

---

# Working Paper Series

---

09/14

## DEBT DEFLATION WORRIES: A RESTATEMENT

LINO SAU

 **CENTRO DI STUDI  
SULLA STORIA E I METODI  
DELL'ECONOMIA POLITICA  
"CLAUDIO NAPOLEONI"**



UNIVERSITÀ  
DEGLI STUDI  
DI TORINO



# DEBT DEFLATION WORRIES: A RESTATEMENT

Lino Sau<sup>1</sup>

## Abstract

There has recently been a marked increase in concern of debt deflation worries particularly in the euro zone. This is the second time in the past recent years that widespread interest about this relevant economic phenomenon has come to the fore, the first being during and in the aftermath of the Asian crisis and Japan great stagnation, and the second being after the current financial turmoil stemmed from the US and propagating later in Europe. After an overview of the relevant insights by the debt-deflation school in this paper I try to update these analysis and findings to understand the causes and consequences of nowadays debt deflation process.

**Keywords:** financial fragility, banking crisis, sovereign crisis, debt deflation

**JEL classes:** E32, E42, E62

April 2014

CESMEP Working Paper 2/2014  
[www.cesmep.unito.it](http://www.cesmep.unito.it)

<sup>1</sup> Dipartimento di Economia e Statistica “Cognetti de Martiis”, Università di Torino (Campus Luigi Einaudi, Lungo Dora Siena 100/A, 10153 Torino). [lino.sau@unito.it](mailto:lino.sau@unito.it).

“Thus inflation is unjust and deflation is inexpedient. Of the two perhaps deflation is ... the worse; because it is worse, in an impoverished world, to provoke unemployment than to disappoint the rentier”

Keynes (1923, p. 75)

## Introduction

There has recently been a marked increase in concern of debt deflation particularly in the euro zone. The Financial Times on March 29<sup>th</sup> worried: the ghost of deflation is in the euro zone. Relatively few people alive today have experienced deflation, but for Europeans, that may be changing. Indeed, prices are falling and inflation is stubbornly low<sup>1</sup>.

This is the second time in the past recent years that widespread interest about this relevant economic phenomenon has come to the fore, the first being<sup>2</sup> during and in the aftermath of the Asian crisis and Japan great stagnation, and the second being after the current financial turmoil stemmed from the US and propagating later in Europe.

As well known, the phenomenon of persistent falling prices across the economy blighted the lives of millions people in the 1930s. At this regards Irving Fisher (1932,1933) tried to explain this macroeconomic malady in his well known “Debt Deflation theory of Great Depressions” that may be considered the seed for the development of the so-called debt deflation school in political economy. The debt deflation school has been further developed thanks to the contributions by Hyman Minsky (1975, 1982) and Kindleberger (1978). Minsky indeed compounded Keynes’s analysis of capitalist monetary economy with the insights of debt deflation process by Fisher and formulated the well known financial instability hypothesis (FIH) (cf. Bellofiore-Ferri, 2001; Vercelli, 2001). In more recent times, some contributions (cf. Bernanke-Gertler, 1990; Caskey-Fazzari, 1989, 1992; Wolfson, 1996, 1999; Mishkin, 1991, 1996; Wray, 2003) have dwelt on the effects that a fall in the level of prices can have on income and employment, thereby opening the way to a new and stimulating line of research that links up with seminal approaches by Fisher and Minsky.

Nevertheless these approaches have not take into account that the complexity and integration in the financial system has risen during the age of globalization due to the adoption of the neo-liberal paradigm by many emerging and developed countries (cf. Palley, 2013).

This paper overviews and update debt-deflation theory, outlining the relevance of these analysis and findings to understand the causes and consequences of nowadays risks of debt deflation. The paper structured thus: in section 1, I take a critical look back at deflation school, taking into consideration the seminal contributions and the extensions stemmed in the literature; in section 2, I consider the US financial crisis and its contagion to EU. I then go on, in section 3, to see how debt deflation theories fares in the context of the present scenario in the EU, then I draw my conclusions.

### **1. The debt deflation school: an overview**

As mentioned in the opening remarks, the theory of debt deflation stemmed with the seminal work by Irving Fisher (1933) and emerged from an attempt to account for the effects of *persistence*, *propagation* and *contagion* which had progressively led to economic-financial slump in a great many industrialised countries in the 1930s.

In contrast with the silence of many economists (who continued to place unwavering faith in the "stabilising" forces of the market, and to believe in the neutrality of the financial sphere vis-à-vis the real economy), Irving Fisher's contribution proved thoroughly innovative, and possibly also for this reason, came up against staunch resistance in the scientific community, which condemned it to relative isolation<sup>3</sup>.

In Fisher's analysis (1932, 1933) of great booms and depressions there are two key factors that are dominant, with respect to others that are subordinate, namely *over-indebtedness*<sup>4</sup> to start with and *deflation* following soon after. As Fisher outlined (1933 p. 341-42): "No exhaustive list can be given of the secondary variables affected by the two primary ones, debt and deflation; but they include especially seven, making in all at least nine variables, as follows: debts, circulating media, their velocity of circulation, price levels, net-worths, profits, trade, business confidence, interest rates.

