Final Degree Project – Degree in Economics

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THE ROLE OF CENTRAL BANK AND TRADE CYCLE: EVIDENCE FROM SPANISH ECONOMY

Student: Ibai Bonet Gómez

E-mail: al226660@uji.es

Tutor: Simone Alfarano

Abstract

In this paper we try to understand the consequences of the active intervention of the Central Banks in the economy and the reasons behind it. We'll pass through the Spanish economy from 2000 to 2016 and many macroeconomic aspects, like inflation, interest rate, bank credit or housing prices, to form a general view of the evolution of the crises and try to find out the causes and consequences of it. We will explain our thesis helping us with the Trade Cycle of the Austrian Economic School. At the end I'll propose some possible solutions to the problematic.

JEL code: B25, B53, E58, N14 Europa

Keywords: Central Bank, QE, inflation, credit expansion, Fractional-Reserve banking.

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THE ROLE OF CENTRAL BANK AND TRADE CYCLE: EVIDENCE FROM SPANISH ECONOMY

1. **INTRODUCTION**

In this paper we try to understand the role of bank credit in the economy, and more concretely, the consequences in Spain. We are interested in the effects of the policies adopted by the Spanish government and the European Central Bank since 2000 and how affected in the economic boom until 2007 and the following economic crisis. To understand this we are going to explain the Economic Cycle of the Austrian School of Economics and we will reinforce the arguments with the data.

We will analyze the Spanish macro economy and how the policies adopted in the past decades are completely wrong to obtain positive and sustainable results. Finally we will put the focus on the performance of the European Central Bank and how the system banking is taking advantage of the fractional-reserve banking in their own interest at expense of the people unknowingly, and how we could find a solution to this problematic.

My interest for the Austrian School of economics started in 2015 with a conference of Juan Ramón Rallo in the faculty of Economics on University Jaume I of Castellón, Spain. In that moment I had a mentality closed with my studies in college of Keynesianism and neo-classical economy, that conference shocked me. It was based on demystify the economic program of a national party with a great boom in these years. Since that moment my critical thought about the 'mainstream' economy appeared and I started to study and investigate for my own more about this School. My first steps were the books of two recognized Spanish economists like J. R. Rallo and Daniel Lacalle, and later I approached to two fathers of the Austrian School, F. Hayek and L. von Mises. I have to remark the difficulty doing this project because I haven't much information about the Austrian School of Economics in the University and basically it’s been straight ahead by own-initiative. On the occasion, I show gratitude to my tutor for invaluable debates in class and supporting in this project.

2. LITERATURE REVIEW

Bank loans are the most important source of finance in the EU. The predominant transmission of risk in the current monetary system it's thanks to bank loans, putting in contact the people who save their money to other people who need this capital to kick off their personal projects, called capitalists. Banking system put in contacts both sides of the equation to make sure that the biggest part of the capital it's been used, obtaining returns for this activity. The problem appears when in periods of panic the depositors want to come back their savings and the bank don't have it. That's caused by the fractional-reserve banking system dominates the world economy.

For the Austrian School that it's one of the most dangerous problems in the economy because it violate the principle of private-property rights and the deposits are not supported by a monetary base. The other one is the politic of "easy money", the manipulation of the interests by all central banks, creating instability in the prices and investment in the real economy.

In 1912 Ludwig von Mises created the Theory of the Cycle in his book *The Theory of Money and Credit.* It was a revolution because the theorist before thought that the cycles lasted around 30 or 40 years. Mises didn't focus in the timeline of crisis, rather in the fundamentals and the consequences of them in the economy. The artificial reduction of the interest by the central banks boost the entrepreneurs and investors to perform new investment projects that before doesn't be profitable thanks to the high interests, giving a bad allocation of the available resources. This reduction of interests it's not created by the interaction between supply and demand of the economy, the consumers and the savers, it's created by an external organism creating deep distortions. The clue is that the entrepreneur needs to know the changes in the conditions of the market and the relatives changes in the demand of goods and services, also anticipate the politics of the central bank for inject liquidity in the economy, or not.

We can see that if the Central Bank injects more money than the economy requires the harmony between consumption and saving breaks and it start a period of over-indebtedness. Increases deposits in banks, and start a new expansion of the credit by the intermediaries. That increase the capacity of demand, buying goods and services than they don't need before if the expansion of the credit had not occurred. In the worst of the cases it traduces in buying new properties.

The Spanish economy it's no different than other ones. With an increase of the bank loans[1] and their rates collapse, the credit goes to the sector that it's suffering an inflationary spiral, the construction, and housing prices raise. Notice that the entrepreneur has the labor of keep an eye on the demand of the economy and the movements. The chief of construction had to attend the demand of the houses that it's producing in the economy, despite of he is conscious of the easy money is passenger, or maybe he doesn't know it and go up in the race. Anyway, the entrepreneur had to attend the demand, or he is get out of the market and condemned to fail. It's all or nothing.

Since 2000 the banks are aggressively financing housing, creating great disequilibrium in the market economy. The prices in the houses grow up creating profits for the companies, and then, the interests push up since 2006[2]. As we can see in Figure 1 the construction sector was concentrating more share of bank credit until 55% of them, meanwhile in 1999 it were only the 30% of the share. Then, after 2006 the share of bank credit came back to levels of 1999.

1 See the annual report of *Banco de España.* Page 33, chart 2.1; available at: http://www.bde.es/f/webbde/SES/Secciones/Publicaciones/PublicacionesAnuales/InformesAnuales/12/Files/inf2012e.pdf

2 See the annual report of ECB, chart C25 Euro area money market rates at: http://sdw.ecb.europa.eu/reports.do?node=10000048

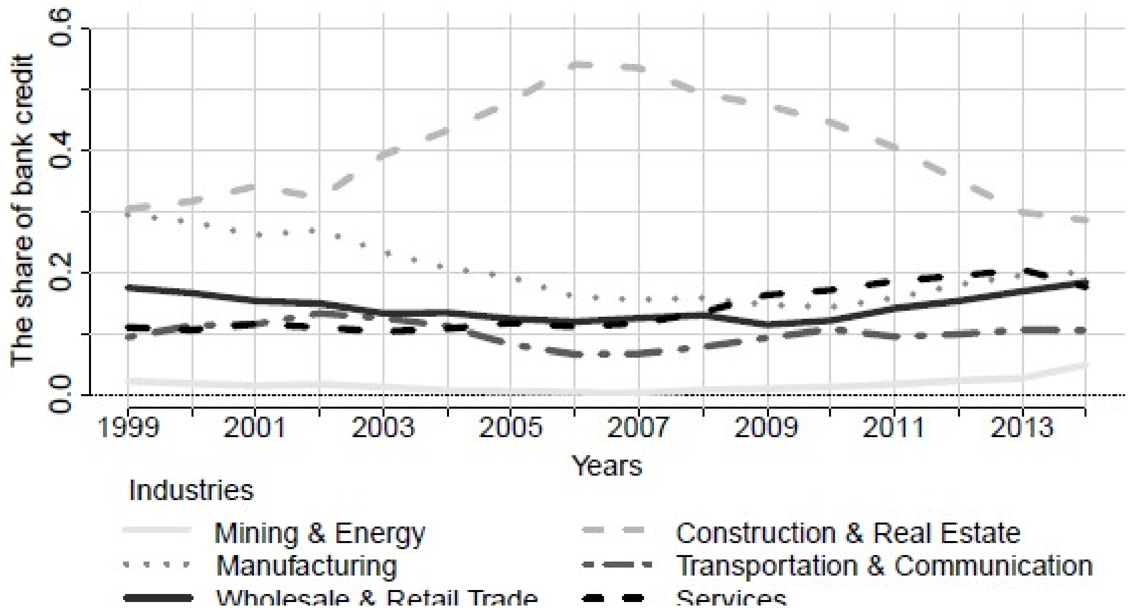


Figure 1: The share of bank credit over industries, showing the crowding out effect.

