Harvard UP, n.d. Print. p.55

After World War II inequality fell in the countries who lost (Italy, Japan, France (which officially did not loose but was occupied) because of the chaos of war occupation, the destruction of assets and war settlements. It declined in other countries as well due to new government policies and the development of a welfare State. In the U.K the government of Clement Attlee instituted the National Health Service and a unified system of National Insurance. The goal was to reduce poverty and alleviate suffering for the population "by the end of the Second World War the Government had… assumed and developed a measure of direct concern for the health and well-being of the population..[83]". These policies along with the expansion of social provisions such as state pensions, social transfers to vulnerable groups and progressive taxation were effective. In the U.S economy, which had lower government intervention, the decline of inequality from 1945 until the 70s is also attributed to women entering the work force. Many of them were married to low income men and thus their increased participation rate led to lower inequality overall[84].

It can be safely assessed that the reduction of inequality experienced after the end of the Second World War was largely due (after the effects of the wars are factored in) to government policies. At the same time government expansion happened in a period in which, thanks to technological progress and reconstruction efforts, wages and GDP grew rapidly.
All of this occurred while unemployment remained low. From 1960 to 1973 unemployment was 2% in France, 1.9% in the Uk, 0.8% in Germany and 4.8% in the U.S.[85]

After the 70s market inequality started to offset the role of the welfare State, which was reduced at the same time. In the U.S income tax at the top was lowered from 90% in 1962 to 70% in 1980. Today it stands at 40%[86].
In addition unemployment rose consistently in the following decades. Even today unemployment levels stands at 10.5% in France, 4.7% in Germany (2015 Data). In the U.S. it currently stands at 4.9% and it is near a historical low (but the participation rate is at its lowest level since 1976)[87].

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83 "quoting Richard Titmouse from: Atkinson A. B. Inequality: What Can Be Done? N.p.: Harvard UP, n.d. Print. p.57

84 Atkinson A. B. Inequality: What Can Be Done? N.p.: Harvard UP, n.d. Print. p.59

85 Atkinson A. B. Inequality: What Can Be Done? N.p.: Harvard UP, n.d. Print. ch.2

86 "Syrios, Andrew. "The Good Ol' Days: When Tax Rates Were 90 Percent." Mises Institute. n.d. Web.

87 "TRADING ECONOMICS | Online Database, 300.000 INDICATORS FROM 196 COUNTRIES. n.d. Web.

Higher level of unemployment may lead to increase inequality. Other factors play a role such the extent of government protection (through social insurance programs) and private safety net such as the role of the family. All things being equal, if government protections decline while unemployment rises then inequality rises. Moreover unemployment is a problem on its own right as it reduces the quality of one’s life while jeopardizing future possibilities.

4.2. Inequality Today

The reason why inequality today is so prevalent has its origins in the 70s and remains true to this day. As we have seen inequality rose because of the reduction of governments’ actions and offsetting market forces (among which, the rise in unemployment). Many factors induced market forces to increase inequality . The most relevant are:

-Globalisation
-Technological changes
-reduced role of trade unions
-Growth of financial services
-Changing pay norms.[88]

The reason why Globalization plays a role is well known. Through the opening of borders and free trade agreements firms have shifted low skill works to countries in which wages were lower. As a consequence greater level of unemployment has occurred among unskilled workers. Due to greater unemployment and direct external competition wages have been falling as well. The average wage is now lower today than in 1979 ($4.03 per hour, which translates to $22.41 today compared to $20.67 in September 2016)[89]. This data is general and takes into account a steep decline for unskilled jobs and a rise in wages for college educated workers.

This steep diversion has been exasperated by technological progress. While firms have reduced the need for low skilled workers in developed countries they have begun to substitute them with machines. The fear of machines replacing human workers has long been persistent throughout history. The British Writer Thomas Mortimer stated in 1772 while referring to the advent of treadmills“…

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[88] “Atkinson A. B. Inequality: What Can Be Done? N.p.: Harvard UP, n.d. Print. p.83

[89] “DeSilver, Drew. "For Most Workers, Real Wages Have Barely Budged for Decades." Pew Research Center. n.d. Web.

those (machines) which are intended almost totally to exclude the labor of the human race[90]".Obviously his fear did not manifest and the industrial revolution led to millions of new jobs. However, it seems that we are reaching a turning point. The rate of technological replacement may soon imbalance the rate of job creation. In fact "Industrial robots could be 16% less costly to employ then people by 2025[91]". Furthermore, Michael Osborne (Associate Professor in machine learning at the University of Oxford) "has examined the characteristics of 702 occupations in the US, predicting 47% will be overtaken by computers in the next decade or two[92]".