Fisher's assumed accordingly, that: "at some point of time, a state of *over-indebtedness*

exists, this will tend to lead to liquidation, through the alarm either of debtors or creditors or both. Then we may deduce the following chain of consequences in nine links: (1) Debt liquidation leads to distress selling and to (2) Contraction of deposit currency, as bank loans are paid off, and to a slowing down of velocity of circulation. This contraction of deposits and of their velocity, precipitated by distress selling, causes (3) A fall in the level of prices, in other words, a swelling of the dollar. Assuming, as above stated, that this fall of prices is not interfered with by reflation or otherwise, there must be (4) A still greater fall in the net worth of business, precipitating bankruptcies and (5) A like fall in profits, which in a "capitalistic," that is, a private-profit society, leads the concerns which are running at a loss to make (6) A reduction in output, in trade and in employment of labor. These losses, bankruptcies, and unemployment, lead to (7) Pessimism and loss of confidence, which in turn lead to (8) Hoarding and slowing down still more the velocity of circulation. The above eight changes cause (9) Complicated disturbances in the rates of interest, in particular, a fall in the nominal, or money, rates and a rise in the real, or commodity, rates of interest" (1933, p. 345).

Over the years the theory of *debt deflation* considered above has come in for criticisms on various fronts<sup>5</sup>. Firstly, except with the current and very recent period of deflation worries, many observers in the past have outlined that since the 1930s no generalised fall in the level of prices (and in particular consumption goods prices) has been registered, which means that the deflation process is indeed rare, and even of little theoretical or practical relevance.

Nevertheless it is worth noting that the *persistence* effects considered above can also come about without a simultaneous fall in the level of consumption good prices and capital goods; all that is needed, in fact, is for the deflation process to hit the prices of real and/or financial assets – a case by no means rare or isolated in the economic history of both the 19<sup>th</sup> and the 20<sup>th</sup> century (Arestis-Karakitsos, 2003).

In this connection, as early as 1931 Keynes had demonstrated the disastrous effects of a fall in the price of assets on the real variables through deterioration in the financial structure of the banks and thus a change in the "state of credit" (due to an increase in the so-called lender's risk).

These latter aspects were the object of reconsideration and subsequent re-elaboration by

Minsky (1975; 1982), who may be considered one of the pioneer of the *debt deflation school*. According to Minsky, whenever individual economic concerns find themselves obliged to liquidate capital goods to meet payment commitments, there may be a plunge in the realisable price of such goods, with the risk of rapidly turning a situation of illiquidity into widespread insolvency. As pointed out by Wolfson (1996), a fall in the price of assets brought about through large-scale sale of them can generate effects identical to those caused by a reduction in the general level of prices and thwart attempts at repayment through an increase in the debt burden and a reduction in the “margin collateral” (margin of safety) for the creditor.

Furthermore, on proceeding from static to dynamic analysis, it immediately becomes crucial to consider the role of expectations vis-à-vis future prices. It is quite possible that the original price decline will lead to the expectation of further declines. Then purchasing decisions will be postponed, aggregate demand will fall off, and the amount of unemployment increased still more.

As seen notably in the case of Japan and Southeast Asia (cf. IMF, 1998; 2002) a fall in the price of capital goods (land, buildings, ect.) and securities (shares, bonds ect..), has been seen to produce lasting effects on the real variables perfectly analogous with those described by the *debt deflation school*.

Similar approaches have been further developed by Caskey- Fazzari (1989; 1992). They have shown how an increase in the debt burden in real terms can come about is whenever they effective rate of inflation comes below the rate expected by debtors when they were signing the finance. Unanticipated price declines or reduction in inflation can also depress expenditure due to a breakdown in the financial intermediation process.

The literature on credit rationing has shown that adverse selection problems can cause financial intermediation curtailed when riskiness of lending increases. At this regards Greenwald-Stiglitz (1988; 1990) basing the analysis on asymmetric information in both credit and equity markets have shown that when financial constraints are binding, firms, households and government balance sheets (i.e. net worths) and cash flows matter for production, investment, employment. Even if the deflationary process contemplated by the *debt deflation school* generates effects on the real variables mainly through shocks to aggregate demand, these contributions, have stressed the importance of mixed aggregate

supply and aggregate demand shocks.

Since production is risky (and this risk cannot be fully divested) lack of aggregate demand can affect willingness to produce. Demand and supply intertwined. Demand shocks in one period have consequences for supply in subsequent periods, adverse effects on firms balance sheets lead to lower production, but adverse effects on balance sheets lead also to lower credit supply. Large changes in asset prices as in the case of the breaking of the bubble influence both the ability and willingness of firms to invest and banks to lend.

Supply of credit can, in turn, be a critical constraint and conduce to a decrease in investment further reducing, through the multiplier, the income and the employment. This huge negative effect on aggregate demand influence the price level. Large prices changes causes, in turn, redistributions of wealth and losses and those who are worse off (debtors) may lead again to greater reduction in aggregate demand than the offsetting increases by those who are better off (creditors). If the possibility of bankruptcies is taken into account, then persistent deflation leads to real balance sheet effects which can adversely affect both aggregate demand and aggregate supply reducing further production, income and employment.

