

**Jacques Rueff's criticism of John Maynard Keynes's theory.
Economic analysis, epistemological framework, and political dimension.**

Marie Daou¹

Abstract:

This article invites us to discover the opposite view between Jacques Rueff and John Maynard Keynes on the issue of unemployment, from a particular entrance point, the Rueff's review (1947; 1975) of *The General Theory of Employment, Interest and Money* (1936). His approach is multidimensional both theoretical, empirical, and epistemological. Rueff discussed not only the main two theoretical hypotheses at the heart of Keynes' theory: the rigidity of prices and the exogeneity of monetary supply, but also Keynes' remedies to fight against unemployment. However, Rueff's critics are deeper. Indeed, whereas Keynes supported the need to build a non-Euclidean economy, because the neoclassical theory was becoming a failure for him (1936:16); Rueff considered that the economist should put his theory within a "Euclidean" framework and reject non-Euclidean theories, which were not for him a good help or support to build economic policies.

Keywords: Jacques Rueff, John Maynard Keynes, unemployment, price mechanism, supply and demand of money, non-Euclidean and Euclidean theories, deficit public, totalitarian regime.

¹ Marie.daou@umontpellier.fr, MRE (Montpellier Recherche en Economie), University of Montpellier (France).

1. Introduction

Jacques Rueff (1896-1978) was a twentieth-century French economist. As a reformer, he had a central role in French economic and monetary policy during the interwar period and after the Second World War (Chivvis 2010).² Rueff was a pragmatic economist aware of the ground reality in his political actions and governmental decisions. It was precisely his experience in the field that fed his theory. This experience was very eclectic and made Rueff to wonder about the problems of monetary, financial and employment balance and even a broader and more general topic, this one of social order which was closely linked to economic field to Rueff.

First of all, Rueff drew up financial recovery plans for Greece, Bulgaria, and Portugal as an advisor to the League of Nations during the interwar period. Then, Rueff had a significant role in economic and monetary French policy as a reformer during the interwar period. Rueff was Deputy Director of the *Mouvement Général des fonds*³ from 1934 to 1936. He had to face commercial, budgetary, and financial imbalances. He owed his appointment to views that he advocated on budgetary and financial balances. His mission to the Treasury ended in September 1938. He was appointed immediately after as a Deputy Governor of the Bank of France. When he joined the Bank of France at the beginning of 1940, his mission was to contain inflation.⁴ His own experiences had an impact on his intellectual project: “Thus ended, for me, an experience of “public finances”, constantly difficult, often disappointing, but to which I am indebted for the formation of a doctrine” (Rueff 1977, p. 163).

World War II represented a major shift in Rueff’s intellectual work. The rise of dictatorships on the European continent with the development of Nazism, as well as the arrival of the war, showed him even more the need of financial balance and of containing inflation. After World War II, financial matters always remained in the heart of Rueff’s concerns. Thus, he was chairman of the economic and financial delegation, and economic advisor to the commander-in-chief for Germany (1944-45). Rueff was also named in 1945 delegate of France to the Interallied Commission for Reparations in Moscow and the president of the Conference on Reparations in Paris. Between 1946 and 1952, Rueff was the president of the Interallied Agency for Reparations. After, Rueff returned to more national

² Between 1926 and 1928 he participated in the stabilization of the franc in the Poincaré’s government (Rueff 1959). He oversaw the Treasury from 1934 to 1936 as a deputy director; then, in 1936, he became its general manager. After the Second World War, Rueff was designated by De Gaulle in 1958 to establish with the Minister of Finance, Antoine Pinay, a recovery plan of French public finances (Chéliny 2001; Steta 2017).

³ Corresponding to the Treasury.

⁴ Although he had to resign a few months later after the signature of the armistice agreement with Germany in June 1940. Indeed, under the Vichy regime, a law excluding Jews from any post in the public service was promulgated.

responsibilities. Since from 1958 Rueff was designated by Charles De Gaulle, the French President, to establish with the Minister of Finance, Antoine Pinay a recovery plan of the French public finances (Chéliny 2001; Steta 2017).

However, outside of these roles in governing and governmental institutions before and after World War II, Rueff was also known in the academic world, as a theorist who participated in the economic debates of the 20th century (Bourricaud & Salin 1998) whether on the gold standard, inflation or unemployment. The work of Rueff is often described as being in direct opposition to that of Keynes (Autier 2008). Rueff denounced the statism and financial imbalances that Keynes' theory implies for him. According to Rueff, policies suggested by Keynes created inflation, which in the long-term could have been the cause of totalitarianism in an extreme case. Fortunately, the predictions of Rueff are not realized. Totalitarian regime responsible for World War II has emerged much earlier and was not caused by Keynesian policies. Also, even if the Keynes policies after World War II could lead to inflation, they did not lead to totalitarian regime. However, although Rueff's criticism on Keynes' theory of 1936 is questionable, one cannot deny (and facts prove it) that Rueff was not totally wrong when he argued that economic imbalances—and more especially monetary and financial—could lead to social disorder.

The best-known controversy between Keynes and Rueff is that on German reparations during the interwar period (Keynes 1929; Keynes & Ohlin 1929; Ohlin & Rueff 1929).⁵ However, it was not the only subject of opposition between the two authors on this period; another topic made debate, unemployment. Contrary to previously, the interest and the originality in this debate lies on the specific framework in which Rueff's review which is both theoretical, empirical and especially epistemological.

In his book, *Des sciences physiques aux sciences morales* [From physical sciences to moral sciences] (1922),⁶ Rueff gave a scientific—almost “physical” (Minart 2016)—vision of moral sciences and especially economics. Non-conformist in his methodology, Rueff meant to unify the physical and moral sciences using only one methodology taken from the principles of the French conventionalists of the 19th and 20th centuries, such as the mathematicians

⁵ Bertil Ohlin also took part in this controversy.

⁶ This book describes Rueff's methodology, which is derived from the physical sciences principles and applied to social sciences (Daou 2019a; 2022a).

Henri Poincaré and Pierre Duhem (Daou 2022a).⁷ By this method, Rueff wanted to reconcile theories and experience to strengthen the rational⁸ and empirical character of economics:

... it is not between theoretical views and practical solutions that it is necessary to distinguish, but between the true theories, which accurately account for sensitive appearances [...] and the false or uncertain doctrines, because they are invalidated by the experiences or specified in terms too vague to be usefully subjected to their check. (Rueff, 1927, 25)

This complex balance between rationality⁹ and experience gives rise to the distinction between the Euclidean and the non-Euclidean—in reference on the geometry of Poincaré that Rueff (1922) transposed to moral sciences (Frobert 2010; Daou, 2019a, 2022a).

It is by applying these methodological principles that Rueff constructed his theory of unemployment (Rueff 1925a, 1931, 1947). The secondary literature has already studied the pioneering results of Rueff in terms of unemployment terminology (Prat 2013; 2015).¹⁰ Always on this topic, the unemployment theory of Rueff was also studied on the prism of his scientific methodology (Lutz 2015; Daou 2022b). As shown by the works, Rueff (1925a) started his analysis by a reality observed statistically since 1921 in England, a high level of unemployment.¹¹ He explained its causes and built its theory. Thus, on the base of his methodological principles developed in 1922,¹² he showed a link between the unemployment rate and the real wage rate. This link was also confirmed in his 1931 article with data from 1925 to 1929. The results obtained validated Rueff's Law,¹³ brought to light six years earlier.

The unemployment topic is broached again by Rueff in the 1940s. However, he did not deal at this time with the relationship between the unemployment rate level and the real

⁷ Rueff claimed explicitly (but much later) his heritage of French conventionalists (Rueff 1977: 26-28).

