Rising systemic risk and financial crises: a Classical-Keynesian interpretation

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Abstract: The paper proposes a Classical-Keynesian interpretation of financial crises, derived from the work of Keynes and Sraffa. It inspects the joint work of these authors on the monetary issues that dominated the debates after WW1 and summarises the main features of the approach that can be derived from them. The paper finally argues that these features played a major role in the crises of 1929-1933 and 2007-2009.

1. Introduction

Financial crises have been rising in number and intensity during the last decades. Throughout the Bretton Woods period, bank insolvencies 'fail[ed] to show up on the radar' (White, 2009, p. 39; see also Wilmarth, 2020, p. 429). In the subsequent years, however, the volatility of financial markets increased. The global database of Laeven and Valencia (2018) shows that the number of crises escalated after 1970.[1] Initially, they 'had predominantly been a low and middle-income country phenomenon' (Laeven and Valencia, 2018, p. 9) and their frequency induced these countries to improve their institutions and policies. This prudent attitude reduced the number of crunches at the start of the new millennium, but in 2007-2008 the crisis set off in rich nations causing more damage and proving that these events can start everywhere.

The literature has also been proposing new work on the origins of crises since the late 1970s. It admitted that a combination of factors, regarding the behaviour of different actors, triggers them. The intricacy of these factors led to select some of them and to identify two main groups of causes: macroeconomic imbalances, which the literature often attributes to errors or abuses of the authorities; and institutional failures.[2] The

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[1] The database identifies, on the basis of pre-established criteria, 461 episodes of banking, currency and debt crises occurred from 1970 to 2017. It shows that 6.6% of them took place from 1970 to 1979; 30.2% from 1980 to 1989; 38.9% from 1990 to 1999; and 24.3% from 2000 to 2017. On this subject, see also Demirgüç-Kunt and Detragiache (1998) Honohan and Laeven (2005), Laeven and Valencia (2008, 2013), Reinhart and Rogoff (2009), Schularick and Taylor (2012), Romer and Romer (2017).

[2] The debate submitted three generations of models. The first centred on external imbalances and provided the background for the International Monetary Fund's policy in the 1980s Latin American crises (see Salant and Henderson, 1978, and Krugman, 1979). The second generation focussed on the fact that the authorities may not control speculative movements due to problems of institutional organisation, (see Obstfeld, 1994;

debate accepted that both motives play a role, but disputed their relative strength.

If one excludes the Bretton Woods era, financial crises have frequently characterised the history of the economies. The development of the first credit system in UK at the start of the XIX century was accompanied by a series of systemic crises. The concern they caused led to the formation of what can be considered the first nucleus of monetary theory in the history of economic thought. Fetter (1965, p. 1) named it "British Monetary Orthodoxy", underlining that it was developed through the XIX century until 1873, when Bagehot published *Lombard Street*. It studied how to reduce the risk of a crisis by devoting attention to the institutional organisation of the credit system and to the role of lender of last resort that the Bank of England had to play formally and without delay.

Marx was a careful reader of the British Monetary Orthodoxy. His theoretical views on how the historical evolution of the relations of power affects monetary legislation, on the working of the banking system and on the distribution of income moved from the analyses of this literature on the credit cycle, the responsibilities of the Bank of England, and the factors affecting the interest rates (see Panico, 1980; 1988a, pp. 47-101).

The analytical structure of the British Monetary Orthodoxy, which focussed on the cash flow problems of the firms, considering them the main source of the demand for bank loans, was still present in the monetary writings of Marshall, written in the XIX century but published in 1923, and of those of the Cambridge School (see Pigou, 1917; Keynes, 1923). It recognised the existence of speculation on financial assets but assumed that it played a minor role in the working of the credit system.

The huge amount of government debt issued during WW1 engendered key changes on this point. Speculation on financial assets enlarged its size after the war and the free circulation of capital between Europe and USA raised the volatility of financial markets and caused a persistent tendency of the British economy to stagnate. These problems stirred new reflections on speculation and on the concept of liquidity, which assumed a

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Kaminsky and Reinhart, 1999; Goldfajn and Valdés, 1997; Flood and Marion, 1999; Chang and Velasco, 1999; Sarno and Taylor, 2003; Buiter, 2007). It was aroused by events concerning the 1992 attack against the European Monetary System, the 1994 Mexican crisis and the Asiatic, Russian and Brazilian crises of 1997-1998. Subsequently, a third generation of models stressed the role of "news" that can modify the views of financial operators as to the degree of liquidity of some assets (see Kaminsky and Schmukler, 2002; Kaminsky, Reinhart and Végh, 2003; Kaminsky, Mati and Choueiri, 2009).

central position in the literature on the role of money in economic theory.[3] Keynes, who benefitted from an intense collaboration with Sraffa, was a leading figure in these debates.

The aim of this essay is to propose a Classical-Keynesian interpretation of financial crises derived from the work of Keynes and Sraffa. They moved from the analysis of the "degree of liquidity" of the assets, which depends on the perception that investors have of the stability of their future prices. This psychological element may be subject to wide variations generating "bubbles", based on what the literature calls "irrational exuberance", that subsequently burst (see Stiglitz, 2003, p. 79). For Keynes and Sraffa, however, the powers that legislation attributes to the authorities on the stabilisation of financial markets play a crucial role in shaping the psychological perceptions on the future prices of the assets. If legislation generates an institutional organisation of the markets that fortifies the powers of the authorities and their ability to stabilise the prices of the assets, the degree of liquidity of the latter improves and the solvability of the credit and financial systems is secured. On the contrary, flaws in the institutional organisation can destabilise the degree of liquidity of the assets and cause problems of solvency and crises. For the Classical-Keynesian approach, the role of the institutional organization of financial markets overshadows that of psychological perceptions on the degree of liquidity of the assets. This implies that the study of the crises, rather than being limited to the claim that "a bubble blew up", must focus on the formation of monetary legislation and policies, taking into account that their evolution primarily depends on the pressures of the different social and economic groups aiming at affecting income distribution.

The essay is so organised. Section 2 outlines the analytical structure of the British Monetary Orthodoxy, pointing out that it prevailed in the literature until the early 1920s. Section 3 inspects Keynes' and Sraffa's joint work on the monetary issues that dominated the debates after WW1. Section 4 summarises the main features of the approach that can be derived from the work of these authors. Sections 5 and 6 argue that these features played a major role in the crises of 1929-1933 and 2007-2009. Section 7 concludes.

[3] The negative effects of the upsurge of speculative activity on the British economy induced Lavington and Keynes to deepen the analysis of the speculative demand for money and to introduce this new element in the theory of interest and money. This analysis was a major novelty of *A Treatise on Money*.