Moreover, the jobs that tend to be created out of technological innovation deepen inequality *" New machines and new methods of production… require more high-skill workers today than in the past. The development of computers require workers to be increasingly computer literate. The new methods of production require workers to be more flexible and better able to adapt to new tasks. Greater flexibility… requires more skills and more education[93]"*. Last but not least there has been a decoupling of productivity and wage grow. Up until 1973 productivity growth was reflected in workers' hourly wages. The higher the productivity, the higher the wage. From that moment on increases in productivity have not lead to income gains. This has happened because of greater inequality, not because of it. The share of income that previously went to the workers has been transferred to the people at the top and to capital owners[94].

Another reason for the stagnation and decline of worker's pay is due to the declining role of trade unions. Higher union participation allows for greater bargaining power. If a decline in participation occurs then the bargaining power is reduced or disappears. The reasons for the decline are largely political and cultural. Legislation changes in the western world have weakened the unions. At the

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90 "Rosenthal, Rebecca J. "In Praise of Short-Term Thinking." The Atlantic. Atlantic Media Company, n.d. Web.

91 "Young, Angelo. "Industrial Robots Could Be 16% Less Costly To Employ Than People By 2025." International Business Times. n.d. Web.

92 "Quoting Michael Osborne from: Branco, Jorge. "Robots to Replace Almost Half of Jobs over next 20 Years: Expert." Brisbane Times. n.d. Web.

93 "Blanchard, Olivier, and David R. Johnson. Macroeconomics. 6th ed. N.p.: Pearson, n.d. Print.p.300

94 "Bivens, Josh, and Lawrence Mishel. "Understanding the Historic Divergence Between Productivity and a Typical Worker's Pay: Why It Matters and Why It's Real." Economic Policy Institute. n.d. Web.

same time, the gap between educated and unskilled workers has been rising. As the pay gap between the two has risen trade unions' participation has declined[95].

In section 2.2. I stated that banks are incentivized to issue loans towards families rather than businesses because they are legally less risky. This same process has led to the spectacular growth of the financial industry since the 70s. After government deregulations banks were no longer required to have lending limits and their lending policies could not be directly controlled by the central bank anymore. That meant that capital allocation (through credit creation) has been decided by the banks themselves. This in turn has led to the development of trading and derivatives activities that are largely more profitable than direct financing to the real economy. One of the reasons why they are more profitable is because they provide an immediate return while loans to businesses, for example, are slower to generate profits. This process can be labelled "trading culture". It " deters companies from investments that take time to pay returns, instead watching for opportunities for profit that can be generated in the current fiscal quarter[96]". This "culture", which has its roots in the cultural tendency to choose an immediate reward rather then wait for a greater return later on, is exacerbated by technological progress. The faster the exchange and the availability of any process the greater the human impatience. " The need for instant gratification is not new, but our expectation of "instant" has become faster, and as a result, our patience is thinner[97]" (Narayan Janakiraman, University of Texas). A study by The Pew Research Center's internet & American Life project further highlights this," Negative effects include a need for instant gratification and loss of patience[98]".

How capital allocation towards financial markets affects inequality is easy to discern. If banks and investment funds prefer financial activities that do not create any economic turnout then economic growth will be affected because less capital is allocated to the real economy. If there is less economic growth than inequality tends to rise. Furthermore the growth of the financial industry only benefits a few, that is, those who create the loan (the banks) and those who trade financial instruments such as derivatives, bonds and stocks. Those assets are largely allocated to the already wealthy 10

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[95]"Atkinson A. B. Inequality: What Can Be Done? N.p.: Harvard UP, n.d. Print. pp.93,94

[96] "Turbeville, Wallace. "Finance Is to Blame for Rise in Inequality." TIME, n.d. Web

[97]quoting Narayan Janakiraman (University of Texas) from: "The Growing Culture of Impatience, Where Instant Gratification Makes Us Crave More Instant Gratification - The Boston Globe." BostonGlobe.com. n.d. Web.

[98]"The Growing Culture of Impatience, Where Instant Gratification Makes Us Crave More Instant Gratification - The Boston Globe." BostonGlobe.com. n.d. Web.

(and more discernibly) 1% of the population. Even though a little part of those assets is held by the middle class they do not control it. They are controlled by “investment managers” and CEOs. Those people, because of the growth of the market in which they largely operate or indirectly benefit from, have seen rising wages compared to the rest of the population (which as stressed before, saw stagnating or declining wages). “ According to a 2014 study by Alyssa Davis and Lawrence Mishel at the Economic Policy Institute… chief executive pay as a multiple of the typical worker’s pay rocketed from an average of 20 times in 1965 to 295.9 in 2013[99]”.

