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The liquidity trap and deflation in the euro area

Economics

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ABSTRACT

The article reviews the various theories about debt deflation, starting from the theory of Irving Fisher to modern, inspired by financial instability in the euro. Efforts will also be, to retrace the Keynesian theory, the liquidity trap, which tends to indicate the ineffectiveness of monetary policy and the strength of fiscal policy.

1. Introduction

This work is inspired by the recent phenomena of the financial crisis that affected the global economy and not save the euro area. It will try to highlight the interrelation ship between the well-known theory of Keynes's liquidity trap and the various theories on debt deflation. Will then be analyzed, consequently, the ineffectiveness of monetary policy in the stretch of liquidity, in which the interest rate is zero. In the first part the author will be privileged Keynes, followed by Fisher and Minsky. It will assess the impact of the liquidity trap in modern economies, inspired by the analysis of Krugman. It should be noted, however, that this is not a critical examination of the authors mentioned above, but a review of the various contributions of the same. The paper is structured as follows: the first section discusses the theory of Keynes's liquidity trap, the second, the theory of deflation seen in the literature, the third section discusses the various financial crises that have taken place in the globalized economies. In particular, the large Japanese crisis of the nineties. The fourth section addresses the issue of deflation in the euro area. The following are the concluding remarks.

2. Liquidity trap in Keynes

The liquidity trap was developed by Keynes in 1936. The analys is ispresented in the monetary area, where the alternative to Keynes is between money and securities. In his vision the purchase of securities is based on the interest rate and the price, it varies inversely related to the interest rate. When the interest rate is below 2%, in deed close to zero, investors ripen the expectation of a future rise in the rate. Itis, of a common expectation for all investors and, therefore, does not operate any exchange: no body buys or sells securities. Itis an incentive to hold money, liquidity becomes a "bottom lessp it"[1]. In the Keynesian view, the interest rate once reached zero will only increase, ie, mature the expectation of a rate rise.

The General Theory Keynes presents a question of money for speculative purposes infinite. Graph a curve of demand for money[2] with asymptotic behavior around the points where the interest rate is zero[3]. In other words, we can say that the LM curve has a horizontal, infinitely elastic to the interest rate. In that stretch, then any increase in the money supply has no effect on the real economy. In the modern version, the liquidity trap is characterized by two aspects, that is, short-term rates near zero[4] and deflation. If you experience any of these aspects do not show the phenomenon of the liquidity trap[5]. In the Keynesian view, the liquidity trap, monetary policy is totally ineffective, which means that the Monetary Authority has no chance to appeal to his main instrument: the short-term rate, to stimulate the economy[6].

Keynes had arrived at the conclusion of the ineffectiveness of monetary policy, stating the maximum effectiveness of fiscal policy. In the wake of that over the years Sixties and Seventies, Keynesian thinking dominated the decisions of *policy makers*. In the eighties, however, there was the monetarist counter-revolution and, therefore, they began to recognize the superiority of monetary policy. The Japanese crisis before, and the global financial crisis of 2007-2008 questioned the monetary policy, as a result of the imperfections of the market interest rate in the short could have negative values[7].

If the central bank is in the situation of the liquidity trap, it may decide to use the non-standard measures: *Quantitative Easing*[8]; operations in long-term securities; operations on the foreign exchange market; purchases of securities from financial institutions or the private sector; loans from the central bank; wealth creation[9].

For many authors (Bernanke, 2000; Krugman, 1998), a situation of liquidity trap would result in the collective expectation of future inflation. If, in fact, the interest rate was zero, the expectation of positive inflation, would generate a reduction in the real interest rate, which is closer to the negative value of the natural rate. Seen in these terms the liquidity trap would be, according to Krugman a "*expectational issue*" (Krugman, 2000). To do so, the monetary authority must keep the interest rate low in the long term even when you are out of the crisis. In this way you could have a reduction in interest rates even in the very short term (the cause of this would be expectation theory of the term structure), which would be positive for the economy. In defined, an expansionary monetary policy in temporary liquidity trap, as we learned in theory, would have no effect on aggregate demand. The result, however, would change if it were permanent expansionary monetary policy, as it would be to influence prices[10]. The analysis set out above does nothing but repeat elements considered by Keynes, who believed that out of the liquidity trap, the monetary authority has to influence the expectations of the community, it expects the rate stability for the future. The problem for Krugman is only a "*credibility problem. The public believes's That current monetary expansion will not be sutained*"(Krugman, 1998).