2. From Adam Smith to Marshall and the Cambridge School

The analyses of the British Monetary Orthodoxy focussed on the UK specialised credit system, which was characterised by consistency in the term structure of the assets and liabilities of banking firms[4] and mainly operated in a gold standard regime. The analyses moved from the distinction, introduced by Adam Smith, between "circulation of income", composed of the payments between consumers and producers, and "circulation of capital", comprising the payments between producers and producers, merchants and producers, and merchants and merchants. The circulation of capital had a central role in the study of the cycle and the crises.

The XIX century literature considered that the decisions of the firms to solve their cash flow problems and those of the banks regarding the ratio between their reserves and advances were the main sources of the demand for and supply of bank loans. Both decisions depended on the institutional organisation of the payments and credit systems and on the degree of uncertainty felt by operators during the different phases of the cycle.

During the prosperous phase, banks and the other firms experienced a sense of security as to the stability of the economy. These feelings led the former to reduce their reserve ratio, thus increasing the supply of loans, and the latter to promote the circulation of bills of exchange, so reducing the demand for bank loans.

In the subsequent phase of the cycle, firms started to have difficulties to sell and tended to increase the demand for bank loans to replace the means of payments that were not coming from the sale of commodities. Banks, on the other hand, being unaware of the firms' problems, did not increase their reserve ratio, keeping constant the supply of loans.

In the third phase, banks realised that firms had liquidity or solvency problems and increased the reserve ratio for precautionary reasons. They so diminished the supply of loans while firms, needing more means of payments, increased the demand for them.

[4] In the British specialised system, commercial banks and discount houses collected deposits and "money at call" (i.e. loans of commercial banks whose repayment could be obtained at very short notice) and only gave short-term loans. The other specialised institutions, which offered medium- and long-term loans, collected funds through medium- and long-term liabilities. This system guaranteed a reduction in the risks assumed by the banking system.

Under these conditions, the market interest rate rose above the average interest rate and could reach levels causing a credit crunch.

Trying to identify the institutional organization of the credit system that could reduce the risk of a crisis, the debates within the British Monetary Orthodoxy focussed on the discretion in the issue of banknotes to be ascribed to the Bank of England. The authors of the Currency School argued that the Bank should not be given discretion, since this could cause an excessive issue of notes and a rise in the prices of commodities. The latter would amplify the prosperous and depressive phases of the cycle, enhancing the probability that a crisis would occur. The authors of the Banking School made instead a case that the Bank of England should be endowed with discretion. They questioned that an extra issue of notes automatically generates a rise in prices, claiming that it would reduce the interest rate but would not necessarily increase the demand for capital goods, which, in the debate of the time, was mainly identified with the demand for inventories. These authors added that the fall of the interest rate would cause an outflow of bullion, which induces a reduction of notes in circulation and a return to the previous level of the interest rate (see Panico, 1988a, pp. 42-44). Finally, they argued that the discretion attributed to the Bank would allow this institution to play timely and reliably the role of lender of last resort, which is crucial to avoid the occurrence of a crisis.

The XIX century literature recognised the existence of other sources of demand for bank loans, but assumed that they played a minor role in the working of the credit system. The demand for credit coming from stockjobbers and related to speculation on financial assets caused little concern. The limited weight ascribed to this kind of speculation highlights that these authors considered the financial sector as a set of firms (i.e., an industry) providing services to the rest of the economy, rather than as a set of individuals speculating in financial assets.[5]

Marx presented a detailed assessment of the British Monetary Orthodoxy in Part V of Book 3 of *Capital* (see Panico, 1988a, pp. 47-81). He adopted the analytical structure of this literature, including the limited weight ascribed to speculation on financial assets, to

[5] For further reflections on the different representations of the financial system in recent literature, see Panico and Pinto (2018, section 4).

support the positions of the Banking School against those of the Currency School on the effects of monetary issues and on the responsibilities of the Bank of England. Nonetheless, he found faults with the concepts of money and capital of both Schools and illustrated how the historical evolution of the relations of power affects monetary legislation, the working of the credit system, the interest rates and income distribution.

Marx was deeply concerned with the growing importance of the financial industry and with its ability to make pressures on the political world. He provided evidence that the content of the Peel Act of 1844 reflected the strong position of this group of capitalists in the distribution of power and argued that one of the purposes of this law was to favour the profits of the bankers (see Marx, 1972a, pp. 558-560). His theory rejected the notion of "natural" interest rate and expounded a historical and conventional determination of the average interest rate, concluding that changes in the latter have an effect on the general rate of profits and on the other distributive variables (see Panico, 1980; 1988a).

The analytical structure proposed by the XIX century literature was still present in the monetary writings of Marshall and the Cambridge School. As Keynes recognised, changes in inventories, rather than in fixed capital, still occupied a notable role when examining the reaction of the demand for capital goods to variations in the interest rates.[6] Moreover, the traditional distinction between the circulation of income and that of capital was still used, playing down the weight of the demand for money due to speculation on financial assets (see Keynes, 1923, pp. 61-70, in particular p. 63, fn. 1).[7]

Although it underrated the role of speculation on financial assets, *A Tract on Monetary Reform* shows signs that after WW1 key innovations were occurring in the working of

[6] In *A Treatise* Keynes (1930a, pp. 173-176; 1930b, pp. 116-118) observed that Hawtrey had based his analysis of the transmission mechanism on this assumption. Moreover, after noticing that Marshall's evidence before the *Gold and Silver Commission* (1887) and the *Indian Currency Committee* (1898) contained some ambiguity on this point, Keynes (1930a, pp. 171-172) suggested that Marshall's reference to speculation had to be interpreted in an extended way, i.e. by considering as a speculative activity the demand for both fixed capital and inventories. Keynes (1930a, pp. 176-178) concluded the review of the Cambridge School by saying that the clearest exposition of this point can be found in Wicksell's work, which unambiguously claims that a reduction in the interest rate increases the investment in fixed capital.

[7] In *A Treatise* Keynes (1930a, p. 31, fn. 1) recognised that in *A Tract* deposits were divided into "income deposits" and "business deposits" and that this distinction was similar to that between "circulation of income" and "circulation of capital" introduced by Adam Smith and used by the XIX century literature.

financial markets.[8] These changes then induced the profession to introduce in the analysis of the demand for money new elements, which can be found in *A Treatise on Money* and in the *General Theory*. In these books, "financial circulation" is added to the circulations of income and capital (see Keynes, 1930a, pp. 31, 217, 218) and the speculative demand for money, based on the idea that deposits could earn a higher rate of return than other financial assets, was made a central part of the study of the working of the economy.