It's not casual that the period of biggest share appears when the returns of the capital slow down. In this moment, when the politic of easy money reverses, the transference of founds stop, decreasing the demand of the less essential goods, paralyzing the investment projects. In this moment start the recession of the cycle. The monetary expansion origins also the reduction of the real founds in the economy, because is wasted in consumption not sustainable in the production along the time.

3. **INFLATION AND CREDIT EXPANSION**

Since the creation of the European Central Bank, the European bureaucracy has imposed by themselves the control of the inflation between rates of -2 and +2%, scared by the hyperinflation suffered in 1923 by the Republic of Weimar in Germany. Their objective is to maintain the stability of the prices, the exchange of the currency, the execution of the monetary policy and the stability of the financial markets. For this reasons the ECB has the power to control the quantity of money in circulation, the credit and the deposits.

The problem from a perspective of Austrian School is that these issues it's had to be solved by the free market and not from a central institution. As we could observe in the Figure 1, control of the interest of credit and deposits cause bad allocation of the money in circulation. Without the control of Central Banks the interest of deposits and credit it's established by the interaction between supply and demand of money. The free market regulates himself because without the ECB injection of money the financial markets had to be more careful to deliver credit to enterprises who has huge problems of solvency, avoiding the concentration of the credit bank in few companies.

"Inflation is that policy which by increasing the quantity of money or credit seeks to raise money prices and money wages or seeks to counteract a deadline of money prices and money wages which threatens as the result of an increase in the supply of consumers 'goods", Mises said it in *Interventionism*. As the contrary of many people think, lower interest rates and inflation don't benefit the immense majority (worker people, professionals and middle classes) at the expense of a small minority of capitalist, the entrepreneurs and credit institutions. Nowadays, in the times of debentures, saving banks and social security they are creditors, and the "tax in the shadow", how many economists called the inflation, reduce their currency purchasing power.

It's easy to say that the inflation is caused by the increase in the volume of money, and that's not the only reason. The value of the money is correlated with the expectations of the future supply of the currency, if people think that the Central Bank is going to print money or the supply of money increases because it's a period of stable growth, the value of the money decreases. Then, the real value of the currency depends not merely on the quantity of liquid money in circulation, also their quality. The quality of a currency is explained by how the investors appreciate that the Government could collect taxation in the future, because the national currency it's always used to do it. So, strong currency had a positive correlation with a strong government that can provide security to pay debt. Best examples are United States and Europe, which accumulation of public debt is around 100% and 86%, respectively. The confidence of the markets in these economies, the most solvent in the world, makes that the flow of money don't stop the refinancing of debt with a very profitable interests. Strong currency permits maintain the confidence of the markets, but also could be that it's overrated. In this case, the inflationist pressure about the economy is huge, and the prices has a quickly increase along the time. As a consequence, consumers need more units of the currency for buy the same product than before. So, the most harmed it's the consumers, the poor and middle class, which see his power of purchasing is lower.

Another reason is the increase on prices, but not inflationary. It could be that the economy it's collapsing, like always happened in a period of war, before the Central Bank print money to pay the liabilities and put the whole economy at his service, always had a problem with the shortage of goods. In this case, when the demand of the goods are increasing to satisfy their necessities but the real goods are not increasing at the same level, or even are reducing it, the result is an increase in the price of goods. In fact, that happened when States, kings, or the institutions in front of the country along the history take the control of the economy and force the companies to fulfill their demands. The bad allocation of economic resources, the human capital, the stoppage of cooperation between consumers and entrepreneurs, provokes a destruction of the economy, and nobody can avoid the inevitable end: hyperinflation. The best example of it is the hyperinflation of the Weimar Republic, in 1923. We can't avoid the rule of supply and demand in economy because it's always working, and denying it only causes a bad allocation of the economic resources and crisis.

In the figure 2 we can observe the inflation of the European countries since 1999, where the inflation increases every year around 1-3 per cent until the crush in 2008, when the financial crisis explode in Europe and infect the system. 2008 is the highest pick in the chart, reaching the 4% for making the huge drop in the whole period, arriving until -0,5% of inflation.

The increasing inflation it's in great part cause of an increase of the supply of money and credit, especially when that increase is not supported with an increase of the reserve of monetary bases. Central Bank blown up the volume of money in circulation with the excuse of enters in a deflationary spiral. As a consequence, increased the amount of money of the people, and then, increase the supply of the goods as a consequence. How the supply of goods didn't increase in the same way than the supply of money, the prices go up. The injections in the economy of money paper provoke a reduction of the value of each dollar, euro, or national currency, because the relative value of each one is less. With the abundance of money, the prices rise to attend the demand.

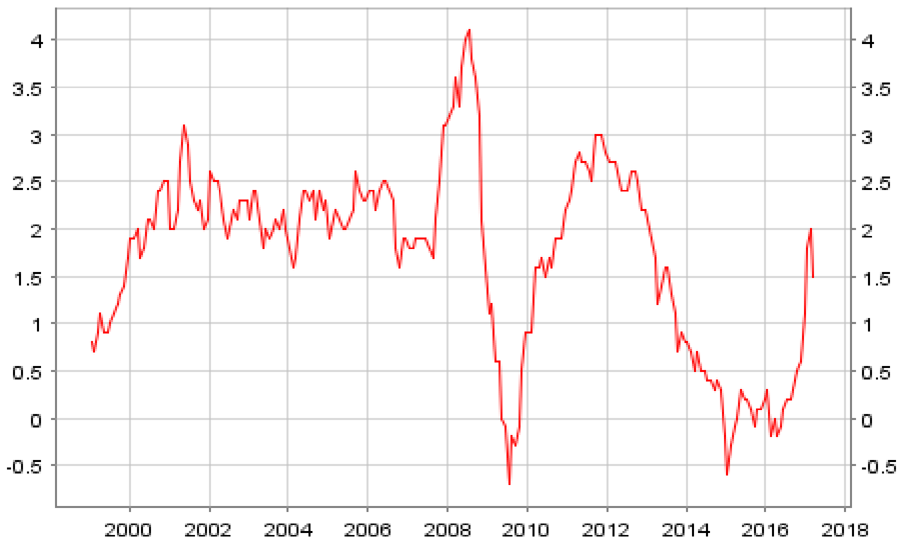


Figure 2: Inflation Chart. Source: http://www.ecb.europa.eu

As we said before, the Central Bank has been intervened in the economy to avoid excessive volatility in the inflation, and then, the changes in prices. The meaning of the figure 2 is that in this period, almost two decades since 1999, the citizens are losing purchase power, because the prices of the products and services are increasing consequence of the inflation, but the salaries are not. The inflation in this period is around 1-1,5%, so prices continued the increase in the Eurozone.

In the case of the Spain, in only 15 years the prices on consumption in Spain have raised 25 points, in other words, the prices had raised a 25%. We had a period between 2015 and beginning of 2017 when the prices were lower basically caused by the minimum price of petrol in 2016, around 30$. So, the prices of the energy push the prices into the general level. Generally, the CPI is a good proxy for the inflation, so we will combine these two variables in the study.