⁸ Rueff did not use the term rational as it is generally used in economics. Indeed, Rueff was not really interested by its economical meaning (in reference to the rational behaviour (optimisation process) (Granger 2000; Mongin 2002: 304) or *homo oeconomicus*). He had a more philosophical and epistemological view of this term. According to him, 'rational' refers to a rigorous intellectual process, supposing recourse to formal logic to establish laws and theories (Granger 2000; Volf & Henry 2018).

⁹ In reference to a logically coherent theory.

¹⁰ As George Prat (2013; 2016) pointed out, Rueff's 1925 article constitutes a key to understanding post-World War II underemployment. For him, Rueff has established the modern terminology of unemployment, comprising three categories. The first is "permanent" unemployment, resulting from a wage level higher than labour productivity. The second category refers to "temporary" unemployment from cyclical factors. The third category is the "minimal" unemployment (of frictional form) which is natural to the functioning of economy. Prat (2016) showed that Allais's terminology of unemployment (1943), more famous, was based on the three types of unemployment mentioned by Rueff in 1925 and 1931 (henceforth qualified respectively as "chronic", "cyclical" and "technological").

¹¹ What Rueff called permanent unemployment (Rueff [1931] 1979, p. 253).

¹² See Daou (2019a; 2022).

¹³ For more information on Rueff's Law, see Prat (2013).

wage rate level but wanted to highlight “The fallacies of Keynes’s *General Theory*” (Rueff 1947). Nevertheless, this Rueff’s work must not be seen as a break from his previous articles on unemployment. On the contrary, in each of them, his goal is twofold: on the one hand, to provide an unemployment explanation; on the other hand, to discuss previous explanations of unemployment. More precisely, Rueff focused on two main explanations. The first one linked to deflation was incorrect for Rueff. According to him, it was not so much deflation that was to blame (in particular its negative consequences on the profit margins of companies and therefore on investment) but rather the lack of a wages decrease, caused for Rueff by the “*dole*” (unemployment insurance) ([Rueff [1931] 1979: 259-260). The second explanation discussed by Rueff was that relating to the lack of outlets, suggested by the Keynesians (and Keynes in 1936). For Rueff, this cause implied normally only a temporary unemployment, just the time of the productive and industrial tool adjustments thanks to the price mechanism. In the facts, the unemployment in England seemed to last as if the adjustments did not take place. Rueff considered even it as a permanent unemployment. Consequently, how to explain the persistence of unemployment.

As pointed by Autier (2008), the different conception of prices between Rueff and Keynes was a point of disagreement between the two authors during their controversy over German transfers at the end of the 1920s.¹⁴ More generally, Rueff adhered to a paradigm of macroeconomics diametrically opposed to Keynes’ one. Rueff was convinced that price were flexible, representing then the solution of unemployment problem. Indeed, according to Rueff, prices became rigid (blocking adjustment mechanisms) only due to the artificial interventions of the State; whereas, for Keynes, prices were naturally a “pasty matter” (Keynes 1929: 6).

At this period, Rueff’s article on his criticism of Keynes’s theory provoked comments. The most famous was one of Tobin in the *Quarterly Journal of Economics* (1948). He endeavoured to show “that whatever errors Keynesian theory and whatever the dangers of

¹⁴ Transfers resulted from the Peace Treaty signed at Versailles in 1919. By this treaty, Germany was sentenced to financial sanctions for the First World War. Keynes (as a representative of the British Treasury) took part in the beginning negotiation but resigned in May 1919. These negotiations inspired Keynes in the writing of a book, *The Economic Consequences of the peace*, published at the end of 1919 and which constituted a lampoon against the Allies’ view. Keynes strongly criticized their position and condemned the amount of financial compensations that Germany had to pay. For him, it would have destroyed its industry and starved its people. Beyond the political and social question, the issue of transfers was analysed by Rueff and Keynes from the perspective of the balance of payments. Transfers payments would have created a deficit in the capital balance which had to be compensated by the trade balance. It was on this point there was a problem for Keynes. According to him, the trade balance was less flexible than the capital balance. Rueff disagreed with Keynes and believed that the deficit of the capital balance could be compensated, especially if there were no disruption in the market adjustment mechanisms (*i.e* the possibility of price changes, exchange rate movements and a free movements of goods). To prove this point, Rueff gave the example of France in 1919 which illustrated the possibility to return to balance from the trade balance (Rueff 1928; 1929).

Keynesian politics, Mr. Rueff did not discover them” (*Ibid.* 763). Tobin specified that : “Mr. Rueff finds the root of evil in the money issued to finance government deficits. Ultimately, he believes the public will flood the market with this new liquidity”, but Rueff seemed to forget that “we can expect that the public is able make the difference between creation of legitimate dollars”¹⁵ and “creation of illegitimate dollars”¹⁶ (Tobin 1948: 770). And finally, Tobin concluded: “Why does M. Rueff impose the cruel dilemma—inflation or Hitlerism—for an economy which is recovering from a depression thanks to public investments?” (*Ibid.* 770), However, Tobin’s comment remained only on an economic scale. His criticism related exclusively to the economic and monetary mechanisms mobilized by Rueff in his critique of the general theory and especially on the following argument: “When ‘illegitimate’ dollars are no longer desired, they lead to higher prices; while ‘legitimate’ dollars can never be undesired, because when they are, they are demonetized” (Rueff 1948: 781). Obviously, economic and monetary aspects (and especially about the balanced fiscal budgets and stability of prices—which were an absolute priority to Rueff) are essential, but Rueff’s paradigm, competing to that of Keynes, is more complex that Tobin lets believe.

The following article aims to study the opposition between Rueff and Keynes of 1936. Alain Béraud (2022) has already furnished some rich elements on it in his article which deals with the reception of *The General Theory* among French engineering economists. He concentrates mainly (if not exclusively) on the mechanisms of monetary regulation and the variable of the interest rate, then central to analysis. Obviously, it will be also a question of coming back to these adjustment mechanisms and to the importance of monetary variables in the opposition between Rueff and Keynes in our analysis. However, this article also invites us to discover an aspect that has been little studied in the literature, the antagonistic epistemological visions between Rueff and Keynes, then at the base of their macroeconomic paradigm and vision of economy very different. In that sense, this article continues from Béraud’s work (2022).

To understand this disagreement, the starting point will be the Rueff’s article of 1947: “The fallacies of Keynes’s *General Theory*”. In *The General Theory*, Keynes did not directly criticize Rueff, he rather attacked classical and neo-classical economists, at least those who considered that prices are flexible and who accepted Jean-Baptiste Say’s law. Consequently, the controversy between Rueff and Keynes was not really a debate and there was no response

¹⁵ Tobin referred directly to the dollar, which was the international currency for international trade (with the gold exchange standard system).

¹⁶ Assimilated by Rueff respectively to false and true rights, see Rueff (1945).

from Keynes to Rueff (chronologically Keynes was already dead). However, this article represents an essential key to understand the roots of their opposition, both on the economic aspects and mainly monetary, but also more deeply when it comes to addressing their epistemological vision.

Two aspects in the heart of Rueff's review will be specified: Keynes's argument of the insufficient demand and the assumptions on which Keynesian theory was based (2). Then, the possibility of non-general nature of Keynes's theory will be discussed (3). To finish, the questioning of the Keynesian remedies by Rueff will hold attention, not only Rueff showed their economic inefficiency against unemployment (4), but also the political danger for societies (5).