3. Keynes' and Sraffa' joint work on monetary problems

There is a large literature showing that Keynes and Sraffa worked together on the monetary subjects that were dominant after WW1, like the evolution of financial markets, the concept of liquidity and the incorporation of money into the theoretical foundations of the economic discipline.[9] Keynes was the leading figure in this collaboration. The two had similar views on various topics and ended up by underwriting a historical and conventional theory of the interest rate highlighting the role of the institutional organization of financial markets and of monetary policy (see Panico, 2021). One can derive from their work a "Classical-Keynesian" approach, which considers that monetary legislation and policies permanently affect production and income distribution.

When they first met in Cambridge in August 1921, Keynes was so impressed by the expertise of the young Italian on current financial events as to ask him to write an article on the banking crisis that was shaking his country. The article had to be published in the

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[8] In the Preface of *A Tract* Moggridge points out that in the section "The forward market in exchanges" Keynes presented 'one of the clearest expositions ever written' (Keynes, 1923, p. i) of the working of hedging operations in the forward market for exchanges, which were developing in those years. Keynes (1923, pp. 100-101) did not attribute a relevant role to these activities in the analysis of the demand for money because the business world had only begun to adapt to them. He wrote: 'in practice merchants do not avail themselves of these facilities to the extent that might have been expected' (Keynes, 1923, p. 100). He pointed out that they were unavailable until the 1919 "unpegging" of the leading exchanges. Moreover, even after that date, banks had not learnt to offer them at reasonable rates.

[9] Skidelsky (1986) instead states that Keynes and Sraffa were intellectually distant and that their relation was "a case of non-communication". Pasinetti (1979, p. 738) had however criticized the interpretation of Sraffa's contribution as 'merely abstract exercise in pure theory', detached from reality and elaborated without having interest in the historical and political-normative aspects. During the 1980s the study of the monetary writings published by Sraffa confirmed Pasinetti's view. Then, in the 1990s, the opening of the *Sraffa Papers* (SP) made it possible to corroborate that the relation between Keynes and Sraffa was not "a case of non-communication". For bibliographical references on this literature, see Panico (2001 and 2021).

Weekly Supplement of the *Manchester Guardian Commercial*.[10] The text that Sraffa wrote was too long for the *Manchester Guardian*, but suitable for the *Economic Journal*, where it was published (Sraffa, 1922a), while a shorter piece appeared in the *Manchester Guardian* on December 7 (Sraffa, 1922b). In these essays he described the events that led to the crisis, focussing on the working of the "mixed" banking system that Italy adopted in the last decade of the XIX century. Unlike the specialised one, used in UK, the mixed system allowed the banks to collect short-term resources and make long-term loans. It was characterised by an unbalanced assets-liabilities structure of the banks' balance sheet.

Sraffa argued that the major problem of the Italian mixed system was not the unbalanced assets-liabilities structure, but the failure of financial regulation to avoid the growth of embroiled relations between banks and industries and the formation of large groups of companies, or "concentrations", able to control sections of the economy, of the media and the political world and to attain monetary legislation and policies favourable to their interests. The weak controls of regulation allowed these groups, which Sraffa considered a danger for democracy, to distort the flows of credit towards questionable ends:

> The general tendency seems to be towards the … formation of large 'groups' of companies of the most varied kinds concentrated around one or more banks, mutually related by the exchange of shares and by the appointments of Directors common to them. Within these "groups" the various interests are all equally subject to the interests of a few individuals who control the whole group. … Very little is known … about these groups. … What the public knows and feels … is the enormous financial and political power which they have and the frequent use they make of it to influence both the foreign and home policy of the government in favour of their own interests. Each group keeps several press organs which support its policy, and some of the accusations made against certain Ministries of being actuated by the interests not of a class, but of private concerns, and of favouring one financial group against another, have no doubt a basis of truth. (Sraffa 1922a, p. 196)

His analysis of the interactions among the industrial, the financial sector and the political world highlights some points that are still noteworthy for the interpretation of the crises:

- the interventions of the central bank are crucial to avoid that problems of liquidity

[10] Keynes was the editor of the Supplement that dealt with the post war financial reconstruction in Europe.

become problems of solvency;

- monetary legislation and government interventions are part of the conflicts among different economic and social groups;
- the flaws of financial regulation favour the formation of large companies;
- the presence of large financial conglomerates promotes legislation and policies assisting their interests at the expenses of those of the whole society and may lead to increases in the systemic risks and to crises.

The article in the *Manchester Guardian Commercial* caused irritation in financial and political circles, which resulted in a series of trouble with the Italian fascist regime. Following Keynes' advice, Sraffa tried to protect himself by going to England but was refused permission to enter the country.[11] This event did not prevent the two from working together. De Cecco (2005) points out that the Italian economist provided the author of *A Tract* with data on the Lira forward exchange rates (see SP, D1/18/1), adding that 'Keynes used these data in his exposition of the theory of forward rates in his famous Manchester Guardian Supplement article' (De Cecco, 2005, p. 354). Roncaglia (2009, p. 29) says that Sraffa took care of the publication of the Italian versions of Keynes' work.[12]

From 1923 to 1927, when he moved to Cambridge, Sraffa kept working on the evolution of financial markets and the formation of monetary legislation and policies. His analyses further explain how large groups of companies influence the exertion of power, arguing that the conflicts within the capitalist class and the autonomous interests of administrative and political bodies affect government actions. The latter elements clarify that his view on the role of the State differed from that dominating the Marxist circles of the time.[13]

The study of the evolution of financial markets and the formation of monetary legislation and policy is also present in an unpublished essay titled "The Revaluation of the Lira" (SP, D2/3) that Sraffa wrote for a conference held in Cambridge, soon after his arrival

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[11] For more details on these events see Pasinetti (1979, p. 737; 1985, p. 320), Roncaglia (1983, p. 140; 1984, p. 111), Panico (1988b and 2001), Naldi (1998). Keynes had subsequently to intervene to persuade the British authorities to lift the ban on Sraffa's admittance. His attempts hit the target in 1924.

[12] Roncaglia (2009, pp. 28-29) points out that, while he was working in Italy from 1923 to 1927, Sraffa's contacts with Keynes produced other results. Following the requests of Edgeworth and of the Faculty, Keynes asked the Italian economist to write a paper on Marshall's partial equilibrium theory for the *Economic Journal* (Sraffa, 1926) and to move to Cambridge to work there.

[13] For a description of Sraffa's monetary writings during this period, see Panico (1988b; 2001).

there, at the Emmanuel Society on November 3, 1927. On that occasion he provided new information on how the massive growth of speculative activity after WW1 had made it difficult to control the exchange rates, causing wide fluctuations in the Italian Lira and the French Franc. Moreover, he illustrated that the substitution of professional for amateur speculators after the collapse of the German Mark had reduced the seasonal regularities of the exchange markets and the opportunity to gain from arbitrage operations, another subject that Keynes considered of great interest and on which he cooperated with Sraffa (see de Cecco, 2005, p. 354).