In turn, the growth of the market depends on technological change “ A hundred years ago, Alfred Marshall, professor of Political Economy in Cambridge, described how top performers were able to demand high payments to a degree that depends on the size of the market served. The size of the market in turn depends on technology[100]”. A contemporary example of this, regarding financial markets, is the development of high frequency trading platforms. In 2009 and 2010 this form of trading (done exclusively by computers in milliseconds) accounted for between 60 and 70% of all U.S trading activity[101]. It is evident that today a large fraction of money, alias credit, is generated out of existing money with zero real economic activity involved.

4.3. Money Creation and Inequality.

As shown, banks’ money allocation towards financial markets (exacerbated by technological innovation) is one of the primary reasons for the rising of inequality worldwide. The relation between money creation and inequality however does not stop here.

According to the economist Thomas Piketty inequality can be divided into two categories: inequality from Labor and inequality from Capital. The two measures combined form overall inequality. Inequality from labor tends to be more equal than inequality from capital.

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99 “Morgenson, Gretchen. "Despite Federal Regulation, C.E.O.-Worker Pay Gap Data Remains Hidden." The New York Times. N.p., n.d. Web.

100 “Atkinson A. B. Inequality: What Can Be Done? N.p.: Harvard UP, n.d. Print. p.107

101 “Seth, Shobhit. "The World Of High Frequency Algorithmic Trading." Investopedia. n.d. Web.

In the Scandinavian countries “the top 10 per cent of earners receive about 20 per cent of total wages and the bottom 50 per cent about 35 percent[102]”. In more unequal countries such as France and Germany the top 10 percent roughly receives in between 25 and 30 per cent of total income. In the U.S it stands at 35 per cent[103].

From this data it is easily discernible how, while labour inequality exists, it is not very stark.

The real difference lies in inequality from capital.

In the Scandinavian countries the richest 10 per cent owns 50 per cent of the existing wealth while in most European countries the ladder climbs to 60 per cent[104].

At the top of the income distribution these two-forms of inequality combine. Those at the top with higher labour income tend to have higher capital income as well.

The divergence between labour inequality and capital inequality is due to the greater growth of capital in comparison to economic growth (by economic growth we mean GDP growth, which is the sum of all incomes in the economy). This according to Piketty is “a historical fact”. He further assesses that “ throughout most of human history, the inescapable fact is that the rate of return on capital was always at least 10 to 20 times greater than the rate of growth of society itself[105]”. From the data he collected he argues that economic growth historically has been between 0.1 to 0.2% while capital growth has been in between 2 and 3% at least. What drove inequality down after World War II throughout the world was not a reduction of the divergence between capital and economic growth but greater taxes on capital. Taxes that have been lowered from the 70s onwards[106].

In section 4.2. it has been demonstrated that inequality overall is not attributed to capital alone.

Other factors have played a role: Globalization (which can be partially attributed to technology as without proper communication it cannot exists), the rise of financial markets and changes in pay norms (due to political choices: credit creation, allocation and deregulation in the banking sector plus technology), trade unions weakening (due to: political choices and social changes brought about by technology) and technology itself.

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[102] “Piketty, Thomas. Capital in the Twenty-First Century. N.p.: Belknap of Harvard UP, n.d. Print. p.255

[103]“Piketty, Thomas. Capital in the Twenty-First Century. N.p.: Belknap of Harvard UP, n.d. Print. p.255

[104]“Piketty, Thomas. Capital in the Twenty-First Century. N.p.: Belknap of Harvard UP, n.d. Print. p.257

[105]“Piketty, Thomas. Capital in the Twenty-First Century. N.p.: Belknap of Harvard UP, n.d. Print. p.353

[106]“Piketty, Thomas. Capital in the Twenty-First Century. N.p.: Belknap of Harvard UP, n.d. Print. p.355

It can thus be seen that, to the core, inequality can be attributed to capital growth, political choices and technology.

Capital growth is the underling element which is embedded, as Piketty argues, in capitalism itself.

Political choices, like the government policies in place after World War II, can offset the inequality produced by Capital growth. Nowadays these same government policies do not decrease inequality, they augment it. (Tax evasion due to Globalization also plays a role).

Technology instead seems to act as a multiplier, increasing both income divergence (between low and high skill workers) , allowing for higher capital growth through financial innovations and increasing top incomes through market expansions.

Taking government policies as given, which go back to governments and are influenced by history and social change, we remain with technology and capital.