Convincing the community, however, is not easy, for a problem of time inconsistency that is recognized monetary authority. The central bank, in fact, noting the economy recovers, to ward off inflation increases rates. Ultimately, there is generated an expectation of future inflation and there is no escape from a liquidity trap. All that remains, the central bank, that convince the public that it is a responsible choice, because price stability can not last in a liquidity trap. The only solution is to accept inflation.

3. The deflation in the economic literature.

Irving Fisher in 1933 publishes *The Debt Deflation Theory of Great Depressions*[11]. At first his contribution had no relevance due[12].

Only recently the theory has been revived, thanks to the contribution of some authors (Bernanke1990; Mishky, 1991).

Irvin Fisher suggests the deflation theory to give an interpretation of the Great Depressionof the Thirties. He demonstrates the strength of the weak market to stabilize the economic system and the non-neutrality of money on real variables.

The theory of debt deflation Fisher, rests upward the following theoretical assumptions: it starts from the presence, in a given period, in *excess of debt*[13] (*for the investment boom, stimulated by technological progress*). This excess leads traders to liquidate the debts through the sale of assets; decrease in deposits, as you pay your loans, following a slowdown in the velocity of money and a fall in the general level of prices, which will result in the increase in' debt burden and, therefore, the price deflation. In particular, Fisher believes that

the business failure, the collapse of profits, investment income and of'occupation, causes a decrease in the nominal interest rate and an increase in the real rate. The effects of persistence on real quantities (investments, income, employment), together with the effects of propagation, are the real culprits of price deflation. Without the right economic policy measures the process leading to the economic and financial crisis. This whole process was the origin of the crisis of 29-crisis that did not remain limited but international crisis became systemic.

Theory of Fisher has been the subject of much criticism. In particular, it should: a) the collapse of the general price level may have a limited effect if it leads to a simple redistribution of wealth from debtors to creditors; b) if the decisions of creditors determine an increase in aggregate demand (because increased consumption and investment) stops the process above, the *effect Pigou*.

Though, there are many criticisms, however, you can make some observations: Tobin (1980) in the famous chapter entitled "Real balance effects reconsidered" showed that, if the marginal propensity to spend debtors (mainly by entrepreneurs and families) is greater than that of the creditors, the *Fisher effect* prevails on the *effect Pigou*, falling prices can not be any stabilizing. If the debtors fail, as in the course of a debt deflation, creditors must endure many losses related to debt collection (not easy to collect debts for the state of widespread insolvency). All this leads to a decrease rather than an increase, in aggregate demand[14] and thus causes a decrease in income and employment[15].

In modern times, Minsky (1975; 1982) considers the impact it could have on the economic system collapse in prices. According to Minsky, whenever traders find themselves in economic difficulty, to make payments, are forced to liquidate their capital goods, this may be due to a collapse in the prices of goods and generate illiquidity therefore insolvent . Minsky, then, in the early seventies has developed its own model to explain the financial crisis, and the fragility of the financial system. Human P. Minsky's theory, which is called the Financial Instability Hypothesis, shows: "(....) *That financial crises are a fact inherent to the capitalist economic development, and not an accident*" (Cesarini, Onado 1979 ; p.9-10). For Minsky financial instability has an endogenous to the financial system, that is, depends on the mode of financing of economic units. There is a financial fragility that is present in capitalist economies, which transforms a robust financial system in a fragile system. In particular, the cause is to be found in the changes present in the cash flows. The real and financial assets are bought by households, businesses, financial intermediaries through equity capital or third parties (debts). The debts involve the payment of interest and thus create outgoing cash flows. Besides the debt there is a set of activities that create a positive cash flow, since they can be sold, creating liquidity. The modern economy is characterized by the realization of investments for the creation of income, for the assumed debt and *capital assets*. The profits that are obtained from the investments generate cash out because you pay your debts, but also give an idea of the possible future profits. There are two main types of companies: a) profit-oriented businesses[16]; b) companies that are holders of *financial assets*[17].