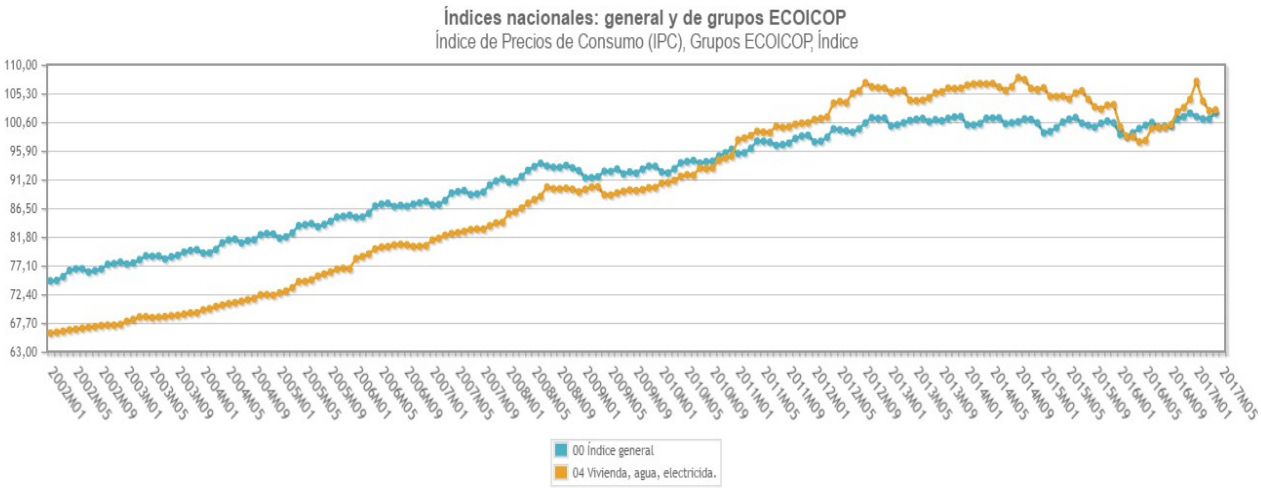


Figure 3: Spanish Price Index since January 2002 until May 2017. Source: www.ine.es

The differential between Europe and Spain it's about a 1% on inflation[3], in periods of continue growth, Spain generates more inflation in the prices than the rest of the Europe, basically, for the great influence of the energy in the country.

After the year 2010, in many countries in Europe and the world, take place another recession extending the crisis that affected with anger the banking system. Many banks in Spain, almost them old saving banks, passed a great problem of liquidity and solvency. The solvency of the European banking system was in danger because it was expanding through them, the risk prime take off in the most affected countries, like Greece, Spain, Portugal, or Ireland. In that moment the European Central Bank had to intervene injecting hundred millions of Euros to rescue banks because the problematic of get finance in the markets. After 2012 Europe get immersed in a period of stagnation of the economy. After a few years of crisis, citizens saw a reduction of the wages and the increase of the unemployment. Banks stopped to provided finance families and small companies. The great default of them during crisis gets the banks taking fewer risks for the loans, so the investment in the productivity economy was replaced by the public debt.

3 See the quarterly inform of UFM Market Trends: https://trends.ufm.edu/informe/la-amenaza-inflacionaria/

Spanish public sector was so productive during the real-state bubble and received a lot of artificial revenues. Instead of save them to subsequent periods of crisis, the government refinanced the debt sending bonds, and increasing the waste in the “Walfare State”. The irresponsibility was in first place of the banks, giving credit without control; even include families and companies of doubtful debts. Second place, the government that permitted the overinvestment in industries like construction without value-added. The consequence was a crisis in the system banking, with a general default in all the economy, completely necessary after years of bad over-investment. Most entrepreneurs were confused by low interest rates stimulated by the Central Bank, making a lot of projects profitable when it weren’t real, how we could see after the crisis, when the interest pick up. In the Figure 4 we can see the evolution of the interests in Europe since 1999:

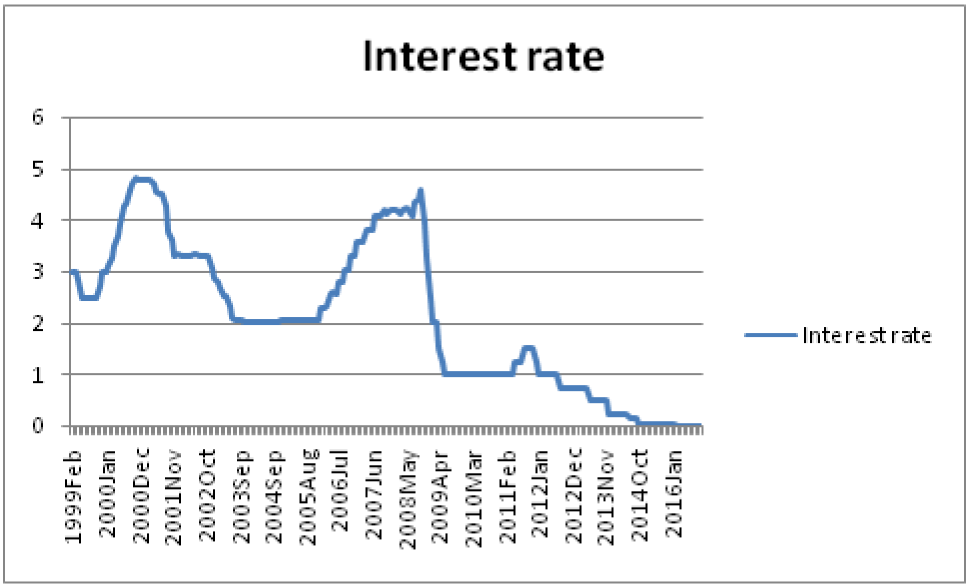


Figure 4: Interest rates

In the beginnings of the 20th century started the crisis named ‘.com’, because many companies raised their prices in the markets so quickly based only in the used of Internet. As always, a speculative bubble appears because the traders and capital funds invest in the markets to obtain profits. In the same way, in 2007 burst the subprime crisis in US, spreading to all the markets. Both cases affected the interest rates in the same way: the Central Bank push up the interest rate. The risk of non-payment it’s too obvious, and banks stop the flow of credit like this, pushing up the interest. This permit obtains more benefits for the olds credits to recover the default of families and companies can’t pay, in other words, banks need to recover the solvency and liquidity of the entity. With high interest, the overinvestment is forced to reduced and start a period for reorganized the resources of activity productive. Families started to save money and capitalize it after a boom of investment.

After 2010 the banking system has been in danger constantly with the rescue of Greece, Portugal, Ireland and Spain. To healthy it, the European Central Bank injected millions of euros of liquidity to avoid a generally bankruptcy, that put in danger the entire Eurozone and the rest of the world. The path taken after this crisis it's different than the others before. Since 2012 the inflation started to sunk down into levels around 0%. That's not an appropriate scenario for a quickly growth "necessary" in the old continent, with great unemployment and quantities of debt never seen in history. There is an idea that monetary authorities have the power to guarantee high employment through the inflation, then, public opinion is favorable to use it. Inflation could be a temporary stimulating effect, but in the long run provokes bad adjustment of the problems. To guarantee this effect along the time is necessary increase inflation over time, and we all know the problems of this in 1920's by Germany. That policy of creating inflation is not sustainable in the long run.

So, from the point of view of continue reduction of inflation since 2012, until -0,5%, the Central Bank started the *Quantitative Easing* in March of 2015. The Quantitative Easing is a program of stimulus created to buy banking assets, mostly public debt in mode of investment. Banks bought lot of public debt during the crisis cause the increase of the risk premium, and the returns turned so profitable, considering that a European country with so many countries supporting their balances it's difficult that enter in a bankruptcy. Then, European Central Bank buys that public debt of the private banks, achieving a injection of liquidity, cleaning up their balances and changing the credit in long run of Public Treasure by cash that could be used at the moment.