In section 3.3. I argued how, in the long run, it is technology which causes economic growth and not capital. As we have seen the two variables coexist and influence one another, but being at the base of the socio-economic system capital (through capitalism) plays a greater role in defining inequality. Capital *" refers to financial assets or the financial value of assets, such as cash and funds held in deposit accounts, as well as the tangible machinery and production equipment used in environment such as factories and other manufacturing facilities. Additionally, capital includes facilities, such as the buildings used for the production and storage of the manufactured goods*[107] *"*.

As seen in section 2.2. all deposits are created by banks through credit allocation as long as there is a demand for loans. (in the past money was increased from a given base, sections 1.2.a,b,c). Financial assets value is assessed by banks as well, for example: when banks buy government bonds they create the money to do so. Physical assets' worth in turn is determined by how much money (credit) there is in the economy. Every time a bank creates capital, it attaches an interest to it. That interest is the transfer of wealth from the capital receiver, the customer, to the capital creator, the bank. The interest in question is the rate of return of the capital. The rate of return is the profit for the bank, which then pays its staff, distribute it to its shareholders and uses it as capital reserve (section 2.1).

Consequently inequality is embedded into this economic system. The fact that it originates from a right (to create credit) given by the government to private sector agents is even more outstanding.

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[107] "What Is "Capital"" Investopedia. n.d. Web.

However, this is not to say that this process is the only reason for the inequality we have today. At the beginning of this chapter I stated that there is a level of inequality that depends on someone's ability and intelligence. That inequality, in a system which allows it, is welcomed. Furthermore, there have been times in human history in which money growth was at zero and thus new capital (and the interest attached to it) was not created. In these periods of time inequality was probably(there is virtually no economic data) given by the capital having being loaned to someone else (and not created for that purpose), social factors (such as belonging to nobility), inheritance and/or the structure of society itself.

To conclude, it appears that the majority of the underlying inequality today derives from how money is created in this system and it is exacerbated by the role of technology. Government policies, as seen, can reduce or even offset this underling trend. Even though governments interventions have lost efficacy due to globalization, it is important to remember that what has been given can be taken away.

5. Another way?

Although stark, today's reality does not have to be. Our monetary system has changed multiple times in the past (chapter 1).

A change is, indeed, of the outmost necessity. As it has been shown, money creation by banks is the primary cause for economic crisis, war funding and inequality.

Policies aimed at reforming our monetary system would address, as a consequence, the major issues that affect western civilization with positive effects for the developing and poor regions of the world.

This chapter provides the most important guidelines for achieving such change with an outlook on their effective feasibility.

5.1 Policy Guidelines

First of all central banks should be nationalized. There is no reason for the private ownerships of these entities as they have a fundamental public function. Central banks today are owned by the very banks that they are supposed to regulate and this kind of conflict of interests cannot be tolerated in a modern capitalist society.

Doing this will meet strong political oppositions (likely funded by banks themselves) but should not be impossible to implement as the majority of the public already believes that central banks are public.

Taking over these private entities will not, however, do anything to significantly change the system.

All things being equal, if the central bank is public but its policies remain the same or are ineffective then nothing will change. It is private banks that control the majority of credit creation, not central banks (section 2.2). This is the case for the Bank of England. The bank has been owned by the U.K government for the majority of the XIX century up until today[108] (2016).

Publicly owning these institutions will thus just make government policies directed at them more effective.

[108] "About the Bank." Bank of England. n.d. Web.

The source of the recent economic crisis was reckless and excessive credit creation by banks. This was exacerbated by very fluid financial markets which made it easy for banks to sell these loans, thus removing all remaining incentives for their soundness[109].
The majority of loan requests are approved by banks on the basis of an internal credit assessment risk (section 2.2). All of these systems, ultimately, are based on the banks willingness to lend. This exacerbates credit booms in positive economic times and credit contractions when the circle turns. Every bank should therefore use the same credit assessment risk, provided by a public entity, in every country they operate. This policy would remove the "trust and confidence" factor (section 2.2.) while cutting out most of the loans created for personal or political favors. It would be very effective but it is very hard to implement due to political reasons and likely strong banks opposition.

The second policy would be to limit the amount of credit banks can create in the economy. This is nothing new as it was done for much of the history of central banking itself. Up until the seventies central banks could limit the amount of loans banks could make by augmenting the reserve ratio.
Tighter capital requirements will in turn decrease leverage. A higher proportion of loans would have to go bust before a full blown crisis could erupt. In addition, there should be no upward limit to capital requirements. As of today, banks all over the world have a downward limit for capital requirements (meaning they can't go under a certain level) but they can't go upward as well. With the implementation of the first policy the downward limit would be effective (currently it is not, section 2.2). The removal of the upward limit would increase competition as costumers would run towards the banks with higher reserves. This policy is difficult to implement for the same reasons cited in the paragraph above.