2. Rueff's reading and criticism of Keynes's theory

In his 1947 article, Rueff wanted to show that the assumptions of Keynesian theory were not representative of reality¹⁷ and that consequently Keynes' theory is not so general as he claimed. For his demonstration, Rueff took up at the Keynes's theory and searched to identify its limits.¹⁸

The starting point of Rueff's criticism is the idea specified by Keynes in his *General Theory* that the "psychology of the community is such that when aggregate real income is increased aggregate consumption is increased, but not by so much as income" (Keynes 1936: 27). From this quotation, Rueff concluded that for Keynes the weakness of the propensity to consume produces the insufficiency of effective demand which is responsible for unemployment. It can last or even get worse if aggregate demand does not straighten out. Consequently, to maintain the level of employment "an amount of current investment sufficient to absorb the excess of total output" (*Ibid.*) was needed. Keynes specified that:

... given the propensity to consume and the rate of new investment, there will be only one level of employment consistent with equilibrium [...]. But there is no reason in general for expecting it to be equal to full employment. [...] the economic system may find itself in stable equilibrium with [...] a level below full employment. (*Ibid.* 29-30)

¹⁷ Ultimately, Rueff's stake was to show the non-Euclidean nature of Keynes's theory. This point will be specified later.

¹⁸ The faithfulness of Rueff's presentation to Keynes's text will be not discussed in this article.

To Rueff, Keynes reasoning had two implications. The first one questioned the classic theory which postulates that there is not equilibrium as long as unemployment lasts. The second implication was that the Keynes' analysis included implicit assumptions on the rigidities of economic system: either at the level of wages (2.1), or at the level of the money supply (2.2). According to Rueff, the first one had to be fought and the second one had to be absolutely rejected, in favour of automatic adjustment mechanisms and free functioning of markets (2.3).

2.1 Institutional rigidity of prices and wages

To Rueff, the main problem with Keynes's theory laid in the downward wage and prices rigidity. Firstly, Rueff focused his criticism on the tacit nature of this assumption. He considered that price and wage blockage were not "expressly indicated as fundamental conditions for equilibrium in the underemployment" (Rueff [1947] 1979: 279- 280) in *The General Theory*. However, for him "it would have been essential that this had been said" (*Ibid.* 280). Note that even if Rueff's criticism seems to be a little excessive, because the purists of Keynesian thought have themselves recognized that Keynes reasoned at a given wage rate in large majority of his *General Theory*, Rueff focused on a solution not envisaged in Keynes' analysis: "because among the possible remedies, alongside the interventions suggested by Lord Keynes, it would have been necessary to take account the elimination of the causes of economic rigidity" (*Ibid.* 280). Rueff considered that these rigidities were the result of artificial intervention and more precisely a governmental or state intervention. But more importantly, according to Rueff the price and wage rigidity had a destabilizing power on the economy and produced imbalances and dysfunctions on the labour market. That is why, he emphasized the need to remove those rigidities. To Rueff, it needed to let the market mechanisms do their job (and so to remove rigidities on wages); otherwise, economies would be weakened, the adjustment would be impossible, and a "permanent" unemployment would be emerged.

To demonstrate his thesis, Rueff ([1975] 1979b) started from a simplified example with two sectors (wheat and construction). In this economy, the initial situation is characterized by a surplus of wheat. However, prices and wages in this sector are rigid. As Rueff specified, "surplus of produced wheat does not provoke a fall in the price of wheat suitable for causing an increase of demand and the absorption of unsold quantities", in the same way "the existence of unsold quantities do not provoke in the corporation affected by wheat poor sales

the decrease of wages suitable for inspiring the unemployed to search for a job in other sectors” (Rueff [1975] 1979b: 172). The wheat sector rigidities have therefore a double effect: the persistence of the wheat market imbalance and an increase of unemployment due to the lack of wages flexibility. The available and unused labour of the wheat sector are not transferred to the construction sector. So, there is no effect on the wages of the construction sector workers or the houses price (with the decrease of labour cost). In addition, the fall in the incomes of the wheat sector unemployed and the decline of their purchasing power, do not stimulate the demand for houses and so the employment in the construction sector. As a result, this situation “keep[s] workers in sectors where they cannot find employment” and thus organizes a “truly permanent unemployment” (*Ibid.*). Obviously, this situation described by Rueff is valid only if wages in the construction sector are lower than the wheat sector.¹⁹

Rueff gave an example of downward wages rigidity, this one of England during the early 1920s which:

...was neither natural nor fortuitous. It resulted from a very particular institutional state, in which wage [...] was so close to unemployment compensation (the “dole”) that the workers concerned [...] declined the job [...], considering the low level of the income extra that it would bring them compared to the compensation that they would have received as unemployed. (*Ibid.*)

In Rueff’s analysis, not only the unemployment insurance encourages workers not looking for a job, but also, it provokes a wage downward rigidity. In other words, the unemployment insurance imposes a minimum wage level below which employers cannot go down if they want to find a workforce ready to work. For Rueff, “the ‘dole’ works as a real barrier, setting a floor for any possible pay decrease” (*Ibid.*). According to him, it was by abolishing the unemployment insurance that the job barrier would have been removed, since the level of wages could fall and absorb all the unemployed workers.

2.2 Exogenous money supply

After wages rigidity, Rueff was interested in the exogenous nature of money supply in *The General Theory*. Whereas Rueff could conceive the previous hypothesis—even if it represents to him an exceptional situation due to a state intervention—, the hypothesis of an exogenous

¹⁹ Rueff did not specify that the immobility of production factors could also be explained by technical reasons. Workers in the wheat sector do not have the skills and knowledges to work in the construction sector.

money supply was fundamentally wrong to Rueff and constituted a fundamental error of *The General Theory*.

According to Rueff, Keynes supported the idea that it is up to the money demand to adjust to the supply because it inherently had an exogenous nature: “for Keynes, the money quantity that the banking system creates, is a given [...] freely fixed by the monetary authorities, and on which the market demand is without action” (Rueff [1947] 1979a: 273).²⁰ In that sense, Keynes underlined in *The General Theory* that “the liberty, which every individual possesses, to change, whenever he chooses, the amount of money he holds, with the necessity for the total amount of money, which individual balances add up to, to be exactly equal to the amount of cash which the banking system has created” (Keynes 1936: 84). According to Rueff, the Keynes’ view is central and has strong implications. Because “either the money quantity in circulation is a data—and Keynes’s theory may be true—or the money quantity of money is fixed by the amount of cash that users want to own and Keynes’s explanation of equilibrium permanent in underemployment collapses”. (Rueff [1947] 1979a: 289).

To Rueff, only the second case was representative of reality. Rueff considered that Keynes in *The General Theory* and more generally people were wrong to consider the money supply as exogenous: “the money quantity in circulation, contrary to what people believe, is not fixed by the market authorities” (*Ibid.*). On the contrary, Rueff has always defended the endogenous nature of money supply in his works on money:

Is there a more backward and simplistic conception? Among the men who have thought about monetary matters, are there many who today believe that a Central Bank fixes the money quantity in circulation? Near or far, all those who have participated with open eyes in the management of a Central Bank know well that the open market operations can modify the counterpart of money in circulation. (*Ibid.* 289).

It was also the case even before his review of Keynes’s theory (Rueff 1929), and after in *The Social Order [L’Ordre social]* (1945). Furthermore, to justify his view, Rueff referred to his own experience:

As a director of the *Mouvement General des Fonds*, I have known deficit periods when money circulation increased, others when it decreased, without the monetary authorities wants to induce

²⁰ Obviously, Rueff made a reference here to the Keynes’ position in *The General Theory*. Indeed, Keynes not always defended the thesis of exogenous money supply in the integrality of his intellectual work (see Keynes 1930).

these movements. [...] I spent my time, as a deputy governor of the Bank of France, to be the witness of the Central Bank's vain efforts to resist the increase in issue. (Rueff [1947] 1979a: 289).