While retaining full internal consistency, debt deflation theory proves incomplete<sup>6</sup> in accounting for the current financial crises, and therefore needs extending (cf. Sau, 2005; Wray, 2006). In particular, it needs to be re-elaborated in such a way as to take into account that the complexity and integration in the financial system has risen during the age of globalization, due to the adoption of the neo-liberal paradigm by many emerging and developed countries, before the crisis. That is, the effects that progressive market deregulation and integration (*economic-financial globalization*) has had on *financial instability* and *fragility* at the systemic level, have increased the possibilities of financial turmoil that are prone to persistent debt-deflation phenomena. In the following sections I aim to show how, by extending the scope of debt deflation school, I can take into account new factors which may amplify the effects of persistence, contagion and propagation considered above.

## **2. The US financial fragility and crisis and its propagation to Europe**

In Keynesian approaches there is some consensus on the fact that the US financial crisis



and current global financial turmoil are a consequence of the global imbalances along with the financial deregulation process inspired by the neo-liberal paradigm.<sup>7</sup>

The transmission of imbalances to the US financial markets goes through the dollar credit balances since the latter are usual reinvested in dollar securities by surplus countries. Capital flows from emerging countries<sup>8</sup> to the US promoted “excess elasticity”<sup>9</sup> of the international monetary and financial system since financial innovation and deregulation processes fuelled the build-up of unsustainable credit and assets price booms. The booms in the collaterals, in turn, had positive influence on the credit constraints with pro-cyclical effects. Inflation in all dollar-denominated assets markets<sup>10</sup>, particularly in the housing market, fuelled indeed an endogenous process of *over-lending* and *over-borrowing* in the private sector (Sau, 2013)<sup>11</sup>. That is, macro-imbalances and financial *laissez-faire* promoted endogenously financial imbalances and the seeds of a generalized *over-indebtedness*.<sup>12</sup> The aforementioned elements led indeed to an increase in the number of ‘Ponzi financial units’<sup>13</sup> during the US sub-prime boom, among lending institutions, households and purchasers of mortgage-backed securities. All this drove the US financial system towards financial fragility.

The weight of this growing risk resulted indeed in a rise in the cost of credit in the post-boom phases. The banks and institutional money funds increased indeed interest rates and collateral requirements. This happened as soon as the payment obligations increased at a higher rate than the expected future cash flows; the financial institutions came to believe that the new financial structure had deteriorated too much. In other words, they deemed the increase in leverage excessive and then pushed to reverse the situation. To the extent that the contracts made in the past were financed with short-term loans, the evolution of the financing costs had a negative impact on the value of these contracts when the time came to refinance them. The worsening of the ‘state of credit’ led to a drop in production, a drop in employment and a decline in the value of collateral (houses and equipment). Financial institutions raised lending standards, causing households and businesses to deleverage. Moreover, on account of the information asymmetry, the interest rate rise further worsened the ‘quality’ of the patrimonial assets of the banks which, once the rate considered optimal was exceeded, decided to ration the credit: this drove investment, income and employment down even further.

At this point as the credit available to the private sectors was rationed or the conditions on which they could get access to credit became more onerous, households and firms were forced to liquidate their financial assets, or even to sell their real assets (houses and equipment) in order to meet their obligations. Alternatively, they could have attenuated the problems by offering additional collateral to their creditors. However during the *credit crunch* the sale of capital goods and real estate triggered a further collapse in the price of these assets, and so not only provoked a drop in the patrimonial value of collateral assets themselves but, through the effect on asset prices, caused a further drop in the internal net-worths of households and firms in real terms. As is apparent, such a situation is indeed in compliance with Fisher's and Minsky's debt-deflation process<sup>14</sup> discussed in the previous section.

The failure of Lehman Brothers undermined investors' confidence and was interpreted as a sign that the entire financial system was in danger; consequently many believed that it was time to call for loans to be repaid, thereby triggering a self-fulfilling systemic crisis. The latter further aggravated the negative impact on the real variables. The erosion of lenders' confidence and the heightened sense of fundamental uncertainty set off a withdrawal of capital from financial institutions, even from those that were still sound from the point of view of their balance sheets. This caused, as analyzed again by Fisher in '30s, a big drop in loans and thus, through the multiplier, in deposits, weakening the balance sheets of other banks and driving some of them into insolvency.

The huge wave of defaults on the part of homeowners, highly leveraged mortgage-backed lenders, and holders of mortgage backed securities was partly due to panic; but it was also due to recognition of the fact that precarious borrowing had woven its way into the entire system- indeed into the global financial system—and nobody really knew where the greatest dangers lay. According to this analysis panic phenomena can explain the effect of contagion and propagation which occurred in the case of US. The effect was even more disastrous because the prominent role of the inter-bank market caused a chain reaction within the area and also among the banks in the other countries and particularly in the euro-zone.

The U.S. subprime mortgage crisis in a deregulated international financial markets is then an example of how fast a problem in one part of the internationally integrated financial

system can be passed on to other parts, and affect the real global economy (cf, Palley, 2013).

The Europeans were not completely responsible for the crisis, yet they have become its chief victims. The origin of the current European crisis indeed can be directly traced back to the US crisis of 2007–2009 over depicted which spilled over into a sovereign debt crisis in several euro area countries in early 2010<sup>15</sup>.