Quantitative Easing had many consequences in the economy. First of all, interest rate shrank down, as we can see in figure 3; when the tittles of debt increased, the interest of public debt decreases because incentives the demand of them, and the prices increase, projecting confidence in the system. Also, the entities which central bank buy their duty had now a better cost of financing. At the same time, other assets like corporate shares are more attractive and relativity cheaper, helping to invest in the real economy.

Thanks to the reduction of interest rates and the injection of the liquidity, the banks could increase credits to the families and the economy because the public bonds are not so profitable, and then, banks assume more risks, reducing again the rates of private interest. That combination should provide people enough confidence to restart investing and consume again, reactivating the economy, increasing prices, inflation and leaving behind the ghosts of the crisis.

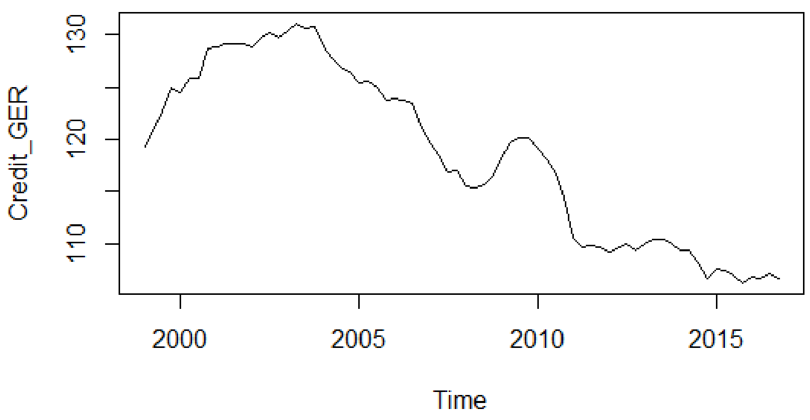
Other of the consequences is the depreciation of the currency, Central Bank is injecting liquidity in the economy, so every euro is losing value because the increase of the quantity on money in circulation and monetary base, and the markets receive this information and sell Euros decreasing his value, to buy other currency's, how it could be dollars, yens or pounds. The positive effect is the competitively of the currency, and then, the increase of the exportations, because they are cheaper respect the other currency's, helping to improve the commercial balances.

With this point of view, the effects of the QE proportionate cheap credit, more domestic spending, increasing of prices, inflation, and depreciation of the currency, giving the Eurozone a perfect scenario for economic growth and confidence to invest, consume, borrow and contract labor force. Giving these results, it seems the perfect receipt to get out of the crisis in a few years, even months meanwhile Quantitative Easing injects in the economy enough liquidity. But it has two problems: first, the QE is an measure that it could only used after a crisis, or recessions, because if the economy is growing up banks can send credits, families and companies are borrowing, the QE could have negative effects, pushing up prices and inflation more than the economy can resist. Second one, the strategy for when stop the QE it's not clear even for experts.

The big trouble in that crisis is an economy over-indebt in all sectors: families, private sector and public sector. So, the QE injects in 2015 billions of liquidity in the banking system to extend it to the economy, but Spain is passing a period of recovering the finance stability, repaying their debts after an insane bubble of false euphoria. The most interested in continue spending over their possibilities is the State, because after a great hole in their budgets that the European Union permit, the Central Bank come and rescue them to avoid a worst situation. In this situation, the only one who is harmed is the taxpayer, who sees that the next generations will pay the overrun of the deficit in the next decades. If families and companies are recovering of the indebt lower interests are not going to change nothing, they are not going to let themselves go again. Then, the result of this situation is that banks are keeping the excess of liquidity in their reserves, not sending more credit, because the risk is still high.

4. DESCRIPTIVE ANALYSIS

The modern banking system is based in the fractionary reserve, and the culture of debt creates growth and prosperity. It's not surprising that in a period of crisis, like 2008 everyone attack the capitalism and how it gave this system, with recurrent periods of crisis and recession in a short timeline. To show how that culture of debt it's different in two countries of Europe, we extract the data for Spain and Germany.



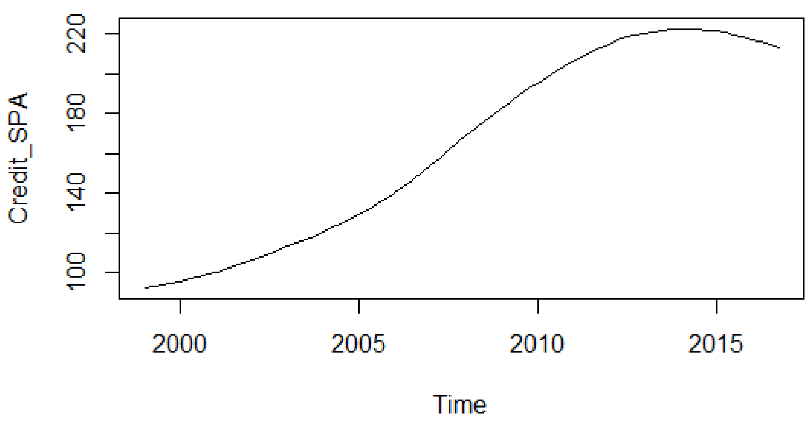


Figure 5 and 6: Credit to GDP, total credit to the private non-financial sector for Spain and Germany. Source: www.bis.org

Immediately, we can observe with both graphs how the tendencies in both cases are opposite. In Germany the credit expands it over the increase in GDP until maximum levels of 130% in 2004, from them on decreases since then until 2016, excepting a little increase in 2008-2009. The case of Spain is contrary, since 1999 the credit respect to GDP is increasing year over year, until 2015, coincidentally with the credit expansion of ECB. The correlation between them show us a negative one, around -90%, explaining that meanwhile Germany is reducing their credit for avoid the risk of another crisis, the private sector of Spain continues with the credit expansion, or at least, maintains it at the same level, increasing the credit to GDP. This indicator explain that the crisis of Spain provoked a big decrease of GDP, not in Germany, so that's one of the reasons why the sign of the tendency is contrary, aggravated by the credit expansion in Spain or the maintenance, arriving to 222% in 2015. The real economy is strongly dependent of the bank loans, and then, the credit market, household and the companies are assuming more risk to borrowing, permitting the lenders apply higher prices of loans.

Banks are financing housing in Spain in massive mode since the start of 21th century. To put in perspective, in the first decade of the century in Spain were build more houses than Germany, France and England together, achieving almost 1.900.000 new houses in 2006, the highest peak in the history. Banks permitted finance this overinvestment in this sector because it was so profitable for them, the interest rate dropped down with the increase of demand of loans, the developer companies saw an opportunity to make easy money with a market increasing over year, and investors and families saw an opportunity for make trade with new houses. This process pushed an inflationary spiral in the credit housing market, increasing house prices.

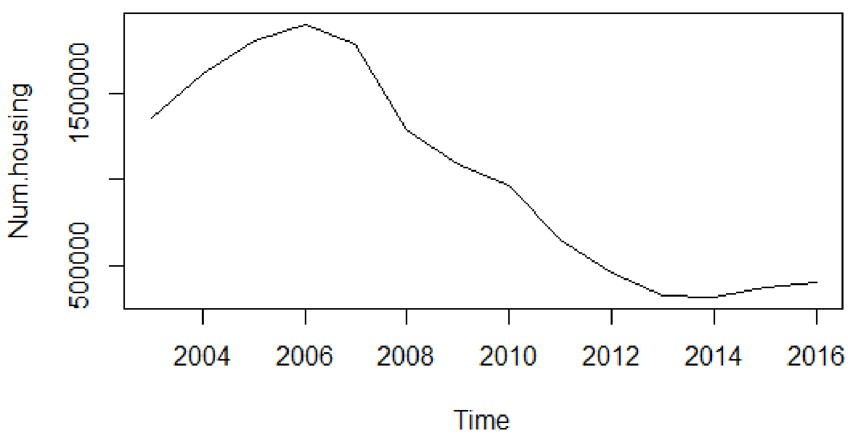


Figure 7: Number of new houses in Spain. Source: www.bis.org

Lowering interest make the entrepreneur a wrong idea of the real cost of the project, making profitable business when they are not. It's the same with the bubbles.