Upon Sraffa's arrival at the University of Cambridge in 1927, Keynes asked him to lecture on "Continental Banking" to elucidate the working of the German mixed system, a subject that Keynes then considered relevant for the improvement of the performance of the British economy (see de Cecco, 2005). A manuscript describing the content of these *Lectures* can be found in the *Sraffa Papers* (SP, D2/5).

Sraffa argued that the German mixed banks were effective in channelling financial resources to productive sectors and submitted – as he had done in the 1922 essay on the Italian crisis – that, as far as liquidity and solvability are concerned, these banks are not riskier than the specialised ones, provided that the central bank systematically supplies them with means of payment and regulation offsets the emergence of large conglomerates and of embroiled and dangerous relations between banks and other firms.

In the *Lectures* Sraffa developed these points (see SP, D2/5/14) by focusing on the notion of liquidity in financial and commodities' markets.[14] He argued that the degree of liquidity of the assets depends on the psychological perception that investors have of the stability of their prices and identified several elements affecting this perception,[15]

[14] De Cecco (2005) claims that this part of Sraffa's *Lectures* is as an anticipation of the analysis he presented in the debate with Hayek, where he introduced the concept of "own interest rate", subsequently adopted by Keynes in Chapter 17 of the *General Theory*.

[15] Among these elements Sraffa mentioned that the characteristics of credit contracts and of the commodities used for speculative investment influence the perception of financial operators. Lenders, for instance, consider a credit given to a customer less liquid than a bond that can be sold in a secondary market. He also mentioned that 'raw materials (e.g. raw cotton) are more liquid than manufactured products (e.g. cotton cloth of a given quality) since they have a wider market, since the number of people who buy products made out of raw cotton is greater than those who buy products made out of that particular quality of cloth. (Thus barley is more liquid than beer from the point of view of bankers)' (SP, D2/5/14). Moreover, he stated that the size of the funds demanded by a credit institution and the solvability pressures leading this

underlining that the degree of liquidity depends more on the difficulty of selling the assets at the present price than on their maturity. For this reason, it is raised by the existence of a large market and the availability of a big purchaser, as a central bank can be, to buy the securities at a given price.[16] The powers that legislation attributes to the authorities on the stabilisation of financial markets and the funding of credit institutions, he concluded, is the most important element deciding the degree of liquidity of the assets and the solvability of the banking system. The reference to this element clarifies that in his analyses the role of the institutional organization of financial markets, which can be studied by observing its past evolution, overshadows that of the psychological perceptions on the degree of liquidity of the assets. This perspective is coherent with his commitment to applying an "objectivist" approach to economic theory (see Kurz and Salvadori, 2005; Panico, 2021).

In the *Lectures* Sraffa recalled that, unlike what had happened in Britain, the configuration of the German banking system was the result of a deliberate choice to attribute to the banks the role of promoter of industrial development. The German legislation endowed the *Reichsbank*, the equivalent of the Bank of England, with the power to establish closer co-operative relations with credit institutions than those existing in UK. Since the German unification, this form of institutional organisation had allowed the mixed banks to fund the industrial development without having problems of solvability that could come from their unbalanced assets-liabilities structure. For Sraffa, the *Reichsbank* had worked as a leading entity of a planned economy in which the mixed banks, under the regulation of the State, took a long-term concern in industrial firms by promoting their formation, providing the rating and certification of their balance sheets, and favouring the sale of their shares in the market. While banks funded production in strategic sectors, the *Reichsbank* assisted them with funds, which were systematically provided rather than given as an emergency provision as occurred in Britain. De Cecco (2005, pp. 355 and 358) says that until WW1 the *Reichsbank* acted as "lender of first

entity to ask for them is considered relevant by the operators when they evaluate the degrees of liquidity of the assets (see SP, D2/5/14).

[16] As document (SP, D2/5/14) clarifies, the same applies to commodity markets. Gold and some raw materials, for instance, had a high degree of liquidity on account of the way their markets were organised.

resort”, adding this function to that of lender of last resort played by the Bank of England. This operation of the *Reichsbank*, however, had to change after the war.[17]

As to research activity, Sraffa played a relevant role in the debates over the preparation of *A Treatise* and the subsequent discussions on it (see Panico, 1988b; 2001). He was a prominent member of the Circus, the group of Keynes' close colleagues debating *A Treatise* after its publication. This role is cherished by the expression ‘To the Circus Master—May Term 1931’ written by Joan Robinson on the cover of the abstract of her ‘A parable in saving and investment’ that she presented to Sraffa.[18]

This participation led the Italian economist to get more and more involved in the theoretical work on the relationship between the theory of money and that of distribution. Moreover, it led him to publish his first articles on this subject (Sraffa, 1932a,b), a critical review of Hayek's 1931 book *Prices and Production*.[19] The acquaintance with the concept of liquidity allowed Sraffa to clarify Hayek's peculiar definition of the natural interest rate and to inspire, as Keynes (1936, p. 223) acknowledged, the analysis of “own interest rates” presented in Chapter 17 of the *General Theory*.

Sraffa's participation in the preparation of the *General Theory* and in the discussions after its publication is also documented by the literature (see Panico, 1988b, pp. 23-24; 2001, pp. 297-299). He witnessed the changes that led Keynes to propose in the *General Theory* a monetary theory of production, which moves from the belief that financial events have permanent effects on production and distribution. In the applied monetary writings recalled above Sraffa had moved from the same standpoint. At the time, however, he had not scrutinised the theoretical implications of this view, nor had he envisaged the possibility to attribute to money an alternative role in the theory of distribution.[20]

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[17] De Cecco (2005, pp. 356-358) points out that after WW1 the *Reichsbank* could not operate as before, owing to the distress of the German economy, the burden imposed by the Treaty of Versailles, the hyperinflation, and the restrictions on the working of the central bank set by the Dawes Plan.

[18] The abstract can be found at the Wren Library of Trinity College in Cambridge under ‘Sraffa's books 4612’. J. Robinson's recollections on Sraffa's intense participation in the discussions of the Circus are presented in Robinson (1978, p. XII). On this point see also Roncaglia (2009, p. 29), whose interpretation is strengthened by what J. Robinson wrote on the cover of her abstract.

[19] Sinha (2016, p. ix) states that Keynes asked Sraffa to write the review.