The third policy would be the removal of the central bank being the "lender of last resort". As controversial as it may seem, central bank interventions make private banks more reckless as they are well aware that, if big enough, they will be saved by the government. Removing this practice would make them less risk-seeking. This policy has been adopted by the European Union and it is in place as of January 2016[110]. It does not completely remove bail-outs by the public but it rules that shareholders should pay first. Needless to say, it has caused a lot of controversy in Italy, where it was first applied. This is understandable as those who bought stocks and bonds from these banks thought

[109] "Turner, Adam. Between Debt and the Devil. N.p.: Princeton UP, n.d. Print.pp. 164,165

[110] "The LSTA Publishes a Form of EU Bail-in Contractual Recognition Provision." LSTA (The Loan Syndications and Trading Association. n.d. Web.

they could not fail. It would have been reasonable and less politically costly to bail them out first. Only after this the new legislation should had been applied.

The fourth policy would be directing the creation of credit towards real economic activities which increase supply in the economy. This has been done by China from the 80s up until now. Government intervention led to banks making loans for industrial activities and growth friendly businesses. This policy partially explains the recent Chinese economic miracle.

The fifth policy would set the conditions for the diffusion of alternative currencies, such as bitcoins, with the ultimate goal of using just one for online payments and everyday transactions. Such currencies cannot be manipulated (unless hacked) and are set to release a set amount of new money slowly up to a predetermined limit. The problem with such a form of money does not lie in its nature but in the relationship with the money in circulation. Credit creation can inflate or deflate these currencies just like any other assets. As a result they are unreliable if they can't be used for all transactions. The only way through which their circulation can reach the public is if they are used to pay taxes. The city of Zug in Switzerland recently conducted an experiment by allowing residents to pay city services in Bitcoin up to 200 francs[111]. It is likely that the banks plan is to associate bitcoins to conventional money while limiting their importance[112].

As a consequence of these policies the financial market would be less liquid as credit creation is haltered and directed towards the real economy. Less financial market liquidity is actually a good thing. As seen in section 4.2, bigger and complex financial markets cause inequality and distort the economy. A full implementation of these policies into laws would thus contribute indirectly but largely to the reduction of inequality.

From a procedural point of view, the guidelines proposed are easy to implement as they only require the passing of a regular act of parliament. At EU level the task would be legally more complicated due to the fractionalization of the member countries. On the other hand it could be politically easier as each member country does not want to pay for another's banking sector. The economic impact is

[111] "Higgins, Stan. "Swiss City to Accept Bitcoin Payments for Government Services - CoinDesk." CoinDesk., n.d. Web.

[112] "Rizzo, Pete. "Citi: Bitcoin Is an Opportunity for Banks, Not a Threat - CoinDesk." CoinDesk, n.d. Web.

likely to be negative in the short term as lending is reduced. In the long term positive outcomes will prevail (as money creation does not cause economic growth, section 3.3).

5.2 A Complete Overhaul

The policies listed do not aim at completely revolutionizing our monetary system as they can be easily implemented gradually. There have been calls, however, for a complete over haul.

Henry Simons, founding father of the Chicago School of Economics argued for banks to stop lending based on credit creation completely ".. in 1933 he joined other economists in proposing to President Roosevelt " the Chicago Plan" which would require all banks to operate with 100% reserves[113]" .

Under his plan money creation would be implemented by the government in relation to the assessment of output growth. Long-term inflation would be eliminated, inequality due to interests charged by the private banking sector would disappear [114] and the Federal Reserve system would be rendered useless and/or abolished.

This proposal has been reprised by two economists (Michael Kumhof and Jaromir Benes) at the International Monetary Fund. In the paper " The Chicago Plan revisited" they propose the same concept[115]. It is not a coincidence that the first plan was proposed to President Roosevelt after the crisis of 1929 while the second one was written after the crisis of 2007-2008.

The implementation of these "revolutionary plans" would steeply curb inequality, downsize the financial markets significantly, make wars harder to fund and empower the government to direct lending and/or money creation towards the real economy (within a policy agenda, for example: funding eco-friendly or low impact economic activities/renewable energies etc.).

In these cases as well the only thing needed is an act of parliament (or Congress) as the Federal Reserve System and the majority of the world's central banks were instituted under ordinary law (section 1.2.b,c). They were never part of the Constitution.

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[113]"Turner, Adam. Between Debt and the Devil. N.p.: Princeton UP, n.d. Print.p. 187

[114] "Jackson, Andrew, and Ben Dyson. Modernising Money: Why Our Monetary System Is Broken and How It Can Be Fixed. Print. p.155

[115] "Benes, Jaromir, and Michael Kumhof. "The Chicago Plan Revisited." IMF Working Paper (n.d.): Web.