Europe indeed has done very little to avoid contagion from the US. As outlined by Palley (2013, p. 2): “the crisis in the euro zone is link to a toxic neo-liberal economic policy cocktail”. In fact, well before the crisis stemmed, many euro countries exhibited striking similarities with US’s paradigm concerning with the financial system.

Furthermore both the former and the latter prompted a worsening in income distribution (cf. Cynamon–Fazzari, 2014) and fuelled ten years of credit and assets bubble.<sup>16</sup> These were the driving forces creating financial instability in the euro block that have to be summed up to the US contagion.

In many of these countries, government bailouts of banking systems contributed to an increase in public debt. Conventional way of correcting bank balance sheet shifted problems from banks to government, but worsening government’s balance sheet set in motion, in the euro zone, bad dynamics. Private debt became public debt, be it through banking crises or the burst of housing bubbles, leading to the sovereign crisis. The latter begin with Greece, but suddenly spread over some other countries of the euro zone like Portugal, Ireland, Italy and Spain<sup>17</sup>.

The crisis in the euro-zone is often described as a sovereign debt crisis in fact, it is really a sequence of interactions between banking problems and sovereign problems (twin crisis) that present many aspects that are prone to debt deflation process. Let’s see why.

### **3. Debt deflation worries in the euro-zone**

Between 2007 and 2010, the debt to GDP ratio of the euro area increased from 66.3% to 85.4%<sup>18</sup>; in current crisis the over-indebtedness (i.e one of the two cornerstones variables of the debt-deflation school) has indeed characterized the public sectors of many

countries. With deteriorating public finances<sup>19</sup>, sovereign risk has, in turn, increased and worsened bank's balance sheets. As soon as public debt approached sustainability limits in those countries, a high bank exposure to sovereign risk open the door to a fragile interdependence between fiscal and bank solvency and so to the possibility of a self-fulfilling crisis. Therefore, as already stated, the situation is best described as twin banking and sovereign crises that mutually feed each other, and the result of this interaction is a gradual contagion to more countries and more asset classes (Adler, 2012; Véron, 2011).

In the European monetary union (EMU), instead, the absence of a guarantee that the cash will always be available creates a situation in which a liquidity crisis arises. And because such a crisis leads to large increases in the interest rate on government debt, it can drive governments into the risk of default<sup>20</sup>.

The interdependence between sovereign credit and banking systems has been a running theme of this sequence of events. As outlined by Moro (2013, p. 3): “euro zone sovereign debt has been held in large amounts by euro zone banks, with a significant bias for the bonds of the country in which the bank is headquartered, but also significant is cross-border exposure to other euro zone countries’ sovereign debt”. Unfortunately, closer integration could mean “deflationary contagion”: policies in other countries may have major domestic effects.

An increase in sovereign risk of default (i.e in the spreads) had a direct negative effect on lending, through a deterioration of banks net-worth, that implied both the rise in lending rates and/or credit rationing to private sector firms. Banks curtailed indeed loans for self-protection and started a *credit crunch* phenomena in many countries. This process has reduced aggregate investment, income and employment and had adverse effects on aggregate demand and on the price level: the same vicious dynamic studied by the debt deflation school has been at work which matter, again today, just as much<sup>21</sup>.

The decline in prices has increased, in turn, both the real interest rate and the real net debt ratio for companies; that is, in addition to increasing the real costs of servicing debts, as deflation shrunk the economy, it also has increased the burden represented by existing debt<sup>22</sup>. This has happen particularly in Italy, Spain, France and Portugal since the crisis began, and spiked even more sharply for small firms<sup>23</sup>.

Distressed corporate sectors has also began to run down their liquid and real assets to stay in business, starting and reinforcing a debt-deflation style process and increasing the risk of a long period of stagnation in many countries of the EU. Aggregate demand and supply shocks indeed intertwined with adverse persistence effects on production, income and employment.

If it is not enough, Europe's policy regime is inflicting ultra-austerity and is aggravating the situation further. By mistakenly blaming the EU crisis on profligate states and by imposing a crash diet of fiscal cuts on many countries, they have made the problem of private debt and public even worse. The policy is self-defeating in broader economic terms. Indeed when income is declining, fiscal positions worsened as tax revenues decrease and transfer payments grew larger due to rising unemployment during the crisis.

But the central contradiction of Europe's debt crisis strategy is link to some sort of debt deflation bias. That is many countries are forced to cut wages and prices to claw back lost competitiveness against the Germany through "internal devaluations", but this frustrates the other objective of controlling the debt since deflation increase the debt burden, worsening the situation. That is: they are damned if they do, and damned if they don't. The EU authorities would do well to read Fisher's seminal paper and the contributions by Minsky and other authors of the debt deflation school on this topic. The central argument should by now be self-evident: if the price level is falling the real burden of the debt keeps rising<sup>24</sup>.

Furthermore attacking some of the structural problems (e.g. in banking activity for example) in the wrong way could exacerbate and further aggravate demand problems and to be self-defeating again. For example, attempt to "clean up" banks can lead to reduce further credit supply promoting economic downturn and making bank balance sheets even worse.