[20] When he wrote those essays, Sraffa was not fully conscious of the implications of the neoclassical theory nor had he developed the critique later proposed in *Production of Commodities*. This is confirmed by a

Keynes was conscious that his attempts to set forth a monetary theory of production concerned the integration of money into the theoretical foundations of the discipline and represented a "scientific revolution" that had to induce the profession to interpret economic events in a new way.[21] A central point of this revolution was the presentation of a monetary theory of the interest rate. To develop it, Keynes (1936, pp. 201-203) argued that the determination of the interest rate must be considered an institutional phenomenon, rather than a psychological one; that the individual perceptions of the future value of the assets ultimately depends on what the common opinion considers a safe level of the interest rate; and that the organization of the markets and the policy of the monetary authorities are the main determinants of this safe level. Like Sraffa in the *Lectures* on Continental Banking, Keynes (1936, p. 201) admitted that the presence in the market of a big dealer, as a central bank can be, can stabilise the price of the assets and establish a "durable" or "average" interest rate, around which the market rate fluctuates.

In *A Treatise*, in line with the traditional neoclassical theory, Keynes had stated that the central bank has to place the durable or average interest rate at its natural level. In the *General Theory* he rejected this view and claimed that the policy of the monetary authorities, rather than depending on an abstract and not directly observable natural rate, is the result of their evaluations of what is most convenient for the country under the prevailing historical circumstances. The authorities take this decision by assessing several elements, like the relation between the national and the international financial systems, the state of the economy and of the balance of payments, the funding needs of the financial industry, of the other industries, and of the government sector, the level of systemic risk that the institutional organization of financial market brings about. The decisions of the authorities over the interest rates that must be stabilised have an effect on the rate of profits and on the other distributive variables.

Keynes and Sraffa shared a common view on what was necessary to 'revolutionise' the foundations of the economic discipline. They knew that it was crucial both to prove that

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document of the *Sraffa Papers* (D1/15), which criticises the positions then held by Cole and Dobb by using the neoclassical idea that the relative scarcity of capital and labour determines income distribution.

[21] See the letter to George Bernard Shaw, dated January 1, 1935 and published in Keynes (1973, pp. 492-93), and the broadcast "*Poverty in Plenty*" published in The *Listener* of November 21, 1934 and again in Keynes (1973, pp. 485-92).

the neoclassical analyses contained logical flows and to propose an alternative theory of production and distribution (see Panico, 1988a, pp. 133-137; Panico, 2021). These issues were at the centre of Sraffa's thoughts in the *Works and Correspondence of David Ricardo* and in *Production of Commodities by means of Commodities*.

4. The Classical-Keynesian approach to financial crises: an outline

The Classical-Keynesian approach, which can be derived from the work of Keynes and Sraffa, moves from the belief that monetary legislation shapes the institutional organization of financial markets, which, in turn, models the way the central bank conducts monetary policy. Following Keynes' *General Theory*, the approach proposes a monetary theory of production supporting the view that monetary legislation and policy play a major role in determining the levels of output and of distributive variables.

The Classical-Keynesian approach sheds light on financial crises. It points out that the degree of liquidity of the assets depends on the institutional organization of financial markets. It increases if legislation fortifies the ability of the authorities to stabilise their prices. Central banks can perform this task, supervising the markets and avoiding that liquidity problems become solvency problems. They must act as lenders of last resort, guaranteeing the provision of means of payment in emergency situations, and, when a mixed system prevails, they must add to this role that of lenders of first resort, which systematically provide means of payment to financial firms.

The Classical-Keynesian approach considers that government interventions are part of the conflicts among different economic and social groups. In a mixed system, the flaws of financial regulation can favour the formation of large groups of companies, able to influence the exertion of power and to represent a danger for democracy. These groups can attain legislation and policies promoting their interests but raising the systemic risk and the probability of a crisis, besides bolstering social conflicts and income inequality. The existence of legislation on financial regulation able to avoid the formation of large groups of companies is necessary to avoid financial instability and the negative effects on income distribution and the working of democracy.

Using the Classical-Keynesian approach, in the next two sections we focus on the changes in the institutional organisation of financial markets occurred at the beginning of the XX century and after the breakdown of the Bretton Woods Agreements to interpret the causes of the financial crises of 1929-1933 and 2007-2009. We argue that in both cases the pressures of the financial industry succeeded in modifying financial regulation and in transforming the US system from specialised into "universal". The latter is composed of financial firms that, like the mixed banks, collect short-term funds, make long-term investment, and thus have an unbalanced assets-liabilities structure. Universal banks, however, operate on a wider range of activities than mixed banks. Wilmarth (2020, pp. 14-21) defines them as financial conglomerates engaged in a broad range of businesses, including traditional banking (such as deposit-taking and lending), non-traditional capital markets activities (such as securities underwriting and trading), and insurance undertakings. The changes in regulation demanded by the banking industry favoured the formation of large groups of companies and the rise in their revenues. These alterations, in turn, intensified social conflicts, widened income inequality, increased systemic risk, and brought about the crises mentioned above.

5. Financial regulation, universal banks and the crisis of 1929-1933

According to Wilmarth (2020), the flaws of financial regulation are a major cause of the crisis of 1929-1933. They favoured the growth and concentration of the financial industry, its transformation from specialised into universal, and the increase of systemic risk.

The National Bank Act of 1864 and most State laws of the XIX century gave a specialised characterisation to the US financial system. They authorised national commercial banks to collect and offer short-term loans, handle foreign exchange and deal with federal, state, and local government bonds. In addition, they made the underwriting and trading in corporate securities the specific business of investment banks.

Universal banks first emerged in USA by the end of the century, when commercial banks began to deal with corporate securities, relying on the absence of an explicit prohibition in legislation and the tacit permission of regulators. Yet, following some court decisions, the Comptroller of the Currency (the chief regulator of national banks) had to change policy in 1902. This event induced commercial banks to organise securities affiliates, set up as state-chartered nonbank companies that were subject to little regulation.

The organisation of affiliates met the opposition of some public officials and led the House Committee on Banking and Currency to set up in April 1912 a subcommittee, chaired by the Democratic Representative Arsène Pujo, to "investigate the concentration of money and credit". In February 1913 the subcommittee issued a Report recommending that the financial system had to remain specialised. It proposed to prohibit investment banks from accepting deposits and commercial banks from dealing with securities (except for government bonds), organising affiliates and owning bank stocks. Congress, however, did not adopt these recommendations (see Wilmarth, 2020, pp. 63-64).

The clash between the banking industry and some public officials continued during the Democratic administration of Woodrow Wilson (1913-1921). John Skelton Williams, appointed as Assistant Secretary of the Treasury in 1913 and Comptroller of the Currency in 1914, was a strong opponent of universal banks. His actions were however restrained by the legal resistance of the banking industry and the support this sector received from Congress, particularly after the Republican victory in the midterm elections of 1918 (see Wilmarth, 2020, pp. 83-91).