There are three types of cash flow: a) income[18], b) budget[19]; c) portfolio [20]. Speaking of cash flow, according to Minsky: "(....)" *Financial instability is related to the relative importance in the economy of the cash flow of income, balance sheet and portfolio. The cash flow of income - wages, salaries and payments for the purchase of intermediate goods and final -is the basis on which rest the cash flow budget and that of the portfolio. If the cash flows of income achieved and expected to be sufficient to meet its payment obligations on outstanding debt of a company, then we will say that that unit has adopted a line of finance covered (hedge finance).However, the cash flows into account the budget of an undertaking may exceed its estimated revenue and therefore the only way to compensate for the difference is to renew the debts or even increase their volume; units that renew their debts following a line of speculative finance while those that increase their volume of debts to repay [the interests of] the old follow a behavior which we call Ponzi finance*[21]*. The relative weight in the economy of payments of income, balance sheet and portfolio determines the susceptibility, or degree of exposure of the financial system crisis destructive*[22]".

For companies in financial position blanket it is important to have a net worth greater than zero and in this situation changes in the interest rate does not have consequences on financial management. Economic operators who are in financial position covered are not exposed to market fluctuations, however, go on to have a business risk and hold cash to cover short-term financial instruments and actors to quickly if necessary. The companies will build a margin of safety, that is, there is a degree of coverage for outflows. The safety margin is derived from the cash flow of businesses. Minsky also considers the safety margin *"uncertainty"*[23]*, in other words, business expectations regarding market trends.*

according to Minsky: "(...) *Each financing transaction involves an exchange of money against money-today-tomorrow. Participants in the transaction have certain expectations about the uses to which those who receive the money today-allocate funds and how he will gather the funds with which to satisfy the money-tomorrow of the contract. In this agreement the use of the funds by the debtor (borrower) is known with considerable certainty; future revenues of cash that will enable the debtor to meet the parts of the contract tomorrow coin-condition the performance of the economy during a period longer or shorter. At the base of all loan agreements there is an exchange of certainty versus uncertainty. (...) Any investment in capital goods involves the surrender certain something against something assumed in the future. In particular, it is expected that a certain set of capital goods purchased by a company over time generate cash flows, the sum exceeds a certain margin of the cash paid for the capital good. These expectations, however, affect the status of certain markets and the economy in the various future periods in which revenue should be collected cash. In making today-currency transactions - currency-tomorrow, assumptions are made about a future inherently uncertain whether a financial transaction, such as the issuance or purchase of bonds, whether an investment transaction, where current resources are being used to create capital goods. These assumptions are often inherently uncertain the future may be represented by a probability distribution of, say, profits which are supposed to be similar to the probability distributions that are used to represent the results in a table of roulette. La knowledge of the process that determines the probability is, however, much less certain for the economic life than for unbiased roulette wheels. (...) Events unlikely will not cause a radical change in the estimates of the frequency distribution of the results at the roulette table and is very likely to cause a significant change in the expectation of the future that drives economic activity. (...) The true nature of uncertainty makes it very likely that the actual results deviate significantly from those projected. Such deviations will lead to gains and losses capital. (...) The prices of capital goods and financial instruments will vary as the history influence the opinions on the probability of various outcomes. "(M*insky 1980, pp.42-42).

[1]This has been analyzed by McColamm (2000) and Kregel (2000).
[2]Keynes introduces the demand for money for speculative purposes, which varies in inverse relationship to the interest rate. He gives a lot of importances also expectations. All the liquidity preference of Keynes is based on expectations.
[3]The Keynesian analys is exceeded by Dealing Krugman (1998).
[4]To be more precise zero rates.
[5]Here you enter the condition of Fischer that we will discuss in section2.
[6]Bernanke in 2002stated that: "The centralbankhasrun out of ammunition."
[7]This is what happened during the Great Depression of the thirties and, more recently, during the Japanese crisis. Rate treasury bills in six months, in fact, in 1998 amounted to 0.004% (Ito, Mishkin, 2004).
[8]Transactions through which the central bank increases the money supply, or through the purchase of government trying to stimulate aggregate demand. It must be said that many authors (Borio,