It is evident that there is a complete lack of political will to proceed in this direction (due to a number of factors, among which strong banking support to the political class) and informed citizens to back these proposals.

Conclusion

The process of how money is created and what it stands for is the main pillar of our economic system. Without understanding it there can be no change in society and the underling trends will only worsen.

Unfortunately, it is as important as it is not understood. The historical view which sees money as the evolution of barter is incorrect. This view, furthermore, implies that money is just a mean to achieve an end. It is not. The majority of people (among which deputies and senators) do not know modern day banking practices. If the origin of something is not understood then it is unlikely that any action taken will have effect. The creation and regulation of money has long been absent from the public debate. Policies are adopted by private entities with government's complacence and any form of democratic debate has long been missing.

It has been shown that money is the leading cause of inequality today as interests attached to credit creation are redeemed by banks on the basis of an established right. This right was achieved through political influence and under the premise of crisis avoidance. The latter argument does not have any standing in reality as artificially created "booms and busts" have only worsened after the institution of modern day banking practices.
Credit creation is, furthermore, the main vehicle through which wars are funded, removing democratic accountability and allowing for greater profits through interests. These wars are the cause of much of today's suffering.

The financial market's role has been extended by technological innovation and it is , thanks to the removal of credit limits in the 70s and the 80s, currently detached from the real economy. It thus deepens inequality and renders the economy more prone to boom and bust cycles.

To the core, money creations is a cyclical process. Prices are inflated (before mostly goods, as of this moment financial assets) and detached from underling economic activity. When the detachment becomes too prevalent a bust occurs.
When this happens central bank's intervention is required to establish market confidence and liquidity once again. When booms and busts are long, not marginal and spread to the overall economy, inequality widens. It is not a coincidence that both the crisis of 1929 and 2007 happened at a time in which inequality was staggeringly high.

This cyclical cycle goes against the trend of increasing technological innovation and rise in the standard of living. It can, furthermore, be pertained to a cyclical view of history rather than a progressive one.
This relationship is now long strained. On one hand we live in a world in which things change at an ever accelerating rate, in which nations and people are increasingly connected and in which the results of one's actions are the consequence of another. On the other hand the cyclical system explained embeds crisis which spread to the social system, between people and between States. Crisis which men can longer afford. Because of the advances in science and technology we now live in a world in which nuclear weapons could destroy the entire Earth ecosystem, in which wars lead to millions of deaths, in which the impact of humanity is now so relevant that we are changing the climate. In these times the current system of credit allocation should be abolished not only because it is unfair, unjust and uneven, but also because it is outdated.

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Summary in Italian

Nel mondo,oggi, c'è un grande livello di incomprensione su cosa siano i soldi, quale sia la loro storia, cosa rappresentino e come vengano creati.

Lo scopo di questa tesi è di illustrare brevemente la storia dei sistemi monetari, la storia delle banche centrali e come i soldi vengono creati al giorno d'oggi.

Susseguentemente viene spiegato l'impatto che l'attuale sistema ha sull'economia reale, il ruolo dell'inflazione, lo stretto legame tra creazione monetaria e le guerre per poi analizzare le ineguaglianze sociali e le loro origini.

Nell'ultimo capitolo sono analizzate possibili alternative al sistema attuale e vari interventi di natura legislativa con relativa analisi sulla loro possibilità di realizzazione.

Secondo la teoria predominante, basata a sua volta sul pensiero di Adam Smith, la moneta è da considerarsi la naturale evoluzione del baratto.

Questo in realtà risulta essere falso in quanto nessuna evidenza storica confuta tale teoria.

Al contrario in passato transazioni di natura economica venivano svolte seguendo un sistema di credito. La persona interessata ad uno strumento, per esempio, lo richiedeva al legittimo proprietario, il quale, se poteva, glielo dava. Nessuno scambio veniva registrato. Semplicemente la persona creditrice avrebbe richiesto, successivamente, un favore di simile valore quando ne avrebbe avuto la necessità. Il baratto veniva effettuato solo con stranieri. Siccome questi ultimi probabilmente non sarebbero tornati nella comunità vi era la necessità di uno scambio immediato.