More generally, whether it is the rigidity hypothesis or the one on the money supply, according to Rueff, Keynes' vision in *The General Theory* was so far from reality that eventually "universe [...] to which Keynes refers is an imaginable model but very specific and far from the economic universe in which we live" (Rueff [1975] 1979b: 171).

2.3 The liquidity demand and adjustment

About the money, Rueff highlighted another limit to Keynes's analysis. Rueff considered that Keynes missed the mark on regulatory mechanisms allowing a decrease of unemployment. According to Rueff, these adjustment mechanisms were associated to the liquidity demand.

The liquidity demand was seen by Keynes as a leak in the economic circuit. It is considered as "inactive" what has a direct impact on the level of employment:

But when the financial provision exceeds the actual expenditure on current upkeep, the practical results of this in its effect on employment are not always appreciated. For the amount of this excess neither directly gives rise to current investment nor is available to pay for consumption. (Keynes 1936: 99)

This view was criticized by Rueff for whom "asking for money is not, contrary to what Lord Keynes believes, not asking for anything" (Rueff [1947] 1979a: 285). Indeed, he added "the liquidity demand has only as effect—like any demand whatever its nature—to reveal forces tending to impose on the productive system a specialization able to satisfy it" (*Ibid.*). Consequently, "the preference for liquidity offers, like any other demand, an outlet for the labour forces" and "cannot be, at least as long as prices and factors of production are not fully immobilized, a cause of under-employment in the community" (*Ibid.*). To demonstrate this point, Rueff referred to two monetary regimes. The first one was a simplified regime where the currency was entirely metallic. The second one was a more representative regime of reality where the currency was convertible by monetization of metal (gold standard) or by discount of exchange bill.

In the first case (only metallic system), Rueff emphasized that the request for additional liquidity reduced the available money for other community members. Consequently, the level of available money for the community would have been below than what it wanted (on the condition of community liquidity demand remained the same). In that case, to re-establish the balance between the desired quantity and real quantity, there was no other choice than “to offer without asking” (*Ibid.* 278), in other words offer work without asking goods. It resulted a drop in aggregate demand, causing a general decrease in prices (at constant supply of goods). However, a price remained stable among all in a metallic currency regime: the one of gold. The price of gold was “automatically maintained at the level of legal parity by the purchases of the Central Bank” (*Ibid.*). If the country was a gold producer, a transfer of labour from the sectors where goods were depreciating to those which were appreciated—in other words the gold production—would take place. If the country had no deposits, Rueff considered that “the form of the regulator phenomenon” would have been modified, but the lack of deposits “does not eliminate its existence, he keeps all the consequences” (*Ibid.* 280). Thus, the workforce moved towards exportable production and the settlement of international payments allowed obtaining the gold that the economy needed to satisfy the money demand for liquidity. This gold (from national production or international trade) was finally monetized by the Central Bank to equalize the quantity of money in circulation with the one desired. Rueff concluded that it:

... is impossible to admit, with Lord Keynes, that in this case, insufficient demand for consumption or investment goods is an obstacle to the increase in employment. [...] It is even more false that it generated an equilibrium of underemployment, since the forces caused spontaneously by any increase in the supply of labour tend to adapt the economic structure to the use of the newly employed workers. (*Ibid.* 278-279)

The other monetary system mentioned by Rueff included the gold standard and the gold exchange standard. The currency was obtained by metal monetization or by discounting of exchange bills. With this monetary system, Rueff’s conclusions were the same, even if the adjustment mechanisms were a little different. Three cases were described by Rueff. Each one depended on the nature of consequences caused by the extra money demand. The first case happens when the excess liquidity demand leads to a decrease in demand for goods.²¹ This

²¹ This case is also representative of the metallic system, even if Rueff did not quote it in the previous explanations. For recall, he considered only one adjustment mechanism which could be produced by two

results in an excess supply of goods and a decrease of prices.²² The prices fall (which allows a drop in demand for liquidity) contributes to restore the balance between the desired money quantity and the quantity held by people. The second case appears when the excess of liquidity demand generates (all other things being equal) an increase in the financial securities supply. This increase would produce a rise in the interest rate,²³ until what it is the same as the Central Bank discount rate. At this level, Central Bank is forced to monetize the bills offered and not requested. Rueff said that everything “happens as if the rights²⁴ which contained this wealth, instead of being emptied on the market, were emptied outside of the market into the assets of the Central Bank, which dresses them with a monetary uniform and making them reappear in the form of extra liquidity” (*Ibid.* 283). This then allows the quantity of money to increase and restore the balance between money supply and money demand. Finally, the last possibility mentioned by Rueff is the combination of the two previous systems. The excess liquidity demand provides an excess supply of financial securities (or capitals demand) and supply of goods (after the fall in goods demand). Consequently, prices decrease and interest rate increases allowing the fall in the liquidity demand and the monetization of receivables. Thus, the adjustment between the real liquidity and what people want is realized.

Rueff was aware that adjustment could take time and could lead to unemployment in the short term. However, unemployment would be only temporary, just during the time of adjustments. With regard to the monetary system, according to Rueff:

... the non-use of totally income does not create a lack of outlets. Wealth of the same value as those not asked is spontaneously diverted from the market to the Central Bank. So, it is used in the production of liquidity [...]. Thus [...] the non-consumption of people which has extra income will not result in underemployment. (Rueff [1947] 1979a: 283)

options, either *via* the increase in gold production, or *via* the increase in the goods and services production exported and then exchanged for gold, finally monetized.

²² Like Pigou effect (“real balance effect”).

²³ Rueff did not specify the impact of a change in the interest rate on investment.

²⁴ Rights refers here to receivables. Rueff’s interpretation of ownership rights is original. They constitute the heart of *The social Order* (1945) and take several forms in Rueff’s thought: securities, money, or goods. Rueff analysed ownership right as a “container of value, of well-determined volume, which can be filled to the extent of its volume and at the discretion of its owner, by all wealth offered on the market, or more exactly by the value that represents the ownership” (Rueff [1945] 1981: 96). Rueff proceeded to a reconceptualization of the exchange classical theory. Since he did not reason in terms of goods or wealth but in terms of ownership rights (Daou 2020a, Daou 2020b). Rueff saw the exchange as a change in the content of right. For him, exchange was constituted by two steps. The first one consisted of an emptying of rights containing non-monetary wealth (that someone wanted to sell) to fill it with money. The second one was to empty his right filled of money again on the market in order to fill it with the wealth initially desired (*Ibid.*). Notice that the principle is the same for the discount operation of Central Bank. Thus, agent empties his right (the receivable) with Central Bank, in order to fill it with the desired wealth (the money), obtained by the discount of the exchange bill (in other words by the monetization of receivables).

To sum up, unemployment would not be the result of insufficient effective demand for Rueff (contrary to Keynes's thesis).