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Disyatat, 2009; Bernanke, 2000), this instrument has a limited effect, since the effects of such measures on the real economy have only whether monetary policy affects very little the government budget.
An operation of QE certainly be credited to reduce the debt of the private sector and, therefore, market participants expect a reduction of taxation and increase spending. In addition, the increase in liquidity, which is created in the money market takes away the financial crisis. This was and still is a task to which he resorted after 2007 the Bank of England cooperation purchiase facility. Today more than ever used by the European Central Bank (ECB).
[9]In this regard, see literature Bernanke, Reinhart, Sack, 2004; Borio, Disyatat, 2009; Clause, Others, 2000).
[10]Krugman,1998)
[11]Irving Fisher 1933, pp.334-342.
[12]Keynes, who was an admirer of Fisher and considered the father of "currency reform" (See Skidelsky, 1996; p. 229), ignores both the book in 1932 that the 1933 article: there are references to these two contributions in Collected Writings.
Shortly before the Great Depression, Fisher had stated that there was no danger of the stock market crash, nor the dangers of overstatements. He followed, however, the financial collapse. Therefore its credibility as an economist I resent very much and became a "bad prophet" (See. King 1994; Flake 2001).
[13]Fisher speaks of: *"(...) any degree of debt beyond measure that increases the probability of default"* (Fisher 1932, p.9).
[14]See. Tobin, 1993.
[15]According to the debt deflation school, the deflationary process produces effects onreal variables mainly by demand shocks. Contributions latest emphasize instead the importance of shocks mixed demand and aggregate supply (mainly due to technological innovation and increased productivity) as main elements of deflation (see. Rogoff, 2003).
[16]These are companies that invest the capital assets, obtaining profits from the production and sale of goods.
[17]These are companies that earn revenue from the production and sale of debts.
[18]It comes from wages and salaries.
[19]It is derived from interest payments.
[20]Due to the purchase or sale of assets or from the issue of liability.
[21]Ponzi was a financial operator of Boston around the twenties offered high returns on deposits to encourage the growth of deposits. Until the amount of debts was growing at a rate higher than the rates promised there were no problems. However, when interest rates began to rise more in deposits it was not high yields and was no longer able to keep the commitments and the system collapsed, because debt were used to pay interest.
[22]Minsky 1986, pp280-281.
[23]The term is due to Keynes.

Minsky also speaks of companies operating in financial position speculative. They finance the capital asset through cash expenses, which are more active flows. Therefore, it is an enterprise that has a high level of business risk and solvency depends on the expectation that interest rates will not grow beyond expectations, since this would imply a reduction in the firm's market value (margin security) .The banks, is a classic example of enterprise operating in speculative position, with cash expenses that have maturities of less than those of the active flows. Normally banks seek to achieve a growth rate of assets and liabilities equal to or greater than the growth rate of equity. It should be considered that in the deposits is the reserve requirement about the asset. This, according to the author, leading banks to develop their activities and, at the same time, to increase the liabilities to evade the constraints of the reserve. It will enter into a vortex speculative, which is the leading cause of financial instability and economic. In the late 'author describes companies operating in *Ponzi finance*, which have a management strongly in deficit, where in each investment project the cash flows are less active flows payable and it is hoped that in the final phase of the investment conditions market remain unchanged in order to use an active stream, able to eliminate the imbalance. It is a 'very fragile enterprise, where there is a continued erosion of the capital; its survival depends on the evolution of interest rates and market conditions.

A financial system they say it has a robust financial structure covered; a financial structure becomes brittle if inside there is an extension of speculative activities.

In the economic cycle, for the author there are two crucial points, one of expansion and a contraction, ie, a turning point higher, which is characterized by the transition from growth phase to a phase of crisis; a lower turning point, which is characterized by a first phase of decline and then expansion. When you are in a period of peace and economic stability in the short-term rates are low and this provides an incentive to act in a speculative or even you would come to take the structure of a unit in Ponzi finance. In periods of financial instability the top point is significant because you have financial crises and depression and deflation. The ability to stabilize the system depends on the intervention of a lender-of-last-resort and the economic policies, but also the ability to transform the financial system in a robust system through a drastic reduction in debt. In a fragile structure it implemented an expansionary monetary policy to fight deflation would lead to high inflation; a restrictive monetary policy would be ineffective.