Alla fine del medioevo le relazioni commerciali esplosero in Europa occidentale. Come conseguenza di ciò nacque la necessità di velocizzare e rendere più sicuri i commerci tra città. I banchieri nel moderno senso del termine nacquero infatti in quel periodo. All'inizio la loro funzione era quella di conservare metalli preziosi (come oro e argento) e dare in cambio una ricevuta al cliente. Conseguentemente la ricevuta, e non l'oro, veniva scambiata al momento della transazione in modo da evitare rapine e ridurre considerevolmente i costi

di trasporto. I banchieri, all'epoca presenti in maniera rilevante nella Repubblica di Venezia e il granducato di Toscana, si resero conto di come la maggior parte delle persone non ritirasse i metalli preziosi rinchiusi nei forzieri. Per comodità e convenienza le ricevute da loro emesse venivano equiparate al denaro. Conseguentemente iniziarono ad immettere più ricevute dei depositi effettivi. In questo modo procedettero a creare, de facto, moneta.

Queste ricevute poi venivano immesse sul mercato come prestiti ai quali poi doveva essere pagato un interesse. Nonostante questo processo fosse incredibilmente profittevole per i banchieri, essi avevano un limite fisico nel numero di emissioni di ricevute dato dalla quantità di riserve presenti nelle loro banche. Infatti se un numero di persone superiore al normale richiedeva i metalli allo stesso tempo, le banche che usavano questo sistema avrebbero dovuto, per forza di cose, dichiarare fallimento. Questo in effetti è quello che successe in varie banche della Repubblica di Venezia, Amburgo e Amsterdam.

Per risolvere parzialmente il problema di questi fallimenti, per uniformare i vari tipi di ricevute e per mantenere il sistema vennero istituite varie banche centrali. La prima fu la Banca d'Inghilterra nel 1848. Il governo Britannico aveva necessità di fondi dopo aver perso una guerra contro la Francia e perciò decise di instaurare una Banca centrale che immettesse nuovo denaro in circolazione in modo da pagare i costi di riparazione.

Numerose altre banche centrali vennero instaurate negli Stati Uniti ma per via degli effetti negativi sull'economia e il rischio di controllare le sorti della nazione tramite il potere di stampare moneta, furono tutte abolite. Andrew Jackson in particolare riuscì ad abolire la terza banca centrale degli Stati Uniti affermando che era incostituzionale, ingiusta e antidemocratica.

Nonostante gli sforzi di Jackson e l'opposizione di numerosi padri fondatori degli Stati Uniti (tra cui Thomas Jefferson e Alexander Hamilton) una banca centrale fu definitivamente istituita negli Stati Uniti il 24 Dicembre 1913.

Una delle promesse e giustificazioni per la creazione di tale banca fu l'assicurazione di evitare la maggior parte delle crisi economiche tramite meccanismi di controllo e l'intervento stesso *della banca centrale. Appena 20 anni dopo scoppiò la più grande crisi del XX secolo a Wall Street. I suoi effetti si diffusero velocemente in varie parti d'Europa inclusa la repubblica di Weimar, già in ginocchio per via della prima guerra mondiale.*

I meccanismi di creazione monetaria si sono sviluppati molto rispetto alla mera creazione di moneta dei banchieri veneziani del XIV secolo.

Oggi giorno vi sono tre tipi di soldi. Il primo tipo è rappresentato dalla moneta fisica, ossia le monete di rame e le banconote di filigrana che la maggior parte delle persone hanno nel portafogli.

Il secondo è rappresentato da riserve della banca centrale. Queste riserve sono accessibili solo dalle banche presso la banca centrale. Il pubblico non ha alcuna possibilità di utilizzarle.

Il terzo tipo di soldi è il più interessante e il più comune. In sostanza sono i soldi presenti nei conti correnti. Questi soldi digitali sono creati dalle banche commerciali dal nulla ogni qualvolta vi è domanda per un prestito. Non vi è infatti alcuna differenza tra prestiti (e quindi debiti) e soldi. Questi ultimi sono creati come conseguenza della richiesta (approvata) di un prestito. Siccome la maggior parte dei soldi in circolazione viene creato in questa maniera (il 97% nei paesi sviluppati) rimane la domanda su dove si trovino i soldi per pagare gli interessi attaccati ai prestiti che vengono generati. Questi interessi non sono presenti e di conseguenza, a livello di sistema, vi saranno sempre bancarotte e fallimenti per via dell'inesistenza dei soldi necessari a pagare gli interessi. L'unico modo per pagarli, in teoria, è richiedere un nuovo prestito. Questo è il motivo per cui il livello nominale dei debiti è sempre cresciuto nell'ultimo secolo e continuerà a crescere.