Consequently, the case described by Keynes is only a temporary and transitory situation for Rueff: "Keynes considers this situation as an equilibrium in underemployment, I consider it as a temporary state, that the regulation forces tend to modify" (*Ibid.* 290). Rueff added it was "an economic state in the process of adaptation" which "cannot be considered, whatever it is, a state of equilibrium" (*Ibid.* 279). He specified also:

If we admit the existence of the monetary regulation mechanism [...] underemployment cannot be a permanent state of equilibrium, since the regulation mechanism tends precisely to bring about transfers of production factors [...], even when by preference for liquidity the demand [...] is only on a part of consumer or investment goods. (*Ibid.* 289)

3. The non-Euclidean nature of Keynesian theory

In fact, the opposition between Rueff and Keynes in the economic field has very deep roots and even external to the economic field since it lies in a different epistemological view. Where Rueff (1922) rejected non-Euclidean theories in the non-scientific field, on the contrary Keynes (1936: 16) insisted on the need to build a non-Euclidean economy, so much the neoclassical theory became a failure. To understand Rueff's view and criticism, it needs to refer to his epistemological works (Rueff 1922; 1925; 1931).

This distinction between the Euclidean and Non-Euclidean in Rueff's works appear for the first time in his essay about the methodology in the moral sciences (Rueff 1922). Rueff was inspired by the Poincaré's thought who considered that non-Euclidean geometries (unlike Euclidean ones) did not respect the Euclid's fifth postulate.²⁵ Rueff has also another heritage, that of Pierre Duhem, another conventionalist of this period, who considered that "concordance with experience is [...] the only criterion of truth" (Duhem 1906: 28). Thus, by applying the Duhem's principle to geometries, Rueff considered the Euclidean theories as theories which explain the observed facts and therefore allow to find deductively what our senses perceive. Put differently, Euclidean theories transform into logical relations what is observed empirically (Rueff 1977: 27). Conversely, non-Euclidean theories constitute

²⁵ The latter states that: "If a straight line falling on two straight lines, makes the interior angles of the same side smaller than two right [angles], these two straight lines, extended to infinity, will meet on the side where the angles are smaller only two right [angles]" (Playfair 1795).

perfectly logical buildings—since the postulates and axioms on which they are based present no contradiction—but the conclusions drawn from them are invalidated by the facts (*Ibid.*).

The determination of the nature for a theory is crucial for Rueff, because for him only Euclidean theories²⁶ could be a support for political action. Thus, “If we want to base policies on an economic theory, we must first ensure that theory is ‘Euclidean’, that is valid and effective, under the conditions in which we apply the plan” (Rueff 1969: 33). He also added: “if they have not acquired through facts the right [Euclidean] theory which enables to understand them”, “the politician and the practitioner will remain powerless” (Rueff 1927: 24). About *The General Theory*, Rueff specified also that if “it is true, it will have saved the world. If it is false, it could lead him to disaster, dooming it to ineffective remedies, which could immensely aggravate the evil” (*Ibid.*). Nevertheless, Rueff’s view about Keynes’ theory is clear, *The General Theory* is non-Euclidean. Nonetheless, about the non-Euclidean theories, Rueff seems to have forgotten an aspect from Poincaré’s analysis which said that “[a] geometry cannot be truer than another; it can only be more convenient” (Poincaré 1902: 71), as it is the case of Euclidean geometry (*Ibid.*).

In the same vein, Rueff considers the Keynes’ theory as very rarely validated by experience, and consequently as representative of an exceptional scenario:

Lord Keynes considered, among all the possible causes of underemployment, [...] only one very specific: that of unemployment due to the incapacity of the economic organism to provide the liquidity [...] which was temporarily requested. He gave to this underemployment cause an importance of which it is largely devoid. (Rueff [1947] 1979a: 292-293).

As a result, “the only error that [Keynes] made” was “to call ‘general theory of interest and money’ a theory specific linked to a very particular institutional state” (Rueff [1975] 1979b: 173). Furthermore, Keynes could not “consider as a ‘general theory’ a theory founded on such particular hypotheses” (Rueff [1947] 1979a: 280). Rueff underlined that a “theory which neglects the influences tending to provoke these adaptations cannot be a ‘general theory’ and, even less, a true theory” (*Ibid.* 279) (in the Euclidean meaning). Consequently, the non-Euclidean nature of Keynesian theory was all the more problematical to Rueff who observed at this time that a lot of politics came from Keynes theory and they constituted the key support for economic policies: “Keynesian philosophy is undoubtedly [...] the base of a world

²⁶ For recall, Rueff considers Euclidean theories as rational theories and empirically validated by experience (Rueff 1922).

politics” (*Ibid.* 273). Indeed, the stake were well on this point for Rueff, since “based on a false theory, the remedies that will be put into practice work will have profoundly different repercussions from those they had to promote” (*Ibid.*302).

Although in opposition to Keynes of 1936 on the economic field, it is really the non-Euclidean nature of Keynesian theory that Rueff attacked. However, this warning concerning non-Euclidean theories was born in Rueff early and was older than his criticism of Keynes’s *General Theory* as illustrated by his will to build an Euclidean unemployment theory²⁷ from 1925 (just after to have stated his methodological principles in 1922). This shows that the opposition between Rueff and Keynes are deeper than a simple disagreement on the economic mechanisms.

On the contrary, Keynes argued the necessity to deconstruct classical Euclidean theory faced with the non-Euclidean world in which economies evolved, and to establish a new theory by nature non-Euclidean., Keynes also broached the epistemological field (although succinctly) in his 1936 book. Indeed, Keynes referred to Euclid²⁸ and specified that:

The classical theorists resemble Euclidean geometers in a non-Euclidean world who, discovering that in experience straight lines apparently parallel often meet, rebuke the lines for not keeping straight—as the only remedy for the unfortunate collisions which are occurring. Yet, in truth, there is no remedy except to throw over the axiom of parallels and to work out a non-Euclidean geometry. (Keynes 1936: 16)

Keynes considered the Say’s law as the “Euclidean postulate” of which economics should break free to understand the situation during the 1930s and the inefficiency of the (neo) classical solution. Put differently, to Keynes, it was needed to give up the “postulate of Euclid” (the respect for the axiom of parallels) in other word full employment²⁹ (by economic analogy) and to build a “non-Euclidean economy”. More precisely, he considered that non-Euclidean geometries were invented because the facts were inexplicable within the framework of Euclidean postulate. It was the same in Economics for Keynes. The neoclassical economics representation (Rueff agreed with it) was questioned by the 1929 crisis and the 1930s depression. Involuntary unemployment had become an economic reality and the world was no

²⁷ For more information on Rueff’s unemployment theory from the Euclidean geometries’ perspective see Lutz (2015) and Daou (2019a).

²⁸ Probably (but without cannot prove it) Keynes’s reference to the Euclid’s postulate was not a simple coincidence. Rueff and Keynes had a controversy on German transfers (see supra note 3 and 15). So, Keynes knew probably very well Rueff’s work. And especially, this Keynes’s reference in *General Theory* was probably an indirectly reply to Rueff.

²⁹ Keynes considered that “... the classical theory is only applicable to the case of full employment” (*Ibid.*)

longer the one described by the neoclassicals for Keynes. Unemployment was neither “voluntary”³⁰ nor only the result of “frictions”. That is why, Keynes called to abandon the Euclidean neoclassical paradigm to describe economy. On the contrary, he was in favour of a new paradigm, based on a new theory which would be non-Euclidean.