4.Deflation in Asian countries: the case of Japan

For a long time it was thought that the liquidity trap was only one case in the present economic literature. In the nineties, however, this is a theoretical case being achieved in the economy of Japan and Southeast Asia.

Japan experienced the crisis 29 December 1989, when there was the collapse of the Nikkei index, with annual losses of 40%. In the country he showed up shortly thereafter an equity bubble, which led investors to buy the title, because there was the expectation of a continuing rise in prices. Reflecting an increase in prices was recorded also in the real estate market, with a growth of 500% in just 10 years (Katz, 2009). Follow the collapse. Until the nineties, therefore, the Japanese economy grew at a rapid pace, after the stock market bubble and the housing bubble in particular after the country's economy went into recession. It applied for years expansionary fiscal policy. So the government took advantage of taxation. Between 1996 and 1997, it was thought that the economy was out of the crisis and the government embarked on a fiscal policy focused on a high taxation, because there was the need to lower the deficit. The effect was devastating: the collapse of the economy in 1998 and the country enters into deflation. In 2000 there were some signs of recovery thanks to an expansionary monetary policy based on zero rate. In fact, this policy proved wrong as the country recorded a sharp deflation. The first signs of recovery occurred only in 2004, by the end of the recession was necessary to wait until 2006. With the crisis of 2007-2008, Japan went into recession five times, the last is the month of November 2015 the sharp contraction in GDP (in the last quarter of 2015, GDP has shrunk by 0.2%) (source. -BOJ- Bank of Japan). In the same period the inflation collapses (more than 2% to 0 within six months). For over twenty years the dynamics of growth of the economy are blocked. We have tried to bring the country out of deflation through monetary policy (Initial results have been positive: inflation + 3% and + 1.1% quarterly growth at the beginning of 2014) (BoJ, 2015). The BoJ response to the crisis by strengthening the Quantitative easing, however, the effectiveness of this policy has declined sharply since 2014. Today we can say that the Q, as well as the 'abenomics Japanese are in crisis.

There are three mechanisms by which the Q and transmits in real market benefits: reduction of the interest rate that banks practice to consumers and businesses; devaluation of the exchange rate; increase in inflation expectations. In Japan, things did not go the right way because in Europe as the credit system has preferred to invest in the financial market in the real market. As for loans to enterprises in Japan as in Europe there has been a growth of only 2% per year and therefore has not been able to revive the industry. Meanwhile the Nikkei index has surged 110% in two years, creating a

real stock market bubble (BoJ, 2015). In this context, the Japanese economy was supported by the positive export.

The profits of the corporations have grown, but were not reinvested in the economy; companies have preferred to increase dividends, buy back their shares or speculate (buyback). Besides the ineffectiveness of monetary policy recessione- the deflation of the Japanese economy it is due to structural problems. Japan does not grow because it has a population that is aging and older people tend to consume less and save more, the labor market can not easily find specialized resources, in addition, there are few incentives to the growth of public and private investment. All this only reinforces deflation. Of course there is a point that differs markedly from Europe to Japan: the presence of migratory flows that in fact the Japanese are almost absent and that in a globalized world is a brake on growth prospects.

(*The model krugman)*

The situation of the liquidity trap is certainly a situation that blocks economic growth and that has led many economists to develop models, among them remember to follow the model of Krugman. In the model the economy is presented as "Endwment economy", ie, as a system where the income that individuals receive is like a manna falling from heaven (Krugman 2000). This income, though it is consumed by individuals, but it also tries to sell it, to buy doses of good from other individuals. So there is a continuous exchange for currency. Individuals initially take part in a capital market where you can use the cash. In the next stage with the capital plus interests they buy goods from other parties and sells its subsidy in exchange for more cash. The model is also a central government, which charges a lump sum fee, which affects the supply of money and intervening in the capital market. In the model, there are no constraints to the budget nor the government nor to individuals. In the hypothesis that the model is introduced (from the second stage) both the production and the supply of money will remain constant at the level y. Therefore the price level remains stable. It creates a state of equilibrium where the actual rate equals the ratio of marginal utility in two stages. When the nominal rate is positive the individual no longer has money, it does not consume more and invest its wealth in bonds. Krugman, the model emphasizes the difference between the real rate and the nominal rate, between the nominal rate and the price level. The latter is assumed to be fixed, because any increase in prices would generate deflation, therefore reducing the rate (the inverse relationship between interest rates and prices). He believes that when the real interest rate is negative, the economy needs a positive rate of inflation. If the Fed continues to cut rates in order to stabilize prices would lead to a liquidity trap, monetary policy and, therefore, would be ineffective. The model predicts M and P set for the future, any increase in the money supply reduces the rate of money growth, this will result in an increase in the real rate and decrease the consumption and investment and, therefore, does not come out of the trap liquidity. If you add the possibility of price flexibility it can be generated in the community an expectation of a positive rate of inflation, without the need for monetary policy: an expansionary monetary policy would have no effect on spending. If prices are fixed, monetary policy is able to influence the production.