Even if the economic policies suggested to sort out from the current deflation bias is beyond the scope of this paper, one may observe that the only way to break out of the impasse is to let inflation drift up a little, with rising wages in Germany without forcing other countries into a hopeless deflationary spiral. France, Italy, Spain should gang up in the ECB's governing council and dictate terms, forcing through the reflation policy that

the region so desperately needs.

## Conclusions

This paper provides a critical reappraisal of the debt-deflation school outlining its relevance to understand current deflation worries in euro zone. I have attempted to extend this theoretical approach in an open economy, taking into account the effects produced by the process of progressive financial integration that has been underway in recent years and considering the deflation bias implicit in the policies suggested by EU institutions.

Looking back to the links between the US financial fragility and crisis and its contagion to Europe, it became apparent that the process of economic-financial globalization, characterised above all by financial market liberalisation and innovation on a vast scale, favoured massive booms and busts in financial assets, *over-indebtedness* processes both in private and in public sectors on the basis of which the subsequent phase of *debt deflation* came under way.

With the economy operating below capacity and unemployment in the block averaging above 12% prospects for serious blows to growth elsewhere in the world is a real risk. As debt-deflation school has emphasized, if deflation sets in, growth is almost impossible. People and companies hold off from spending, believing that prices will fall further, and causing demand for goods and services to fall. Slumping corporate profits eventually force companies to cut output and wages, hold off investment and lay off workers. Falling income and rising unemployment pushes aggregate demand lower, setting off a self-reinforcing downward economic spiral. Banks, meanwhile, are enfeebled as losses on loans portfolios grow.

The problem for the euro zone is that the debtors are concentrated in the slowest-growing countries and deflation prone countries, like Greece, Spain, Portugal and Italy. That is, those suffering most of the pain will be asked, through ultra-austerity policies, to bear more. If they won't be able or willing to bear more they risk the default on their debts. That would have a knock-on effects for domestic banks and other creditors, threatening further hardship.

In absence of different and adequate economic policies this situation might generate even

more disruptive effects of both *persistence* and indeed *contagion* and *propagation* and may trigger a chain reaction of bankruptcies decreasing further income and employment.

Are these sufficient troubles to be worried? Someone may argue that if economies cope with inflation, why not with deflation? Because, as Keynes outlined (cf. epigraph) of the two perhaps deflation is the worse. As I tried to show, the euro zone seem to be one shock away from the Japan syndrome, and therefore the danger of exploding debt ratios is raising. As the debt-deflation school showed us, is unforgivable for any policy institution to let it happen since, once it lodges in the system, it takes pains and time to get it out: this is because it must be strongly resisted.

### References

Adler G. (2012), "Intertwined Sovereign and Bank Solvencies in a Model of Self-Fulfilling Crisis", *IMF Working Paper*, No. 12/178.

Arestis P. (2001) "Recent Banking and Financial Crisis: Minsky versus the Financial Liberationists", in *Financial Fragility and Investment in the Capitalist Economy. The Economic Legacy of Hyman Minsky* (a cura di Bellofiore R. - Ferri P.), Cheltenham, Elgar.

Arestis P.- Karakitsos E. (2003) "Asset and Debt Deflation in The United States- How Far Can Equity Prices Fall?" Public Policy Brief N. 73, Levy Economic Institute of Bard College, New York.

Bellofiore R.- Ferri P. (2001) "Financial Fragility and Investment in the Capitalist Economy. The Economic Legacy of Hyman Minsky, (a cura di) Cheltenham Elgar.

Bernanke B.- Gertler M. (1990) "Financial Fragility and Economic Performance" *The Quarterly Journal of Economics*, pp. 87-114.

Bordo M. D. and H. James (2013), "The European Crisis in the Context of the History of Previous Financial Crisis", *NBER Working Paper No. w19112*, June ([http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2276374](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2276374)).

Candelon B. and F. C. Palm (2010), "Banking and Debt Crises in Europe: The Dangerous Liaisons?", *CESIFO Working Paper No. 3001*, March.

Caskey J. – Fazzari S. (1992) "Debt, Price Flexibility, and Aggregate Stability", *Revue Economie Politique*, vol. 102, n. 4, pp. 4-27.

Caskey J. – Fazzari S. (1989) "Debt Commitments and Aggregate Demand: A Critique of the Neoclassical Synthesis and Policy", in W. Semmler ed. *Financial Dynamics and Business Cycles*, New York: M.E. Sharpe, 1989, pp. 188-202.