The Republican administrations of Harding and Coolidge (1921-1929) pursued a policy that was pro-bank oriented. Daniel Crissinger, Henry Dawes and Joseph McIntosh, who became Comptroller of the Currency in 1921, 1923 and 1924 respectively, removed some constraints on branching that Williams had previously imposed and lobbied Congress to favour the expansion of consumer and real estate lending and that of the securities trading and underwriting of national commercial banks and their affiliates. The McFadden Act, passed by Congress in February 1927, incorporated many amendments demanded by the banking industry and lobbied by Dawes and McIntosh. At the same time, the Office of the Comptroller of the Currency reduced its expenditure on bank examinations by 40% between 1923 and 1926.

In line with Gerding (2014), Wilmarth's review of the clash between the banking industry and some public officials resolved that it caused a deterioration of regulation that favoured the growth of universal banks and the expansion of speculative activities:

> The dialectic interplay between the banking industry and the Office of the Comptroller of the Currency between 1915 and 1927 provides a striking example of “regulatory compliance rot,” as described by Erik Gerding in his “regulatory instability” hypothesis. The regulatory cycle between 1915 and 1927 included (1) John Skelton Williams’ implementation of rigorous supervisory and examination policies, (2) the industry’s vehement pushback against those policies, (3) the industry’s success in persuading Congress to pass deregulatory legislation in 1917 and 1927, and (4) the industry’s ability to obtain much more accommodating policies from Daniel Crissinger, Henry Dawes, and Joseph McIntosh. The “compliance rot” of the 1920s encouraged the rapid growth of first-generation universal banks as well as their aggressive expansion into speculative real estate and securities activities between 1921 and 1930 (Wilmarth, 2020, p. 96).

The “compliance rot” of financial regulation brought about a series of consequences. It produced highly concentrated financial markets dominated by large conglomerates operating as universal banks. These companies enjoyed commanding powers over the political world, which were reinforced by the impact of high financial returns on the dominant culture.[22] Financial conglomerates took advantage of these powers to attain legislation and policies favouring their expansion at higher rates than the rest of the economy. The activities that mainly contributed to the growth of the financial sector were consumer and real estate lending and trading in securities, whose expansion was also supported by financial innovations, like the “securisation” of loans into bonds and the formation of investment trusts, which can be considered the forerunners of today’s money market mutual funds.[23] The financial sector sold these services at home and around the world. It acquired during the 1920s a leading position in international markets becoming the “banker of the world”. During those years ‘American investors purchased almost two-thirds of the foreign bonds that were issued by Central and Eastern European nations and Latin American countries’ (Wilmarth, 2020, p. 202; see also pp. 15-16 and 152-153).

[22] Wilmarth (2020, pp. 41, 98 and 174) highlights these elements, also recalling the success of the belief that the society benefits from “laissez-fair” and from the “wisdom of bankers”.

[23] Investment trusts competed with commercial banks in the collection of short-term funds. The consequent reduction of the deposits of commercial banks induced these institutions to expand riskier financial activities (see Wilmarth, 2020, pp. 15-16, 98, 109-110 and 172-173).

The result of this expansion was a change in income distribution favouring the banking industry.[24] Moreover, the growth of consumer and real estate lending and the inflows of incomes related to international activities raised effective demand and economic growth from 1922 to 1929. The literature refers to this period as "the seven fat years" and the "roaring twenties" (see Wilmarth, 2020, pp. 97-98, 147 and 150).

The credit boom that accompanied the economic expansion raised the systemic risk. It was based on a set of bonuses that created perverse incentives.[25] The executives, officers and employees of financial firms could increase their earnings by persuading unsophisticated and inexpert customers to invest in hazardous activities. Some of them used deceptive practices to reach their objective. Together with the dominance of large conglomerates, which made it difficult for regulators to realise effective oversight, perverse incentives caused a deterioration of the quality of credit, intense speculative activities and hazardous stock market bubbles (see Wilmarth, 2020, pp. 15-16, 34, 40-42, 109-110, 167, 178-179 and 184-185), which were amplified by the reductions of the interest rates implemented by monetary policy in 1924 and 1927.[26] This situation raised the default rates, which reached record levels between 1927 and 1929.

The consequences of the "compliance rot" of financial regulation favoured the emergence of the "irrational exuberance" that generates speculative bubbles. From December 1927 to December 1928, the Dow Jones Index moved from 200 to 300, reaching 381 on the 3rd of September 1929 (see Wilmarth, 2020, p. 210). On October 24 the bubble burst and Wall Street crashed. The economy entered a long recession and universal banks experienced a severe crisis from fall 1930 to spring 1933.

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[24] To confirm this conclusion Wilmarth (2020, pp. 37-38 and fn. 22 of page 1023) refers to the analyses of Philippon and Reshef (2012) and Piketty, Saez and Zucman (2018).

[25] Describing the bonus plan of National City Bank and National City Company, Wilmarth (2020, pp. 114-115) claims that the officers of these institutions 'had nothing to gain, and everything to lose, individually, by a conservative policy. Top executives at each company knew they would receive only their salaries, without any bonuses, if their company produced net profits of less than 8% per year, because all of those earnings would go to the shareholders. In contrast, senior managers would collect one-fifth of any "superprofits" above 8% per year'.

[26] On the rise of speculative activities, see Wilmarth (2020, pp. 15-16, 34 and 167). As to the effects of the reduction of the interest rates, Wilmarth (2020, pp. 163-169) points out that Benjamin Strong, the President of the New York Federal Reserve Bank, acknowledged that it gave 'a petit coup de whiskey' to the stock market, while the literature has resolved that it 'poured fuel on the fire' of speculative investments.

6. Financial regulation, universal banks and the crisis of 2007-2009

According to Wilmarth (2020), the flaws of financial regulation are a major cause of the crisis of 2007-2009 too. Like Eichengreen (2015), he argues that the events that generated the two crises are similar.[27] In both cases the pressures of the banking industry weakened financial regulation, which favoured the transformation of the specialised system into universal and the expansion and concentration of the sector. These changes produced a series of consequences that raised the systemic risk and led to the crisis.

The events of 1929-1933 convinced the US political authorities that it was necessary to return to a specialised financial system. The new legislation imposed a discretionary approach to regulation based on restraining the size of financial firms and the scope of their activities and on strengthening the powers of the authorities over their managers (see White, 2009; Panico, Pinto, Puchet Anyul and Vázquez Suárez, 2016).

It is widely recognised that, during what White (2009) called the New Deal or Bretton Woods era, the discretionary approach achieved positive results (see Eichengreen *et al.*, 2003; White, 2009, p. 18; Goodhart, 2010, p. 3). The management of financial firms was adequately controlled and bank crises died out. The few banks that failed were very small and most of them had been involved in frauds that regulators unearthed.[28]

The process that led to the abandon of the discretionary regime progressed during the 1970s and 1980s, a phase that White (2009) called "transition period". It was characterised by an on-going erosion of the powers of the authorities over the managers of financial firm and by a political climate favourable to this industry. The change was accomplished during the 1990s, i.e. during the period that White (2009) calls "contemporary", which lasts up to the emergence of the crisis in 2007.