5. The deflation in the euro area

The ECB to support the eurozone economy from March 2015 shall resort to QE. The last operation of QE is the month of December 2015 and will continue until March 2017. Frankfurt has also decided to cut ten points the rates on deposits with the central bank moves to -0.30, while the interest rates on the main refinancing operations remaining at 0.05% (ECB, 2015). These choices of monetary policy dictated by the economic slowdown of the eurozone, with inflation at 0.1% and the deputy energy prices alo 1.1%, with no signs of reaching 2% , that is the goal of the ECB. The ECB estimates this objective can be achieved only in 2017 (ECB, 2015). The strengths of the eurozone remains the devaluation of the euro against the dollar, which should have a positive direct exports. However, there is a danger of recession and inflation reduction. Therefore, the ECB's intervention can only be read in a positive for the economy.

In 2015, the QE, along with the Greek crisis, then the Chinese, and finally the effect of the scandal industry Volkswagen had a negative impact in the stock markets. Determining a scenario of negative interest rates, which have also affected southern Europe, especially Italy and Spain. It is believed that the negative nominal rates are a first in post-war reality. In the seventies, real rates were negative, then lower the rate of inflation. It is a situation that has, undoubtedly, a positive effect on public finances, especially those of Italy, leading to a reduction of debt. It should also encourage even economic recovery through increased bank lending to private enterprises. While, the large companies would stimulate ricoere in the bond market, thanks to the low cost of debt capital (Consob, 2015). Though conditions have improved access to bank credit, however, no one can still see the eurozone economic recovery. Loans of banks are low. Despite the great liquidity, credit to businesses in Southern Europe declined. In countries like Italy and Spain, this also depends on their structural problems. Banks, on the other hand, thanks to low interest rates could increase raccoltama this did not happen, because they would not know how to use this liquidity. The scenario of negative rates, means for the eurozone "remain exposed to several risks to the downside, in an environment characterized by weak economic activity, negative interest rates, low inflation and persistent contraction in bank lending in the periphery" (Consob, Risk Outlook, novembre2015)

Conclusion

Article we examine the difficulties which have registered in the nineties and noughties Japan and, after the crisis of 2007 the Eurozone. These economic realities have found themselves in a state of liquidity trap, resulting in phases of economic instability. The analysis shows chein Japan the Great Depression was largely due to inadequate fiscal and monetary policies: the goal of the BOJ was to keep prices in check, neglecting everything else; while the political authority has pursued fiscal measures that have resulted in an increase in public debt. It is added to all exogenous shocks International, the deficit from question and, therefore, the deflation. To help the real economy to get out of deflation would be appropriate to stimulate inflation.

To get out of the liquidity trap, then, according to the arguments of some authors impeccable (Bernanke, 2000; krugman, 1998) is to create an expectation of permanent inflation in the future, this is because according to the law of Fhisher: i = r + E (P) at interest rates a zero inflation rate above zero for the future lead to a reduction in the real interest rate, which is closer to the value of the natural rate, namely, zero. That being the case, the monetary authority should set expectations of persistent inflation in the future, namely, to condition market expectations. In other words, we need an expansionary monetary policy to permanently exit the trap of liquidity and stimulate aggregate demand (Krugman, 1998). It arises, however, a problem of credibility. Keynes himself, while not explicitly considered the problem of inflation, believed that the central bank to bring the economy out of a liquidity trap, should consider the expectations of the community and spread the conviction rate stability. In fact, the essential point is an interest rate policy credible.

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