- Cynamon B.Z. – Fazzari S. (2014) ‘Inequality, the Great Recession, and Slow Recovery’, working paper at :<http://ssrn.com/abstract=2205524>
- Clementi D. (2001) “Recent Developments in Securities Markets and the Implications for Financial Stability”, <http://www.bis.org/review.htm>.
- Collignon S. (2012), “Europe’s Debt Crisis, Coordination Failure, and International Effects”, *ADB Working Paper n. 370*, July.
- De Cecco M. (2012) “Global imbalances: past, present and future”, *Contributions to Political Economy*, Oxford University Press, 31, pp. 29-50.
- De Grauwe P. (2010), “Crisis in the euro zone and how to deal with it”, *CEPS Policy Brief No. 204*.
- Diaz-Alejandro C. (1985) “Good-Bye Financial Repression, Hello Financial Crash”, *Journal of Development Economics*, vol. 19 pp. 1-24.
- Economist (The) (2002) “Debt and deflation. Till debt us do part. The deadly cocktail of high borrowing and falling prices”, 10 October.
- Fisher I. (1932) “Booms and Depressions” New York, Adelphi.
- Fisher I. (1933) “The Debt-Deflation Theory of Great Depressions”, *Econometrica*, vol. 1, n. 4, pp. 337-57.
- International Monetary Fund (1998; 2002) *World Economic Outlook, Interim Assessment*, Washington
- International Monetary Fund (2005; 2007) *World Economic Outlook, Interim Assessment*, Washington
- Greenwald B. – Stiglitz J. E. (1988) “Imperfect information, finance constraints and business fluctuations”, in M. Kohl – T. Tsiang (eds) *Financial Constraints, Expectations and Macroeconomics*, Oxford University Press.
- Greenwald B. – Stiglitz J. E. (1990) “Macroeconomic models with equity and credit rationing”, in G. Hubbard (ed.) *Asymmetric information, corporate finance and investment*, University of Chicago Press.
- Keynes J.M. (1931) “The Consequences to the Banks of the Collapse of Money Values”, *The Collected Writings*, vol. IX, pp. 150-58 Cambridge University Press.
- Kindleberger C. (1978) “Manias, Panics and Crashes. A History of Financial Crises”, New York Basic Books.
- King M. (1994) “Debt Deflation: Theory and Evidence” *European Economic Review*, vol. 13, n. 3, pp. 419-445



- Lama R. - Rabanal L. (2012), "Deciding to Enter a Monetary Union: The Role of Trade and Financial Linkages", *IMF Working Paper No. 12/240*, October.
- McMahon J. (2010), "The Irish Banking Crisis: Lessons Learned, Future Challenges", 26 May (<http://www.centralbank.ie/pressarea/speeches/Documents/26%20May%202010%20%20Address%20to%20Mazars%20Banking%20Conference,%202010%20by%20Jonathan%20McMahon.pdf>).
- Minsky H. (1975) "J.M. Keynes", Columbia University Press, New York.
- Minsky H. (1982) "Debt deflation processes in today's institutional environment", *Banca Nazionale del Lavoro Quarterly Review*, pp. december.
- Minsky H. P. (1984) "Potrebbe ripetersi?", *Instabilità e finanza dopo la crisi del '29*, Einaudi, Torino.
- Minsky H.P. (1986) "Stabilizing an Unstable Economy", New Haven, Yale University Press.
- Mishkin F. (1991) "Anatomy of a Financial Crisis", NBER W.P. No. 3934
- Mishkin F. (1996) "Understanding Financial crisis: A Developing Country Perspective" NBER W.P. No. 5600.
- Moro B. (2013) "Lessons from European Economic and Financial Great Crisis: a Survey", Working Paper presented at the 2013 Italian Economic Society Meeting, Bologna, Italy
- Palley T.I. (2009) "America's exhausted paradigm: macroeconomic cause of the financial crisis and Great Recession", *New American Contract Policy Paper*, New America Foundation, Washington D.C. July
- Palley T. I. (2011) "Explaining global financial imbalances: a critique of the saving glut and reserve currency hypotheses", *IMK, Working Paper*, n.13
- Palley T. I. (2013) "Europe's crisis without end: The consequences of neo liberalism run amok", *IMK, Macroeconomic Policy Institutions, Macroeconomic Policy Institutions march*, W.P. n. 111
- Rochon L. (1999) "Credit, Money and Production" Aldershot, Edward Elgar.
- Regling K. - M. Watson M. (2010), "A Preliminary Report on the Sources of Ireland's Banking Crisis. Report commissioned by the Minister for Finance of Ireland, May (<http://www.bankinginquiry.gov.ie/Preliminary%20Report%20into%20Ireland%27s%20Banking%20Crisis%2031%20May%202010.pdf>).
- Sau L. (2003) "Banking, Information and Financial Instability in Asia" *Journal of Post Keynesian Economics*, Sharpe Inc., spring, vol. 25, n.3, pp. 493-513.
- Sau L. (2005), "La deflazione da debiti di Irving Fisher nell'era della globalizzazione",