[27] Eichengreen (2015) claims that both crises occurred against the backdrop of an explosive growth of credit fuelling property and asset-markets booms, sharp increases of the prices of stocks and real estate, dubious banking practises, and a fragile and unstable global financial system.

[28] Some interpretations of these events have underplayed the role of the discretionary approach. White (2009, pp. 25-26 and 31) attributes the positive results of that period to the high and stable growth of the economies. Goodhart (2010) adds that the dearth of bank failures of those years was due to the conservative attitude of the managers of financial firms towards innovation. This made the financial system 'a safe, but dull, place' (Goodhart, 2010, p. 4) that did not need the intervention of regulators to maintain systemic stability. He should have however recognised that the 'dull place' was so efficient as to allow the economies to grow at higher rates than during the subsequent years, to enjoy minimal unemployment and low income inequality, and to improve education, life expectancy, health conditions and security.

The process was initially stimulated by the need to give financial firms the possibility to adjust to the new situation generated by the abandon of the Bretton Woods Agreements and the oil shocks of the 1970s. The conversion from fixed to flexible exchange rates transferred risks from the public to the private sector, while the slowdown of the economy and the surge of inflation raised the nominal interest rates. This increased the costs of financial services, affected the preferences of the operators, put at risk the solvency of financial firms, and forced them to innovate to expand their turnover. The subsequent decision of the authorities to start the "monetarist experiment" of 1979-1982 further accelerated financial innovation. By raising interest rates at very high levels, it weakened the balance sheets of financial firms, increased the number of crises, as in the case of Saving and Loans (S&Ls), and made it necessary to bail them out.

At the beginning of the transition period the pressures of the banking industry persuaded the authorities to relax some administrative controls in order to allow banks to increase their size.[29] The pressures however did not persuade Congress to pass legislation overtly changing the main features of the discretionary approach. Congress approved some laws that focussed on the structural aspects of regulation, like the abolition of some barriers to competition, at a later stage. The Depository Institutions Deregulation and Monetary Control of 1980 eliminated the ceilings on interest rates and the Garn-St Germain Act of 1982 allowed the S&Ls, at the time under distress, to deal with activities previously prohibited to them, like consumer loans, commercial real estate and business loans.

Other elements of the process modified the prudential aspects of regulation. In 1978 Congress approved the Federal Financial Institutions and Regulatory Control Act, which introduced a Uniform Interagency Bank Rating System, named CAMEL, to harmonise the criteria of the different regulatory agencies. Moreover, in 1981 and 1983, in the face of the difficulties of the banks' balance sheets caused by the monetarist experiment and the Latin American debt crisis, the Federal Reserve and the Office of the Comptroller of

[29] In the first part of the 1970s the authorities weakened the requirements for obtaining bank charters and made rejections infrequent. The Federal Reserve relaxed its anti-branching rules and several States reached agreements on reciprocal privileges to their banks, weakening the barriers to geographical competition. Moreover, during the Reagan administration, the Department of Justice eased opposition to horizontal mergers. These administrative measures allowed the banks to increase their size.

the Currency made compulsory the compliance of capital ratios, previously used by supervisors as first indicators of risk exposure.[30]

Another important alteration of the prudential aspects of regulation came from the reduction of resources assigned to the supervisory authorities.[31] The cuts of the Regan administration, which were particularly heavy, changed supervision in quantity and quality. Surprise inspections, which are the most effective, lost relevance. The authorities had to limit the scope of their reviews and to enhance a regular dialog with banks' managers and board members. The overall result of these changes was a reduction of the ability of the authorities to effectively control a sector that was starting to grow in size and complexity (see White, 2009, pp. 31 and 36).

In the 1990s legislation accomplished the process of reforms. It formalised the conversion to a rules-based approach to regulation, the abolition of the limits on competition, the emergence of universal banking and the upsurge of OTC derivatives operations.

The Federal Deposit Insurance Corporation Improvement Act of 1991 abolished what remained of discretionary regulation and formalised the change to a rules-based approach. It established that banks had to be classified according to five categories of risk exposure, defined by the financial ratios, indicated by the CAMEL system and calculated by dividing the value of risk-weighted assets to that of capital. The thresholds of risk exposure were automatically calculated on the basis of the banks' balance sheets and when a bank crossed them, mandatory actions, which increased monitoring and restrictions, inevitably applied. This removal of discretionary powers from the authorities however enhanced the ability of firms to evade controls.

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[30] The resistance of the financial industry, which complained about the advantages that this measure gave to foreign banks, led to the Basel I agreements of 1988, which phased in until 1993 a set of compulsory ratios (see Bank of International Settlements, 1999; Ashcraft, 2001, pp. 8-11).

[31] As White (2009, p. 36) notices, 'although bank supervisory agencies were independently funded, they came under increased pressure from several administrations, most notably Nixon and Reagan administrations that sought reductions in regulation. In 1969 the OCC was placed under an employment ceiling, leaving the Comptroller to complain that he had an inadequate staff to conduct examinations. Pressure became more intense under the Reagan administration that sought to reduce the size and scope of the federal government in the early 1980s, just as bank failures were beginning to rise. The OCC saw a decline in its expenditures and its workforce shrank. From 3,282 employees, of whom 2,282 were examiners in 1979, the OCC shrank to 2,702 employees and 1,835 examiners by 1982. Staff at the OCC turnover reached 15 per cent in 1984. The decline in supervision was particularly acute in Texas where the median exam interval in 1986 was 700 days for banks that subsequently failed or needed assistance'.

> By ruling out discretion, banks were able to develop new complex financial instruments that are not subject to statutory standards and allow them to assume more risk with existing capital. The most notorious of these were of course, the mortgage-backed securities that were held off-balance sheet in Structured Investment Vehicles (SIVs) that skirted the rules-based control system that was sufficiently rigid that it was difficult to quickly adjust to innovations. Banks were able to increase their risk and hence their return, while regulators appeared to be faithfully executing their mandates (White, 2009, p. 36).

Other important laws approved during those years were

- the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994, which definitely eliminated all barriers to nation-wide branching;
- the Gramm-Leach-Bliley Financial Services Modernization Act of 1999, which abolished what remained of the Glass-Steagall Act and formally permitted universal banking within the structure of a financial holding company;
- the Commodities Futures Modernisation Act of 2000, which exempted OTC derivatives market from Government oversight.

Another important measure was the 1996 Federal Reserve's decision to allow banks to use Credit Default Swaps (CDS) to reduce capital reserves (see Levine, 2010, p. 5).