Eventually, Keynes and Rueff had fundamentally opposite view on this issue. This opposition is all the more interesting in that Rueff’s analysis is not without limits. Indeed, for a long time, Euclidean geometries were applied to a concrete event, which confirmed their validity, it was not the case for non-Euclidean geometries. Nevertheless, during the 19th century, Nikolai Ivanovich Lobachevsky gave birth to the non-Euclidean geometry. Poor and little known, Lobachevsky failed to make his ideas known. But it was not without counting on Bernhard Riemann who developed this new geometry and demonstrated that non-Euclidean geometries could represent curved surfaces. However, the analysis of Riemann at this period was an abstract view which looked more like mathematical curiosity than reality.³¹ No one followed him, physicists had remained with the conceptions of Newton and the philosophical principles of Kant. Consequently, for a long time, unrelated to reality, many had found no interest in non-Euclidean geometry until the day when someone found to apply it to a concrete event. Therefore, the frame of reference highlighted by Riemann became crucial and has constituted one of the fundamental principles of Einstein’s theory of relativity.

However, was Rueff aware of all this in 1922 when the demonstration of the theory of relativity only dates from 1915? Indeed, he came from the *Ecole Polytechnique*, a prestigious engineering school, which was above all a school of application. Furthermore, at this period, Rueff quoted Lobachevsky geometry in his final dissertation in 1922 and he made many references to chemistry and physics. However, as he confirmed it in 1969, he had not yet taken cognizance of the theory of relativity at this period: “the theory of relativity had not yet entered teaching” and he added: “general principles which constitute its substance [in reference to his book of 1922], could only be built on the materials at my disposal at the end of a rudimentary and non-specialized scientific teaching” (Rueff 1969; 18-19).

Nevertheless, Rueff’s ignorance on this aspect can no longer really be any more in 1947 when he operates with his criticism of Keynes’ *General Theory*. Rueff’s stubbornness in this voice is all the more problematic that fashionable young economists, like Paul Samuelson in his handbook *Economics* (1948) (which is became a central reference in Economics),

³⁰ In other word, resulting from “refusal of a labour unit to accept remuneration equivalent to the product attributable to its marginal productivity” (*Ibid.* 25).

³¹ It was not the first time that mathematicians faced scepticism. This was the case with chaos theory, atomic theory, or even relativity theory, which had the same experience before having the success that we know.

supported the opposite view to that of Rueff and sided with the Keynesian thesis of involuntary unemployment:

In these non-Euclidean worlds, two parallel lines may meet— just as on the spherical surface of the earth two “parallel” lines perpendicular to the equator meet at the pole. What is true of one kind of world may be false of another. Similarly, for the modern world of unemployment, the conclusion of the old classical or Euclidean economics may be not at all applicable. (Samuelson 1948: 9,10)

4. The challenging of Keynes’s remedies

Rueff’s criticism did not only bear on the assumptions of model presented by Keynes in *The General Theory*, and on its non-Euclidean nature. It deals also with the remedies proposed by Keynes in the fight against unemployment.

According to Keynes quoted by Rueff, “underemployment is due to an insufficient propensity to consume” (Rueff [1949] 1979a: 294). And to resolve it, Rueff specified two solutions suggested by Keynes: to proceed either to an “increase of the propensity to consume” or to “a systematic increase in investment to fill the insufficiency of consumer demand” (*Ibid.*). Rueff obviously rejected both options and he condemned the first even more than the second considering that consumer spending “depends essentially on individual decisions for which the authorities are powerless” (Rueff [1975] 1979b: 175). Whichever option was chosen, the result was the same for Rueff: State has replaced household consumption considered insufficient:

... the almost universal basic remedy of Keynesian theory is the investment expenditure, assumed by the state to face up to the supposed insufficiency of private demand. [...] To avoid unemployment, it is necessary and sufficient for the state to assume the investment expenses that private initiative does not grant. (*Ibid.* 295)

However, the problem went beyond public intervention for Rueff. Keynes’ upstream view of income and its treatment was wrong for Rueff who considered that “Lord Keynes recommends a distribution of income which will unfortunately discourage the spirit of saving” (Rueff [1947] 1979a: 294). Consequently, the State necessarily had to take over and investments which were no longer made so much by private sector could be stimulated only by State intervention by “an appropriate fiscal policy and interest rate policy” (Rueff [1947]

1979a: 294). Obviously, this solution was not effective to Rueff and had bad repercussions on the economy over the long-term.

Nevertheless, it was on this point that Rueff's criticism reached its limit. As Rueff stated, Keynes' theory was based on the wage downward rigidity. If this hypothesis is accepted, the policy to stimulate investment is effective, contrary to what Rueff maintained. State intervention is substituted to the adjustments of prices mechanism (which cannot operate in a rigid economy). On this base, Keynes's reasoning was not incoherent, even if the issue of how to abolish rigidity came up.

Moreover, Rueff focused especially on State intervention suggested by Keynes. He considered that the "epigones of the general theory saw in it only the great secret, a kind of philosopher's stone, which was supposed to enable governments [...] to avoid unemployment without to decrease wages and in all circumstances whatever the rigidity of economic structures" (Rueff [1975] 1979b: 174). Keynesian remedies were for Rueff not only useless but more especially could become harmful:

... depending on whether the investment expenditures will be carried out in balance or in deficit, in other words depending on whether they will be financed by taxes [*i.*] and loans or by delivery of Treasury bills made eligible for the discount [*ii.*] because of the market alone would not have ensured the absorption. (Rueff [1947] 1979a: 296)

i.) In the first case with a budgetary balance, it is taxes which finance invest expenditure. Therefore, "if the additional demand resulting from the investment program focus on the wealth that underemployed factors of production are willing to produce, the investment program will increase employment. (*Ibid.*). However, Rueff considered that this situation was unlikely: "there is no way that it will in fact be so" (*Ibid.*). To justify his reasoning, Rueff described two situations, which in fact turn out for the first to be very specific and for the second disconnected from characteristics of the economy described by Keynes.

In the first situation, the starting point is an excess demand for liquidity according to Keynes's hypothesis. For this situation, Rueff concluded that "the levies will reduce the demands on other segments of the market for a significant fraction of their amount" (*Ibid.*) but without to satisfy the liquidity demand. Thus, State requested goods in the market which produced an increase of goods demand but without liquidity supply. Consequently, demand for additional liquidity has still not been satisfied. In result for Rueff "the [investment]

program will have increased the extend of adaptations required for a spontaneous absorption of unemployment and delayed the moment when this one is likely to happen” (*Ibid.*). Rueff finished his reasoning with the idea that the financing by taxes reduced even more the purchasing power. Consequently, the risk was a decrease of goods demand³² which would have created an imbalance in the goods market. This imbalance on the good market would have provoked then an imbalance in labour market and thus produced a new wave of unemployed. However, Rueff took a case relatively untypical. It is rare that an unemployment situation is initially caused by an insufficient money supply or an over-demand for liquidity.

The second situation mentioned by Rueff corresponded to what he described as an “improbable hypothesis”, in other terms a situation in which “the public investment program would have absorbed all the under-employed production forces”. For Rueff, such a situation would have removed “any influence likely to ensure a spontaneous recovery in the market” (*Ibid.*). According to Rueff, the substitution of a private demand investment by a public demand would have ensured only an artificial full employment. State interventions prevented for Rueff the automatic adjustment by market forces which would have made possible to satisfy the demand for liquidity and the decrease of unemployment. Consequently, even if the absence of a State investment plan could lead to unemployment, Rueff was sure that this situation was only temporary, just for the time that the adjustment by market forces produced their action and especially provided the excess liquidity demand. However, Rueff seems to forget again that the State intervened precisely because rigidities in the market creates unemployment in Keynes theory. The State interventions would be the consequence and not the cause of unemployment.