In più, dal punto di vista etico la transazione tra banca e cliente (richiedente del prestito) risulta essere, come minimo, problematica. Da un lato il cliente deve ripagare il debito contratto con il suo tempo e lavoro, dall'altra la banca non svolge nessun tipo di sforzo in quanto la creazione dei soldi per il prestito richiede solo il tempo di digitare la somma richiesta su un computer. Oltre a questo vi è da considerare il fatto che i soldi creati dalla banca non *sono tecnicamente "soldi", ma appunto, "credito". Questo credito ha funzione di soldi perché viene accettato come tale ma da un punto di vista legale non lo è.*

Vi fu un processo al riguardo (Montgomery VS Daly, 1969) in Minnesota (U.S). Il signor Daly sostenne che il mutuo contratto con la banca non era valido perché la banca non aveva dato in scambio soldi veri. Il giudice si trovò d'accordo con il signor Daly ma la sua decisione non fu purtroppo applicata (ma mai annullata).

Infatti, se tale decisione fosse stata applicata avrebbe avuto come effetto immediato la cancellazione di ogni prestito mai effettuato da qualsiasi tipo di banca e la conseguente immediata distruzione del sistema monetario e dell'economia mondiale.

Come è facile immaginazione, gli effetti del sistema monetario si estendono a molte area dell'economia reale. In particolare il processo di creazione monetaria comporta inflazione, ossia l'aumento dei prezzi. In passato l'inflazione era rivolta a beni di consumo, oggi giorno gli effetti della politica monetaria si riflettono interamente sui mercati finanziari. Questo è il motivo per cui il "quantitative easing" in atto negli Stati Uniti, Unione Europea e Gran Bretagna non ha causato un aumento dell'inflazione.

La creazione di moneta dal nulla da parte di banche commerciali ha in più l'effetto di facilitare il finanziamento delle guerre. Stampare denaro infatti rimuove molti fattori di responsabilità democratica. Invece di una tassa (in molti casi superiore al 50% del reddito totale) viene stampato denaro. A sua volta stampare denaro crea inflazione (in beni di prima necessità o attualmente, assets finanziari) che riduce il potere di acquisto dei cittadini.

La prima e la seconda guerra mondiale sono state finanziate in questo modo in molti paesi, in particolare negli Stati Uniti.

L'argomento principale a favore della creazione di moneta da parte delle banche private risulta essere la crescita economica. Secondo i fautori di tale affermazione l'allocazione di credito a favore di attività produttive aumenta il Pil. Questo può essere vero nel breve termine ma non ha nessun effetto nel medio-lungo. Infatti l'unica causa della crescita economica risul-

ta essere lo sviluppo tecnologico. In più, nel sistema attuale il denaro viene allocato verso il sistema finanziario e il mercato delle case perché più profittevoli nel breve periodo.

L'allocazione di credito crea, inoltre, disuguaglianze economiche.

Queste sono causate da 5 fattori: Globalizzazione, cambiamento nei metodi di pagamento, crescita del sistema finanziario, sviluppo tecnologico e diminuzione della partecipazione sindacale.

La globalizzazione può essere attribuita parzialmente alla tecnologia (senza di essa viene meno la comunicazione necessaria). La crescita del sistema finanziario e il cambiamento nei metodi di pagamento è attribuita alla creazione di moneta nel sistema attuale. La diminuzione del ruolo dei sindacati invece è dovuto a scelte politiche e a cambiamenti sociali portati dalla tecnologia.

Riassumendo, le disuguaglianze economiche sono portate da: scelte politiche, tecnologia e sistema monetario (e il suo conseguente effetto sul capitale). Escludendo scelte politiche (influenzate da governi e dalla storia e cultura del paese) e il ruolo della tecnologia (variabile costante), si rimane con il sistema monetario.

Ogni volta che un prestito viene creato da una banca avviene un trasferimento di ricchezza dal richiedente del prestito al ricevente, alias la banca. Da questo semplice concetto partono numerose ramificazioni che vengono aggravate dal ruolo della tecnologia.

Il sistema monetario è cambiato numerose volte nel corso degli ultimi cinquecento anni e non vi è nessuna ragione logico-razionale per la quale non dovrebbe cambiare ancora.

Vi sono numerose proposte rivolte a cambiare il sistema attuale. Le più rilevanti sono state espresse da Henry Simons, uno dei fondatori della Chicago School of Economics e, più recentemente, da Michael Kumhof e Jaromir Benes, economisti presso Il Fondo Monetario Internazionale.

Il modo in cui la moneta viene creata e allocata è il singolo fattore determinante, in questa società, della maggior parte dei processi che si svolgono nel mondo. I soldi sono infatti il mezzo tramite il quale avviene la maggior parte delle attività svolte dagli esseri umani. Appare *evidente che chi controlla la loro creazione e la loro collocazione controlla la maggior parte di queste attività.*