The introduction in the 1990s of the rules-based approach of regulation was presented as a consequence of the problems caused by the discretionary forbearance of the authorities during the banks' crises of the 1980s (see White, 2009, p. 34; de Haan *et al.*, 2009, p. 306, Box 10.2). There are elements however suggesting that other factors, like the lobbying activities of financial industry, played a role in the formation of this legislation. Some evidence provided by the US Senate (see www.opencongress.org) testify to the pressures put by lobbying activities on the formation of monetary legislation. This information, orderly re-organised by the Centre for Responsive Policy (see www.opensecrets.org), shows that the financial industry has the highest quota of the total expenditure in "campaign contributions" (on average, 19.4% during the period 1990-2010) and in "lobbying activities" (on average, 14.7% during the period 1998-2009) of all the sectors of the economy.[32]

[32] For more information on the lobbying activities of the banking sector, see Wilmarth (2020, pp. 635-639).

The change in regulation and the transformation of the specialised system into universal brought about many consequences. First of all, the US financial system underwent an extraordinary process of expansion. There is vast literature showing that this process 'is apparent whether one measures the financial sector by its share of GDP, by the quantity of financial assets, by employment, or by average wages' (Greenwood & Scharfstein, 2013, p. 3).[33]

Secondly, large conglomerates, operating as universal banks and enjoying a hegemonic position over the culture and the political world, increasingly dominated the markets.[34] They made it more difficult for the authorities to control the systemic risk.[35] According to some authors, the process of concentration even impaired the governance of financial regulation.[36] By using evidence from official documents and archives, these authors have argued that the Federal Reserve was aware that the new approach to regulation was producing distortion of the flows of credit towards questionable ends since 2003. Nevertheless, the central bank provided Congress with false information to preclude the rectification of the norms favouring the financial sector.

Like in the "roaring twenties", the activities that mainly contributed to the growth of the financial sector were consumer and real estate lending and trading in securities. Their expansion was supported by financial innovations that contributed to the formation of new products and institutions intertwined among them and selling services all around. As in the 1920s, the US system strengthened its dominant position in international markets (see Wilmarth, 2020, pp. 911-913).

The credit boom was enhanced by a set of bonuses that created perverse incentives. To increase their earning some executives, officers and employees of financial firms used deceptive practices to persuade unsophisticated and inexpert customers to invest in risky activities (Stiglitz, 2003, pp. 333-337). As a consequence, the quality of credit

[33] See Lane and Milesi-Ferretti (2006), Crotty (2007), Palma (2009), Eatwell and Milgate (2011, pp. 207-209), Panico *et al.* (2012, p. 1462), Greenwood and Scharfstein, (2013), Lapavitsas (2013), Palley (2013), Philippon and Reshef (2013), Antill, Hou and Sarkar (2014), Epstein (2015), Epstein and Montecino (2015), Philippon (2015), Wilmarth (2020, pp. 555-556 and 561-562), Hudson (2021).
[34] See Stiglitz (2003, pp. 92-93 and 212) and Wilmarth (2020, pp. 568-581).
[35] See White (2009) and Panico, Pinto, Puchet Anyul and Vázquez Suárez (2016).
[36] See Levine (2010); Barth, Li, Lu, Phumiwasana and Yago (2009); Caprio (2009); Barth, Caprio and Levine (2011).

deteriorated and systemic risk rose. Monetary policy was also affected, with the authorities becoming more concerned with financial stability than with inflation and adding the role of lenders of first resort to that of lenders of last resort (see de Cecco, 1999; Capraro, Panico and Torres, 2021).

The result of this huge expansion of the banking industry was a change in income distribution favouring this sector and increasing inequality. Moreover, the expansion of consumer and real estate lending and the inflows of incomes related to international activities provided some stimuli to effective demand and growth and gave the impression that the economy was benefitting from the progression of the financial system.[37] The number of distresses, however, progressively increased during the same period, confirming that the high profits of the banking industry were obtained by disregarding the rise in systemic risk.

For some years the interventions of the authorities managed to avoid a big crisis. Yet, this blew up on the 9th of August 2007, when four financial firms of the euro area – including BNP Paribas, one of the seventeen largest conglomerates that dominated the world's financial markets – suspended redemptions of their hedge funds owing to the drop of the value of some investments in derivative contracts and the difficulty to evaluate them (see Wilmarth, 2020, p. 730). This event was followed by a heavier setback on September 2008, when the authorities failed to bail Lehman Brothers out of its losses.

7. Conclusions

Keynes and Sraffa intensively collaborated on the study of the monetary problems that were dominant after WW1. By moving from the analysis of the concept of liquidity they developed a historical and conventional theory of the interest rate, highlighting the role of the institutional organization of financial markets and of monetary policy. Their monetary

[37] Stiglitz (2003) uses the expression "Roaring Nineties" that recalls that of "Roaring Twenties". He points out some positive results of those years in terms of growth and employment (see Stiglitz, 2003, pp. 66 and 72). Nonetheless, he recalls that the average rate of growth of the 1990s was half those of the 1950s and 1960s (see Stiglitz, 2003, p. 151) and that the achievements of the 1990s were rapidly lost during the depression of 2000-2001 (see Stiglitz, 2003, p. 73). By adding to these elements the rise in the systemic risk, the low quality of some jobs created in the 1990s, and the increasing income inequality, the assessment of the process of growth of the 1990s can be hardly be considered positive.

theory of production and distribution represents a scientific revolution regarding the integration of money in the theoretical foundations of the discipline. This change of paradigma had to induce the profession to interpret economic events in a new way.

From their work we can derive a Classical-Keynesian interpetation of financial crises, which points out that the degree of liquidity of the assets ultimately depends on the legislation shaping the institutional organization of financial markets and the powers of the monetary authorities. This implies that the study of the evolution of monetary legislation can clarify whether the fluctuations of the psychological perceptions of financial operators regarding the future prices of the assets lead to the "irrational exuberance" that generates financial bubbles and the subsequent crisis. This analysis is in line with the objectivist approach to economic theorising.

The Classical-Keynesian approach considers that the formation of monetary legislation is part of the struggles among different economic and social groups over the distribution of income. It submits that these struggles may lead to norms of financial regulation that are flawed and can consequently favour the formation of large conglomerates, which can further attain legislation and policies progressively promoting their interests. This process can bolster social conflicts and income inequality. Moreover, it can raise systemic risks and enhance the probability of a crisis. The events that led to the crises of 1929-1933 and 2007-2009 confirm the expediency of this approach.

The Classical-Keynesian interpretation thus considers the crises as the result of a process of expansion and concentration of the financial industry, which generates changes in income distribution in favour of this sector. Modifying the legislation in order to reverse this process is consequently essential to reduce the probability of future crises.

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