Whatever the case, whether the investment program did not satisfy the liquidity demand or allowed the absorption of unemployed workers, Rueff’s conclusion is clear. For him, the State interventions led to a negative outcome: “the investment program will divert production means from sector where they are desired to less useful jobs” and, consequently, “will have reduced the standard of living of the community” (*Ibid.*).

ii.) Rueff considered a second option to finance the investment policy, by public borrowing or monetary creation (*via* the eligibility for the discount of Treasury bonds). To Rueff, these methods of financing were the most probable to be employed: “it is unlikely that a large investment program, occurring in a period when the economic depression will have greatly reduced tax receipts, will be financed in the framework of balanced finances” (*Ibid.*

³² In reference to the eviction effect, also called the “Ricardo-Barro effect” or the Ricardian equivalence theorem.

297). However, this second method had for Rueff “secondary effects that it is essential to consider”, in particular when it was “the object of generalized application” (*Ibid.* 296). He also noted that “the policy of full employment was systematically practiced [...] by the acceptance and voluntary creation of budget deficits” (Rueff [1975] 1979b: 176). More concretely, these budget deficits were initially financed by borrowing with treasury bonds. However, Rueff considered, when the issue accumulated and continued over time, the increase in the quantity of bonds led to a mistrust of the public, which forced the Central Bank to make eligible and then to discount (so to monetize) Treasury bonds and consequently to issue money.³³ Nevertheless Rueff stressed on the fact that it “will necessarily come a moment when the newly issued money will become undesired”³⁴ and “will cause a rise in the general price level and all the economic and social disorders of inflation” (Rueff [1947] 1979a: 297). For Rueff, the risk of switching to a new regime then became obvious.

5. Keynes’s solutions, a political threat for societies?

According to Rueff, the fate of societies would be played out in the economic field where political decisions would have the capacity to maintain a social order which would preserve human freedoms and not led societies towards totalitarian regimes. This was the topic of *The Social Order* (1945) whose central stake was for Rueff intimately linked to the context. Indeed, the writing of his book started during the 1930s, monetary and financial instability was at the heart of European countries mired in economic difficulties in the wake of the 1929 crisis. For authors such as Rueff monetary and financial instability represented a threat to the social order. It was obvious for him that there was a link with the change in the political regimes in Europe, as for Germany, Spain, and Italy which became totalitarian regimes. Rueff could not help but think that France would follow the same destiny, that is why he has sought to explain this transition in order to prevent the emergence of this kind of regime. His stake was to show in his book all the social, economic, and political dangers for societies, to see grow inflation following the digging of the public deficits caused by an intervention of the State (judged unjustified by Rueff). In that sense, Rueff’s book represents also an indirectly

³³ See Rueff ([1945] 1981: 621).

³⁴ This refers to the flight from money. Indeed, agents lose confidence in the money due to the money over-issue. They try to liquidate their liquidity by the goods buying. Consequently, they contribute themselves to the increase in inflation. However, the increase in demand for goods cannot be absorbed because the supply is insufficient what produces an imbalance in the goods market as well as a prices rise. If inflation stays, the money value will collapse ultimately.

criticism of *The General Theory* of Keynes, which by the application of its remedies caused for Rueff inflation.

In the first part of reasoning, Rueff stressed on the extreme case, that of the possible shift of political regime caused by inflation:³⁵

... it is likely that the next period of depression will bring worldwide the application of politics suggested by Lord Keynes. I do not think to mistake by saying that this policy will reduce unemployment only a little, but that it will have deeply consequences for the countries development in which it is applied. By the economic disorders that it will cause, it will reinstall in the world a regime of generalized planning, analogous to the war regime, and based on the suppression of all individual freedom. (*Ibid.* 300)

To fight against unemployment, the government had two solutions for Rueff. The first one was to “let the productive system to adapt thanks to price movements to the structure that the consumers impose on it” (*Ibid.* 298). The second was “to adapt the consumers will to the structure of the productive system by authoritarian means” (*Ibid.*). Rueff supported the first and was worried by the second, especially if the inflation caused by the application of Keynesian solutions continued over time. Indeed, over the long term or during a depression period, investment plans are generally financed not by taxes but by borrowing or monetary creation. In the first case, if too many bonds are issued, the public will want to get rid of them. Consequently, the Central Bank must monetize bonds and if too much money is issued, liquidity is generally no longer desired. Thus, demand goods on the market increases whereas supply is constant what generates upward pressure on prices. Indeed, Rueff considered that the newly created money had no real counterpart, what created a demand excess and thus inflation. He specified that the only way to avoid inflation was that agents keep their liquidity and they do not consume. For Rueff, it was assimilated to a rationing and planning regime as in a war regime (*Ibid.*):

The wartime programs created virtually unlimited demand. It reduced unemployment because available workers were transferred voluntarily or by force towards jobs where demand was created. For the financing, it was carried out [...] by resorting to the Central Bank. The inflation thus caused was [...] neutralized by rationing, that is by the suppression of the buyers' freedom in the use of their purchasing power. (*Ibid.* 298)

³⁵ Rueff's vision of liberal social order guaranteed and preserved human freedoms. For more information, see Daou (2019b).

However, Rueff pointed out that rationing was sometimes difficult to apply: “the implementation of a large investment program will significantly reduce [...] the production of goods actually demanded” (*Ibid.*). Furthermore, he considered also that this measure did not allow “to impose sufficient neutralization of purchasing power through demand rationing” (*Ibid.* 299-300) to fight against inflation. The rationing regime was imposed in France to reduce inflation during the Second World War. Although it was extended sometime later, according to Rueff it ultimately would have been abolished for the following reason: in peacetime “The public opinion will hardly admit being deprived of what it wants” (*Ibid.* 299). Nevertheless, let notice that even if some countries like France implemented a planning economy after the Second World War, it was far from authoritarian planning and rationing as described by Rueff.

In the second part of reasoning, Rueff stressed on social and economic impacts of inflation. In the long run, “the acceleration of the rise in prices inflicts cruel sacrifices on workers whose incomes follow with lateness the rise in prices” (Rueff [1975] 1979b: 176). Admittedly, this situation was avoided during the post-war boom in Europe when trade unions “imposed to governments [...] a movable scale procedure, allowing wages to follow, then later to anticipate the prices increase” (*Ibid.* 176-177). However, the level of wages had therefore become higher than the level of balance. For Rueff, this situation had then created unemployment: this had the effect “of increasing wages in relation to the general price level, that is creating more unemployment [...] the overemployment has ended. Unemployment has arisen and is extended throughout the West [...] where stagnation of growth and inflation coexist” (*Ibid.* 177). To sum up, the mistake for Rueff was to keep raising the wages scale. According to him the wages scale should have been lowered to get a balance level back. However, Rueff remarked that “[t]here is no doubt that large wage decreases in our world as it is [...] are humanly undesirable and socially impossible” (*Ibid.* 174). That is why Rueff supported a devaluation to re-establish balance: “we must not seek to adapt wages to prices, but deliberately adapt prices at the money value by devaluation” (*Ibid.* 177).

More generally, according to Rueff “in their ignorance, almost all governments have claimed to cure the disease of unemployment but by making it worse” (*Ibid.*). Indeed, Rueff considered that the Keynesian policies brought “two scourges”: in a first time, a greater rise in wages compared to rise in prices, and in a second time unemployment because “inflation no longer causes overemployment, but stagnation of the growth rate and unemployment” (*Ibid.*). Rueff finished his lampoon by these words:

By excessively giving governments the impression that they have the means to achieve the desired expansion and to banish unemployment by investments, the doctrine of full employment has opened wide the valves of inflation and unemployment. It is destroying what is left of Western civilization. (*Ibid.* 178)

Eventually, Rueff's criticism focused on the statism and financial imbalances that Keynes' theory implied for him. According to Rueff, all of this led to inflation, and even worse could lead to totalitarianism. However, the totalitarian predictions of Rueff did not happen in the 1970s for the economies plunged into inflation and financial instability. Nevertheless, his intention was laudable. Indeed, his view was justified by the fact that Rueff seemed to be haunted by the consequences of European financial instability during the interwar period which led Hitler to the power. He wanted to warn against this type of risks. By the way, the issue of public financial imbalances was already broached by Rueff in 1945. He wanted to demonstrate that it was from economic imbalances (monetary and financial) that social disorders were born. Thus, the purpose of his economic theory was no longer so much economic equilibrium, but the social order that Rueff wanted liberal and guarantying human freedoms through the financial and monetary balance of economies.