The entrepreneur who started to invest in the years previous of crisis pushed by the benefits of the construction sector received insane benefits, raising again the prices. As we said before, the credit in the bank system was focused in invest the real-state bubble in Spain, extending credit massively to families, big and small companies. The case of the families is extremely strange. Driven by a scenario of low interest and facility of loans, many families and individual investors saw an opportunity to invest their savings in a profitable business. Most of these families started to buy second and third houses in property, and then, sold them to other families who were looking an opportunity in this business, receiving bonuses of benefit in the transaction because the prices started to raised up exponentially. In the graph 7 we can saw the rapidly increase in the property prices. Taking the prices of 1995 as a 100 base, in September of 2007 show the maximum level 328% of difference in only 12 years. In other words, property prices increased more than four times in one decade. To put in perspective, let compare property prices between Spain and Germany helping us with figure 8.

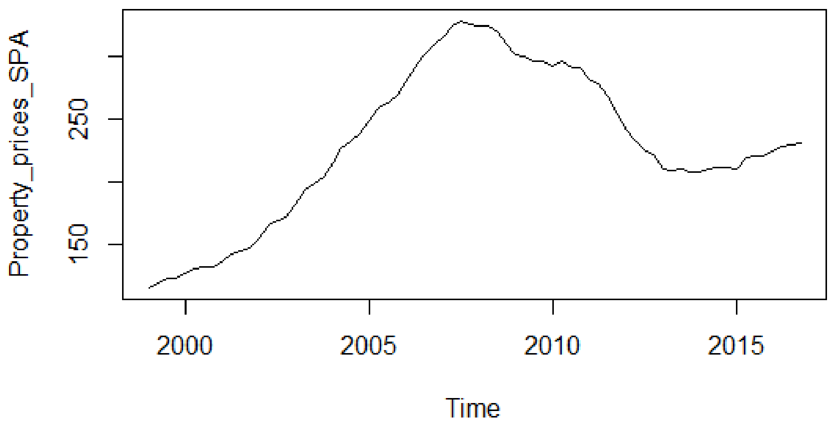


Figure 8: Property prices in Spain. Source: www.bis.org

First of all, the tendency is completely opposite between both countries along the time, except from 2015 henceforth, when the property prices increase for both of them. Also, in Spain we had a continue increasing of prices since before than 1999 until 2007 when it peak 320%, and then a huge reduction in the value around 200% in 2012, to back up again in the contrary direction. In Germany, the prices were maintained lower than the level of 1995 until 2012, taking a great increase of them till a 120% in 2016. Secondly, the scale is completely different. Meanwhile in Spain the range moves between 100 and 350%, in Germany it's moving around 90-125%. The magnitude of that it's almost 3 times large in Spain than Germany.

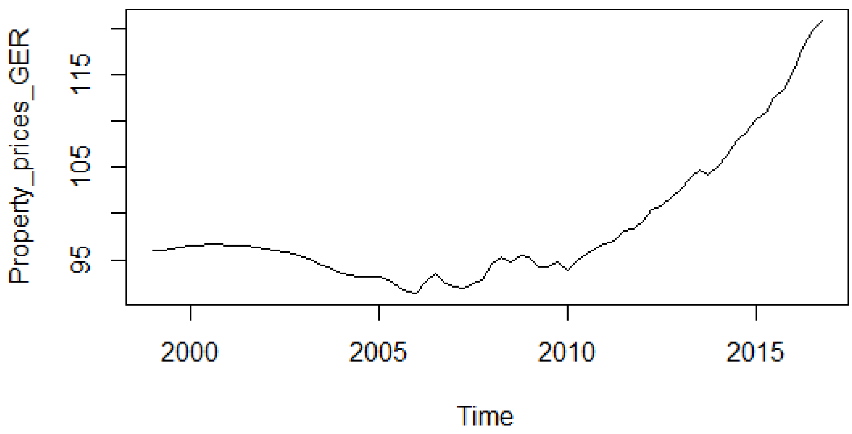


Figure 9: Property prices in Germany. Source: www.bis.org

In the next graph we can see how since 2000 the Spanish economy had suffered a continue increase in the consumer prices practically with a lineal tendency until 2014, when the prices suffered a little stop. Great part of this lowering in prices is because of the reduction in the price of the petrol, underneath of 30$, historical minimums. Once passed this point, prices recovered the upward trend thanks to the increase in the prices of energy avoiding the risk of deflation, but not the inflation, over than 2%. Comparing the Spanish data with the consumer prices in Germany, we have a similar conclusion in both cases, the trend and tendency along the time is quite similar. So, the real-state bubble didn't affected in the price consumption in a different way between Spain and Germany, because the correlation of them is 98%. That makes sense because the European regulation provokes that the commerce and trading between them and other foreign countries is submitted at the same level of taxation, provoking that the final prices in both cases had the same tendency in the data, despite of the final prices are not the same, as the wages and level of wellness it's not the same.