- Rivista Italiana degli Economisti, vol. 3, pp. 443-457, Il Mulino, Bologna
- Sau L. (2013), "Instability and crisis in financial complex systems", *Review of Political Economy*, Routledge, vol 25, n. 3 pp 496-51.
- Schnabl G. (2013), "The Macroeconomic Policy Challenges of Balance Sheet Recession Lessons from Japan for the European Crisis", CESifo Working Paper Series No. 4249, May 31 ([http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2274638](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2274638)).
- Sturm M. - Sauter N. (2010), "The Impact of the Global Financial Turmoil and Recession on Mediterranean Countries' Economies", ECB Occasional Paper Series, No. 118, August.
- Tobin J. (1980) "Asset Accumulation and Economic Activity", Oxford Blackwell.
- Tobin J. (1993) "Price Flexibility and Output Stability: An old Keynesian View", *Journal of Economic Perspectives*, vol. 7 n. 1, winter pp. 45-65.
- Vercelli A. (2001) "Minsky, Keynes and the Structural Instability of a Sophisticated Monetary Economy", in Bellofiore R - Ferri P. (a cura di) *Financial Fragility and Investment in the Capitalist Economy. The Economic Legacy of Hyman Minsky*, Cheltenham, Elgar.
- Véron N. (2011), "The European Debt and Financial Crisis: Origins, Options and Implications for the US and Global Economy", draft, September 22 ([http://banking.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore\\_id=9bec6123-d58d-423d-bf17-4fdcb9b113c3](http://banking.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=9bec6123-d58d-423d-bf17-4fdcb9b113c3)).
- Wyplosz C. (2010), "The Eurozone in the Current Crisis", *ADBI Working Paper No. 207*, March.
- Wolfson, M.A. (1996) "Irving Fisher's Debt-deflation Theory: its Relevance to Current Conditions", *Cambridge Journal of Economics*, pp. 315-33.
- Wolfson M.A. (1999) "The Asian Financial Crises: A New Phenomenon?", *Levy Economic Institute, Conference Proceedings on Structure, Instability and the World Economy*, April 21-23.
- Wray R.L. (2003) "Deflation Worries", Policy Note N. 5, The Levy Economic Institute of Bard College, New York.
- Wray L. R. (2006) "Extending Minsky's Classification of Fragility to Government and the Open Economy", The Levy Economic Institute of Bard College, W.P. No. 450.

## Notes

---

<sup>1</sup> Eurostat index called "HICP inflation at constant taxes" that strips out distortions created by austerity itself shows that inflation dropped to 0.9% for the euro zone as a whole on September 2013. That is way under the European Central Bank (ECB) target which is close to 2%. Over the past months the trend has intensified. France, Italy, Spain, Portugal, Greece, Cyprus, Ireland, Slovakia, Slovenia, Estonia and Latvia have all seen price falls, and already have one foot in deflation. Much the same is happening in the EMU sphere of Bulgaria, Romania, Hungary and the Czech Republic. Poland is at zero. Denmark is close, and so is Sweden.

<sup>2</sup> Cf. The Economist, 2002.

<sup>3</sup> King (1994) points out in particular that no fewer than three reviews published respectively in the Economic Journal, the American Economic Review and *Economica* gave a very critical reception to Fisher's book, "Booms and Depressions" (1932), which can in many respects be seen as anticipating his debt deflation theory of 1933.

<sup>4</sup> The general state of *over-indebtedness* is defined as "whatever degree of indebtedness multiplies *unduly* the chances of becoming insolvent" (Fisher, 1932, p. 9) and is justified by the boom in investments fuelled by the innovations and technical progress achieved at the beginning of the last century. However, as we will seek to show later on (cf. par. 2), the process that leads to over borrowing and over lending can be accounted for as an entirely *endogenous* phenomenon thanks mainly to the contributions by Minsky (1982, 1986). According to Fisher, moreover (1933, p. 345), *over-indebtedness* a) is always *relative* to other macroeconomic magnitudes (wealth, national income, gold supply, etc) and b) is not a mere one-dimensional magnitude ... the need is, then, to take into account the distribution of sums owed over time ... thus the difficulties are greater for call loans and early maturities.

<sup>5</sup> Mainstream economists observed that a fall in the general level of prices can have reasonably limited effects since it brings about a simple *redistribution* in wealth from debtors to creditors; if the creditors' decisions prove able to bring about a rise in aggregate demand (through increasing consumption and/or investment) the process described above comes to a halt thanks to the *Pigou effect*. We can, however, answer to these criticisms with a number of remarks. At this regards Tobin (1980) demonstrated, in the celebrated chapter entitled "*Real balance effects reconsidered*", that if the marginal propensity to spend on the part of the debtors (consisting mainly of entrepreneurs and households) is, as might reasonably be expected, greater than that of the creditors, then the *Fisher effect* can prevail over the Pigou effect and the fall in prices may prove far from stabilising. To this we can add that if the debtors go bankrupt, as happens in the course of debt deflation, the creditors find themselves having to bear the heavy losses in part through credit recovery and also due to the state of widespread insolvency. This, again, works in the direction of reducing rather than boosting aggregate demand (Tobin, 1993), thereby bringing about decline in income and employment.

<sup>6</sup> In fact, the international framework now differs particularly from the situation of the 1930s when, as we know, capital movements were on a very limited scale.

<sup>7</sup> Palley, 2011 and De Cecco, 2012 have emphasized particularly the role of the financial *laissez faire*.

<sup>8</sup> As well known, Particularly US Treasury Bond (cf. International Financial Outlook, 2005; 2007). That is, even if the direction of the capital flows is reverse with respect to mid-90s (i.e South East Asian crisis), the mechanism prompting the boom, the process of *over-indebtedness* and later the risk of deflation, are similar (Sau, 2003; 2013).

<sup>9</sup> Roughly speaking elasticity is defined as the degree to which monetary and financial regimes

---

constraint the credit creation process and the availability of external funding. More generally: weak constraints imply a high elasticity.