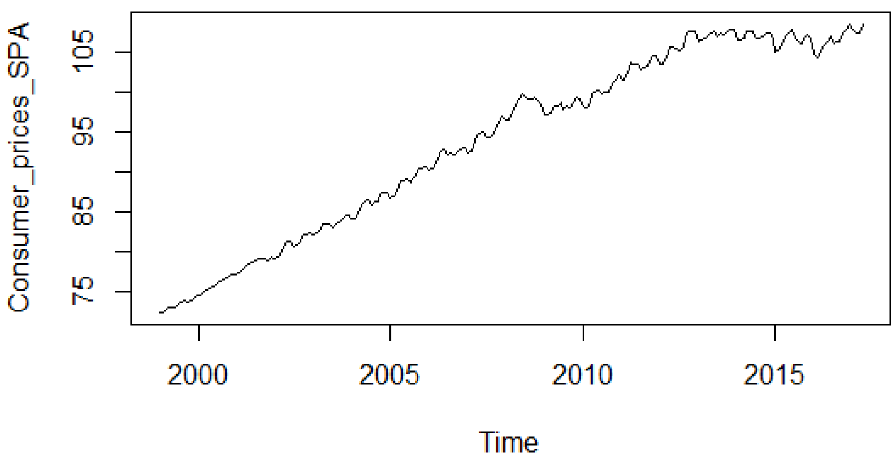


Figure 10: Consumer prices in Spain. Source: www.bis.org

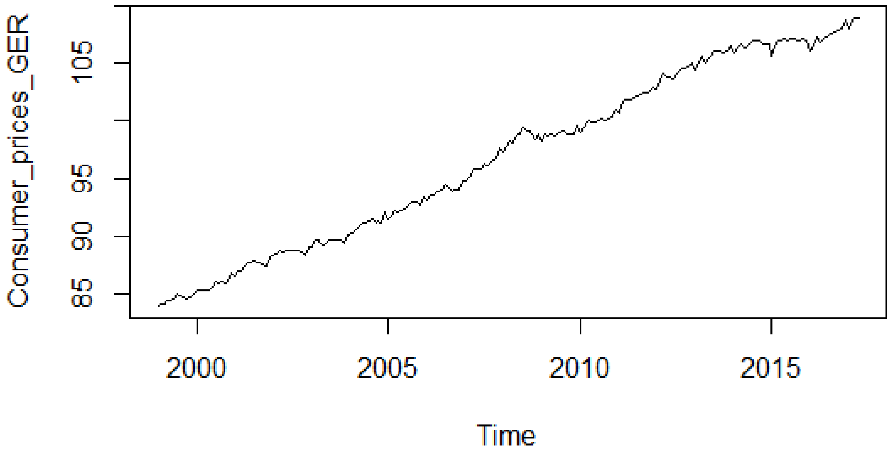


Figure 11: Consumer prices in Germany. Source: www.bis.org

So, in conclusion, the property prices in Spain increased more than 4 times in one decade, that's it, more than 300%, and in Germany prices were constant along the timeline. That's one of the reasons of the appearance of the real-state bubble. The inflationary spiral of prices and credit provoked the speculation with the properties with the conviction of it's a safety assets and it won't decrease their value. But not only families rode in the wave of the bubble, companies did it too. It was a huge creation of construction companies during the first decade of the century, the demand of housing had increased in over than a million per year, and the supply it couldn't be supported by the companies established , giving the opportunity to another companies to enter into the market to attend the new demand. The increase in prices continued along the years, and then property developer companies made insane benefits, but it weren't the only one. In a bubble of that dimensions the beneficiaries are everyone which participate in the process suffers the effects of the inflationary spiral. For example, in our case of real-state bubble, we have lot of indirect beneficiaries in the process, since the company which sell tiles for the houses, the concrete pavement, the company of services like water or electricity, the developers saw an increase of the demand, the banks sending more credit than they can support in actual situations, and of course, the families who saw how Spain has become in the European country with more private properties houses, with more than 80%, that's it, more than 80% of the population in Spain has his own house in property, higher than the 60% of average in Europe.

For all of that, the problem in our case it's not the law of property, is how properties were financed. The abuse of the bank loans gave us a general view of how the real state bubble was formed in a few years. Over-investment in inflated assets provoked that household debt double up in less than a decade since 800.000 millions of euros to 1.500.000, that's more than net disposable income of the country, concretely a 122% in the 2015[4]. That insane debt, more over than the whole income in the economy, it will cost decades to pay it, considering not only the full debt, so the payment of interests. With a labor market still recovered in the pre-bubble levels, the same as the salaries, the payment of the debt it will be a cost of opportunity too high, because extract productive resources in the economy and mine the capacity of saving for the next years or decades in the worst cases.

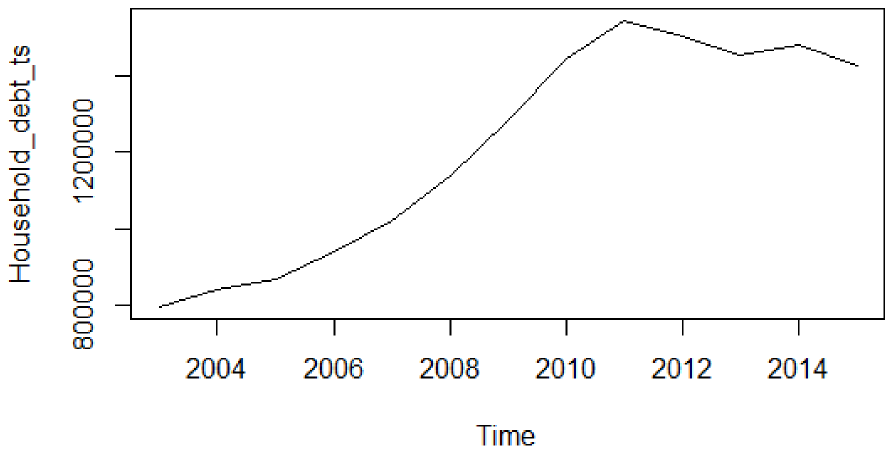


Figure 12: Household debt in Spain. Source: www.bis.org

The real-state bubble is the biggest difference between two rich countries in Europe, in our case Spain and Germany, why the crisis of 2007 in USA didn't affected in the same way. The German austerity and the well actuation of his system banking permitted the recovering of the crisis in a few years with huge solvency, meanwhile Spain 10 years after didn't recovered completely of the consequences, despite of the necessary reforms. The figure 4 and 5 show us how wrong policy regulations in the banking system permitted in Spain the over-investment and the excess of credit in the crisis, taking more risk than the German system. That's especially true for non-current bank debt, with a Gini index close to 0.90 that show a high concentration of debt.

4 See https://data.oecd.org/hha/household-debt.htm

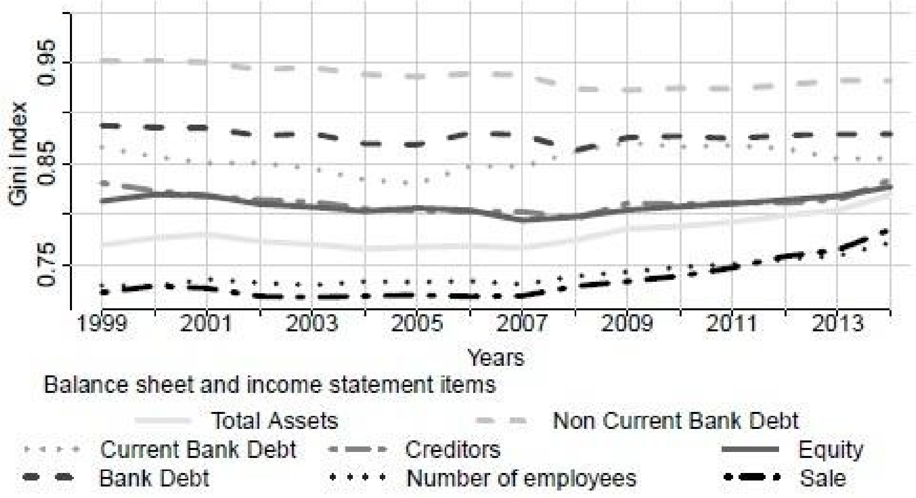


Figure 13: Gini Index, including all industries.

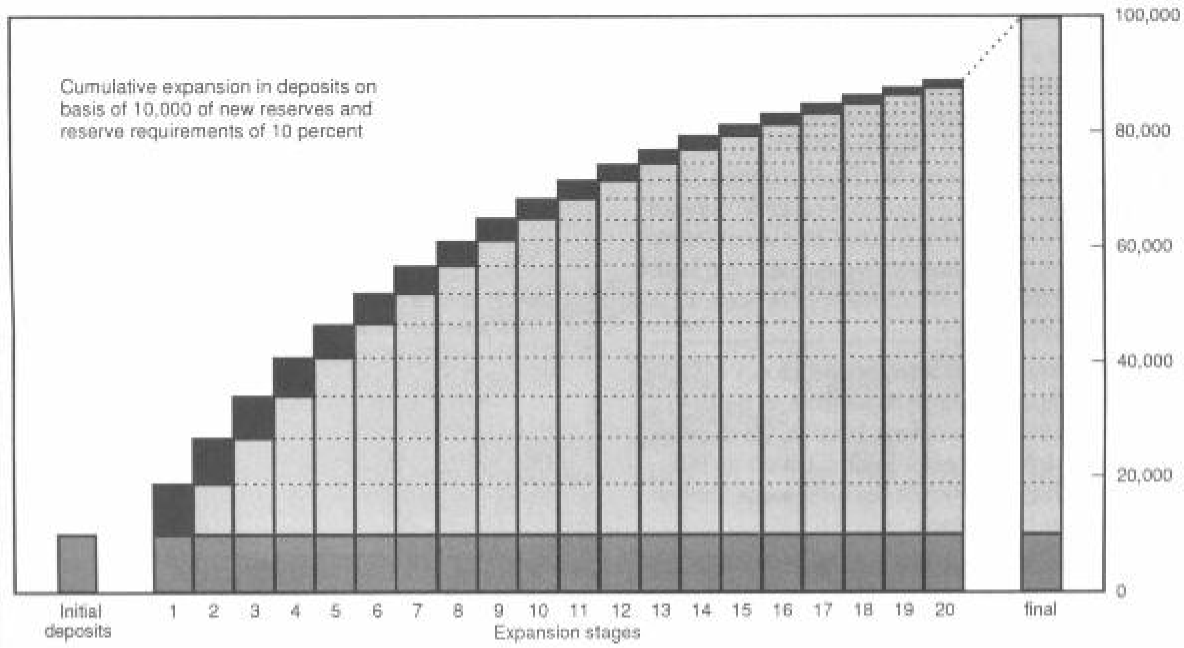
So, as we exposed before, the credit excess and the over-investment of families and companies carry Spain to another path during the years of crisis. But what is the reason behind it? Why the State permits the over-investment of their families and companies, taking so much rich and putting in danger the banking system, not only of the Spain, also the other developed countries? The reason is simple: in our system of Central Banks and the fully control of the monetary base, banks and States are benefited at the expense of the citizens. It works because the fractional reserve banking permit banks keeping only a small part of their deposits on reserves, not even close to 100%. That permit banks borrow funds from their depositors, people who save their money and lend it to the bank keep and save it, and lending to the borrowers, who are looking for opportunities in the credit market to improve their current liquidity in the short run. In that process, banks make money thanks to the spread of interest rate between the actions of borrow and lend. Since here everything is ok, the banks are making profits thanks the activity of intermediary in the credit market, keeping money of the savers and lend it to the investors through the interest rate. The problem appears when the activity of the bank consist in send more credit than the whole reserves. For example, for a deposit of $10.000 the bank keeps $1.000, and the other $9.000 is loaned to other person, that deposited it in other bank, that keeps again the 10% of the deposit in their reserves. If the economy is so bankarised, the money loaned by the banks soon or later will return in form of deposits by another client, creating something like money. To understand how it works, we can approximate it with this equation:

Total Money Created = Initial Deposit x (1 / Reserve Requirement)

Helping us with the before example, with an initial deposit of $1000 and a 10% of obligated reserves, we can obtain a total amount of money created of $10.000 only with the activity of sending loans and receiving deposits of the bank, their essential activity, acting like intermediary.

So, banks can create 10 times more money in circulation like their reserves, what is called 'the mechanism of creation of banking money'. The result is the expansion of money supply in $90.000 with the creation of $10.000, which is 9 times the amount of deposits. That cycle permits to the economy create a bubble of debt because banks could send credit over their possibilities without back not only in gold or silver, even without fiat money, creating the sensation of wealth and false euphoria.[5]

Figure 14. Expansion stages.



The fractional reserve banking had flooded the world economy of credit, so that's it the reason why nowadays only about a 10% of the whole money in circulation has supported on cash, the rest 90% are countable numbers in the bank balances. This system was into question since the implantation of it, and the Currency School of British economists were who make opposed of it. In 1844 in Great Britain, Prime Minister Robert Peel reformed the system banking to end the fractional reserve banking and introduce the 100 percent money. The Currency School realized in the

5 See Table 1. Stages of monetary expansion.

research of the system that Central Bank generates and perpetuates the inflation and contractions, creating cycles of up and downs in the economy. The Peel's Bank Act prohibited national banks to issue bank notes even with gold backing, transferring these rights to the Banks of England, acting like a Central Bank and creating a monopoly for the issue of money. That measure had positive consequences in theory because it keeps the creation of money under control and maintained it supported in real values like gold or silver, but it's supervised by a Central Bank, in turn supported by the State, only aggravating the problem of control of the new monopoly. But the Peel's Bank Act forgot apply the 100 percent to the receiver of deposits because it weren't considered like money supply like bank notes, but for the payment of banks is the same action, receive a loan (asset) and send bank notes or demand deposits (liability).

So, banks could send credit to the families and companies above their possibilities because it hasn't backed in gold or silver. Like we said before, Peel's Bank Act was a huge fail because the continue process of expansion and failure doesn't stopped since nowadays.

This is the base of the theory of the cycle. For the Austrian economists the cycle is created by the intromission of the Central Bank, because breaks the market process of fixing rates. This process reveals the intertemporal preferences of the savers and investors, and the interactions between them fix the real interest of the economy. But the credit expansion orchestrated by the Central Bank push the individuals to take another decisions that they don't make it normal situations, provoking irremediably misallocations, and then, the boom and bust, the cycle.

5. THE WORLD WITHOUT CENTRAL BANKS AND FRACTIONAL-RESERVE BANKING

In the point before, we proved that the intervention in the economy of the Central Banks, manipulating the interest rates and the monetary supply creates perverse incentives in the economy and misallocations of productive resources. But, what would happen in a non-intervened market?

5.1 POSSIBLE SOLUTIONS

The Austrian economists and theorists have a debate trying to solve the problem of Fractional Reserve Banking, although there is no conclusion yet. The Theorists of Liquidity thinks that the problem could be solved in a system of free banking, and the other part, supporters of 100% of minimum reserves, that it's necessary established the retention of the deposits in the reserves of the bank without provided to third parties.

The Theory of Liquidity manifests that the real problem behind the up and downs of the economic cycles is caused by maturity mismatches between savings and investment in the economy. The manipulation of the interests by Central Banks and the security of the rescue banking with the injection of liquidity for the recapitalization of the debts permit taking so much risk. In that moment banks are not required to take a position of clear solvency and start to emit mortgages for people of doubtful loans. The key of that theory is the marriage of the assets and liabilities in terms and risk.

Without a Central Bank, the competition between banks in a free banking system will disciplinary the companies to take less risks and change their philosophy to have more solvency with a better maturity mismatch, that could permit a recovery plan for enhancing the finance. The problem with fractional-reserve banking would be solved by the interaction between economic agents, because the risk of not paying the checks could be huge in times of crisis. For the savers who see that their bank can't support the outlet of deposits is a situation of panic that can give as a result bankruptcies for the banks which don't approximate their reserves to 100% of guarantee. So, the tendency in this theory is the approximation to a 100% of reserves of deposits because the probability of been caught practicing the fractional-reserve banking is higher with many banks competing every day. The stability of the economy will be achieved and the cycle would stop caused by the non expansion of the credit from the scratch.

Contrary, with the diminution of banks is less probably been caught, because the number of people in the same bank increases, and few banks can compensate each other the checks with the mechanism of creation of money, the fractional-reserve. In the case of only one bank controlling the flow of transactions it's impossible for the savers demand that the bank have in their reserves the entire money, because they don't have any options to leave another bank because has no competitors.

The other possibility for the exclusion of the Central Bank in the economy is the demand of 100% of minimum reserves. The supporters of this theory defend that the contract with the bank couldn't be under fractional-reserve banking because is immoral. One of the most supporters of that doctrine is the professor Huerta de Soto, and sais in his book (*Money, Bank Credit and Economic Cycles, 2008*):

"Indeed, the contract of deposit (*depositum* in Latin) is a contract made in good faith by which one person—the depositor—entrusts to another—the depositary—a movable good for that person to guard, protect, and return at any moment the depositor should ask for it. Consequently, the deposit is always carried out in the interest of the depositor. Its fundamental purpose is the *custody* or *safekeeping* of the good and it implies, for the duration of the contract, that the complete availability of the good remain in favor of the depositor, who may request its return *at any moment."*

That's the key in the argument. The contract of deposit only permits the protection and guard of the good (in our case money) and the return when the depositor asks for it.