<sup>10</sup> The boom in the U.S. securities markets and the extensive deregulation process has led to the buying everywhere of all sorts of assets, whose risks were unknown, for example the collateralized debt obligations (CDO) linked to subprime borrowing.

<sup>11</sup> If there are financial constraints, over-indebtedness may in fact be fuelled by an excessive supply of available funds. In practice, a rightward shift in the supply of funds curve causes a shift in demand in the same direction: over-borrowing by households and firms plays a passive role in the process. On the pervasive role of credit activity in monetary capitalist economy see Rochon (1999).

<sup>12</sup> If it is the case, the over quoted “excess saving view” bears reconsideration since it was the “credit creation” that played a key role in this story instead of the downward pressure on world interest rates promoted by the “saving glut”. On this point see again Palley (2009) and De Cecco (2012).

<sup>13</sup> See the well-known taxonomy by Minsky( 1982): hedge, speculative and Ponzi financial units.

<sup>14</sup> In the US the fall in the general level of prices, in the aftermath of the crisis, was partly avoided due and thank to huge quantitative easing policies by the Federal Reserve System and expansive fiscal policies by the Government.

<sup>15</sup> The mutation of the original financial crisis into a sovereign debt one in the euro area countries is investigated by Candelon and Palm (2010) and De Grauwe (2010). More in general, Sturm and Sauter (2010) analyze the impact of the crisis on Mediterranean countries, while Wyplosz (2010) compares the United States and European situations during the crisis and examines how much of the crisis has been imported by Europe from the US. On the other side, a comparison between Japanese and European crises is made by Schnabl (2013), who argues that Europe may stand at the beginning of a persistent lingering crisis as it is observed in Japan since more than two decades. For a complete and useful overview of this literature see the contribution by Moro (2013)

<sup>16</sup> This pattern, which has often been repeated in the modern era of global finance, and now once more in Europe, should give pause to seriously reconsider the costs and benefits of international financial integration (Lama and Rabanal, 2012; Moro, 2013).

<sup>17</sup> The fears of the surplus countries, led by Germany, that an easy bailout of Greece would set a negative precedent and create moral hazard problems with other deficit countries - especially the larger euro area members, Spain and Italy, both of which are considered “too big to save” - prevented a quick resolution of the Greek crisis and led to piecemeal solutions, which caused contagion to other weak euro countries. European policymakers hence faced the challenge of crafting a crisis response from scratch in the midst of crisis, first agreeing on bilateral lending to Greece and, when this appeared insufficient, on the creation of the European Financial Stability Facility (EFSF) and the European Financial Stability Mechanism (EFSM).

<sup>18</sup> As Moro (2013, p. 4) pointed out, Greece is a special case in the sense that the level of Greek debt had already been very high before the crisis, at 107.7% of GDP in 2007. Greek debt, which has been on a continuous rise since 2003, reached a level of 144.9% of GDP in 2010. Like Greece, Italy had a debt level above 100% of GDP prior to the crisis, but unlike in the case of Greece the debt to GDP ratio fell between Italy’s adoption of the euro in 1999 and 2007.

<sup>19</sup> Among euro area countries, the most dramatic increase in public debt occurred in Ireland (cf. Moro, 2013), where the country’s debt problems can be clearly ascribed to the country’s banking crisis. Ireland did not have a fiscal or debt problem until 2008. The situation changed in the

---

course of the Irish banking crisis in September 2008 when the Irish government, under pressure from European governments and institutions but also from the US government, guaranteed most liabilities of Irish-owned banks (Regling and Watson, 2010; McMahon, 2010). Like Ireland, Spain did not have a fiscal or debt problem before 2008. Spain's fortunes changed when the global financial crisis put an abrupt end to a long cycle of high growth (which started around 1996) that had been accompanied by a construction and real estate boom. When output contracted in 2008, the Spanish housing bubble burst and destabilized the banking system.

<sup>20</sup> The important ingredient in this dynamics is its self-fulfilling nature: in financial complex systems, when investors start fearing default they will sell the bonds, creating a liquidity crisis that degenerates into a solvency crisis. The fear of insolvency creates conditions that make insolvency more likely (Sau, 2013). When fear and panic takes over, sales of government bonds become massive, creating increases in the interest rates (and the spreads) on government bonds.

<sup>21</sup> Unfortunately deflation may become lethal when *total debt* exceeds 300% of GDP. That is now the case across most of western Europe. This may be the reason of the worries by Mario Draghi that recently has argued: "The ECB should do whatever it takes, within its mandate, to ensure that inflation does not fall below 2%".

<sup>22</sup> The nominal value of debts does not change as incomes diminish, so a greater share of national (or personal, or corporate) income must be devoted for debt repayment.

<sup>23</sup> ECB has responded by lowering the benchmark interest rates. Nevertheless ECB's refinancing rate is already just 0.25% leaving little room to cut further. In addition, while negative interest rates- charging banks to keep money at the ECB- are theoretically possible, there is a limit to their effectiveness. Banks are likely to start charging customers for deposits, encouraging depositors to withdraw money and hoard it.

<sup>24</sup> As Fisher (1933, p. 344) argued: "...then we have the great paradox which, I submit, is the chief secret of most if not all, great depressions: The more the debtors pay, the more they owe".