Nowadays the contracts is so complicated and awkward, to the point of in most of the cases the depositor it's not sure of what is signing in the moment of make the contract. Most of depositors think that their money is insured by the bank, but there isn't. That money it's been used for emit new credit, without support in real money or any value how we explained before. In essence, using that money for private benefit of the bank, without any guarantee of bounced or not using it, breaking the essence of the contract of deposit, the guard and protection without their use. Instead, banks are using demand deposits like loans, and then there is the fraud, cause of their used.

In this case, each party doesn't have the same consideration for the deposit, so the contract falls in *error in negotio,* providing the deal the absolute invalidity. In the case that other people knew that signing the contract provided the bank to use their money, that contract is impossible because the bank can't ensure the disposition of the deposit in every moment. And finally, in the case of fractional-reserve banking the result is the same, banks can't provide the assurance of return the money because there is always in movement.

In both cases we have a huge problem of clarity of the contracts. And that's the main point of view, not the application of the free banking with or without the 100% of minimum reserves. Although we choose one of the options, the base to put the system in practice with solvency is clarifying them. The contracts right now are an entanglement of restrictions and regulations that most of the people who sign the contract with the banks didn't know what is really signing.

In that moment, when the simplification is reached, is time to debate which one of the option could be better for the operation of the system. Economy is not a pure science that we can predict with the 100% of confidence, and that's what a lot of people think and criticize us, the economists. We don't know categorically how would work the implantation of these systems in the current world, because the economy is a process on millions and millions of people interact each other, not only in the social life but also in commerce and business, results will improve with trial and error. But what we know is that Central Banks and the control of the monetary systems indirectly by the States are not working, and we have to end it.

6. FINAL CONCLUSIONS

We did a general review of Spanish economy since 1999 year and observed that the actuation of the ECB had important and decisive consequences in the country. Like Daniel Lacalle said in 'Escape from the Central Bank Trap', the origins of the crisis in history are always the same: the massive increase in the in risk generated by manipulating the amount of price of money, and in our case it was lowering interest rates artificially. We saw in Figure 3 how ECB manipulated the interest rates dropping it from 2000 to 2006 when the real state bubble start to form it. Housing was a low risk investment and banks start the expansion of credit to the families and entrepreneurs even with poor solvency ratios, because money was too cheap and the prices of houses continued rising.

When the defaults appeared in the previous years of crisis, Central Banks come to scene to protect solvency of the economy through QE, the miracle of growth and stability. But looking back in 2017, we can ensure that the "unconventional monetary policies" like QE, doesn't work like we expected. In words of Torsten Slok, Chief international economist at Deutsche Bank, in eight of the twelve cases analyzed the impact of QE in the economy was negative, in three cases was neutral and the only country on worked was United States because of the oil and gas producer, thanks fracking. The promise of liquidity, jobs, inflation and growth didn't work. The incentives are too big for these poor results.

Obviously the financial system needs a restructuration and if the QE doesn't have been applied maybe we had right now a different scenario with the system collapsing. What we need is set the monetary policy aside and focuses on fiscal policy, and encourages the companies to adopt traditional values of responsibility and free competition. With measures of Central Banks printing money, depreciating the currency, or injecting liquidity beyond the system needs only permits fall again in the same past mistakes, create a new bubble of free money and huge debt. And the most punished are the middle class, the savers who lost purchasing power and their wealth, transferring it to indebtment governments and the financial system.

Summarizing, what we need is to eliminate the monopolies of creation of money, the Central Banks cause the manipulation of the interest rates and the emission of money without control and give the market with the interaction between the economic agents the power of decision that it should always had. That gave as a scenario of free banking with huge competition between the banks, creating a new model on the companies will adopt a model more closer to a 100% of minimum reserves, to guarantee the keeping of money of their clients, or closer to a model according to a the theorists of liquidity, on the minimum of reserves is opened and every bank decide the % of assurance, focusing in the maturity mismatch to assure the solvency and the enough liquidity in the reserves to deal with the diary challenges of the market. For that, the clarity of the contracts must be adequate for everyone to not fall in legal frauds.

And for ending this project I would share this words of Ludwig von Mises in his book ‘Geldwertstabilisierung und Konjunkturpolitik’, translated like ‘The Theory of Money and Credit’ in 1928 about the trade cycle, boom and busts:

«The most important prerequisite of any cyclical policy, no matter how modest its goal may be, is to renounce every attempt to reduce the interest rate, by means of banking policy, below the rate which develops on the market. That means a return to the theory of the Currency School, which sought to suppress all future expansion of circulation credit and thus all further creation of fiduciary media. However, this does not mean a return to the old Currency School program, the application of which was limited to banknotes. Rather it means the introduction of a new program based on the old Currency School theory, but expanded in the light of the present state of knowledge to include fiduciary media issued in the form of bank deposits. *The banks would be obliged at all times to maintain metallic backing for all notes —except for the sum of those outstanding which are not now covered my metal— equal to the total sum of the notes issued and bank deposits opened. That would mean a complete reorganization* *of central bank legislation. By this act alone, cyclical policy would be directed in earnest toward the elimination of crises*. »

APPENDIX

Appendix A: creation of money with fractional-reserve banking.

	Assets				Liabilities
	[	Reserves	]		
	Total	(Required)	(Excess)	Loans and Investments	Deposits
Reserves provided	10,000	1,000	9,000	-	10,000
Exp. Stage 1	10,000	1900	8,100	9,000	19,000
Stage2	10,000	2,710	7,290	17,100	27,100
Stage 3	10,000	3,439	6,561	24,390	34,390
Stage 4	10,000	4,095	5,905	30,951	40,951
Stage 5	10,000	4,686	5,314	36,856	46,856
Stage 6	10,000	5,217	4,783	42,170	52,170
Stage 7	10,000	5,695	4,305	46,953	56,953
Stage 8	10,000	6,126	3,874	51,258	61,258
Stage 9	10,000	6,513	3,487	55,132	65,132
Stage 10	10,000	6,862	3,138	58,619	68,619
...	...	...	...	...	...
Stage 20	10,000	8,906	1,094	79,058	89,058
...	...	...	...	...	...
Final Stage	10,000	10,000	0	90,000	100,000

Table 1. Stages of monetary expansion

REFERENCES

Austrian Inflation, Austrian Money, and Federal Reserve Policy.

https://fee.org/articles/austrian-inflation-austrian-money-and-federal-reserve-policy/

Ebeling R. M., Garrison R.W., 1996. The Austrian Theory of the Trade Cycle and other essays.

Federal Reserve Bank of Chicago. Modern Money Mechanics. A workbook on Bank Reserves and Deposits Expansion.

French D. E., 1992. Early Speculative Bubbles and Increases in the Supply of Money. Mises Institute.

Hayek F. A., 1937. Monetary Nationalism and International Stability.

Huerta de Soto, J, 1998. Money, Bank Credit and Economic Cycles. Ludwig von Mises Institute.

Irimia R, Gottschling M, 2016. Taxonomic revision of Rochefortia Sw. (Ehretiaceae, Boraginales). Biodiversity Data Journal 4: e7720.

Lacalle D., 2017. Escape from the Central Bank Trap. How to Escape from the $20 Trillion Monetary Expansion Unharmed. Business Expert Press.

Mises L. V., 1980. The Theory of Money and Credit (Indianapolis, Ind: Liberty Classics).

Monetary Policy European Bank http://www.ecb.europa.eu/mopo/html/index.en.html

Petrovic M. Alfarano S., Teglio A., 2016. The role of bank credit allocation: Evidence from the Spanish economy. Universitat Jaume I.

Rothbard M. N., 1978. , "Austrian Definitions of the Supply of Money", en *New Directions in Austrian Economics*, ed. Louis M. Spadaro (Kansas City: Sheed Andrews and McMeel), p. 148.

Rothbard M. N., 2008. The Mystery of Banking (Auburn, Ala.: Mises Institute), p. 99.