6. Conclusion

All the originality of Rueff's opposition lies in the fact that he brought the review of *The Theorie Generale* to the epistemological field. And it is precisely from this ground that the roots of differences between Keynes and Rueff are revealed. Rueff insisted on the non-Euclidean character of Keynes' *General Theory* and revealed his "fallacies". According to Rueff, the mistakes of Keynes were in the two hypotheses at the base of *The General Theory*: the downward rigidity of wages which would block the price mechanism and the exogeneity of the money supply which would prevent the monetary mechanism of regulation to take place, knowing that both create imbalances on goods and money market, and therefore unemployment. About these two hypotheses, not only Rueff reproached their implicit nature but especially he pointed out for the first one its artificial feature and for the second one its unrealistic feature. Consequently, Rueff considered that Keynes' theory ultimately had nothing general and belonged to the non-Euclidean theories.

However, Rueff's vision of non-Euclidean theories turned out to be extremely restrictive and several flaws have been detected, which ultimately prejudiced the merits of his criticism with respect to *The General Theory*. Thus, despite the novelty and originality of arguments to oppose the Keynesian theory, Rueff is not perfectly convincing, in view of his omission (voluntary or not) of the impact of non-Euclidean geometries in the developing of scientific (especially physical) theories which have revolutionized the scientific world and the view of the world.

Eventually and beyond the limits of Rueff's criticism, by analysing macroeconomic model from Keynes and Rueff through epistemological glasses, we see that the economic universe described by each is fundamentally different. When one supported Euclidean theories in the application of economic policies, the other considered them to be fundamentally outdated and pleads for non-Euclidean ones. When one defended price flexibility, the other based his analysis on rigidity. When one analysed the long-term balance on the labour market, the other considered short-term solutions to alleviate underemployment. While one has never accepted macroeconomic stabilization as an integral part of economic policy, the other placed it at the heart of his theory. However, the stake of this paper was not to disentangle the true from the false, or to decide between the truth and the untruth or between the winner and the loser in this controversy. The analysis of the two authors is the same value. Yet by forgetting Rueff in this debate, and more generally in the history of macroeconomics, it is forgotten that he proposed a vision of the economy which focused above all on the framework and the rules of the game of the economic activity, which are prerequisites for the good functioning of the markets. Indeed, we cannot only consider measures to quickly compensate for shocks, we must also draw up a framework allowing the functioning of the markets. In this sense, even if the approaches of Rueff and Keynes were fundamentally different, Rueff's analysis provided an important prerequisite for the functioning of markets and Keynes provided the policy toolkit against large or unusual shocks that are quickly compensated for the stability of the economy.

- Allais, M. (1943). *À la Recherche d'une discipline économique, première partie. L'économie pure*. Paris : Ateliers Industria.
- Autier, A. (2008). « La controverse entre Keynes et Rueff sur les causes de l'abandon de l'étalon-or en Grande-Bretagne en septembre 1931 », *working paper*, University Paris 8 LED.
- Chélini, M-P. (2011). « Le plan de stabilisation Pinay-Rueff, 1958 ». *Revue d'histoire moderne & contemporaine*, 48(4) : 102-123.
- Daou M. (2019a). « L'ingénieur économiste Jacques Rueff : rationalité et expérience. De l'application d'une méthode scientifique aux implications de la statistique en économie politique », *Oeconomia*, 9(4), 627-663.
- Daou, M. (2019b). "Rueff and the liberal social order: an interventionist liberalism", *Journal of the History of Economic Thought*, 41(4), 573-591.
- Daou M. (2020a) "The origins of Jacques Rueff's true and false rights theory", *working paper*, University Paris 1 Panthéon Sorbonne (PHARE).
- Daou M. (2020b) "From monetary imbalances to social disorder: between history and economics, the analysis of Jacques Rueff", *working paper*, University Paris 1 Panthéon Sorbonne (PHARE).
- Daou M. (2022a). « Aux sources conventionnalistes du discours épistémologique de l'ingénieur économiste Jacques Rueff », *Revue de Philosophie Economique* (forthcoming).
- Daou M., (2022b). « La théorie du chômage de Jacques Rueff. Traitement statistique et méthodologie scientifique », *Cahiers d'économie politique*, 82.
- Keynes, J. M. (1920). *The Economic Consequences of the Peace*. New York: Harcourt.
- Keynes, J. M. (1929). "The German Transfer Problem", *The Economic Journal*, 39 (153): 1-7.
- Keynes, J. M. (1930). *A Treatise on Money*. London: Macmillan and Co.
- Keynes, J. M. (1936). *The General Theory of Employment, Interest and Money*. Cambridge: Cambridge University Press.
- Lutz, A. (2015). "Non-Euclidean geometry and political economy. How Jacques Rueff explained unemployment in England (1919-1931)". *Working paper* du GATE-LSE.
- Machlup, F. (1928a). "Währung und Auslandsverschuldung: Bemerkungen zur Diskussion zwischen Schacht und seinen Kritikern" *Mitteilungen des Verbands österreichischer Banken und Bankiers*, 1: 194-208. Revised English version entitled "Foreign Debts, Reparations and the Transfer Problem".

- Machlup, F. (1928b). "Transfer und Preisbewegung", *Zeitschrift für Nationalökonomie*, 1, 555-560.
- Metzler, L. (1942). "The Transfer Problem Reconsidered". *Journal of Political Economy*, 50, 397-414.
- Mongin, P. (2002). « Le principe de rationalité et l'unité des sciences sociales ». *Revue économique*, 2 (53), 301-323.
- Ohlin, B. (1929). "The Reparation Problem: A Discussion". *The Economic Journal*, 39 (154), 172-182.
- Prat, G. (2013). « Rueff et l'analyse du chômage : Quels héritages ? », *working paper* presented at IPAG Business School for the Conference on « Jacques Rueff et crise économique » in Paris.
- Prat, G. (2013) « Chômage : l'actualité de la loi de Rueff », *working paper* presented at IPAG Business School for the Conference on « Jacques Rueff et crise économique » in Paris.
- Prat, G. (2015). « Rueff, Allais, et le chômage d'équilibre ». Présenté au Colloque sur Jacques Rueff organisé par l'IPAG Business School, Paris.
- Prat, G. (2016). « Rueff, Allais, et le chômage d'équilibre ». *Revue d'économie politique*, 126(6), 1105-1147.
- Rueff, J. (1922). *Des sciences physiques aux sciences morales : Introduction à l'étude de la morale et de l'économie politique rationnelles*. Paris : Librairie Félix Alcan.
- Rueff, J. (1925a). « Les variations du chômage en Angleterre ». *Revue politique et parlementaire*, 32, 425-437.
- Rueff, J. (1925b). Sur une théorie de l'inflation. *Journal de la Société de statistique*, 66, 83-108.
- Rueff, J. (1927). *Théorie des phénomènes monétaires : statique*. Paris : Payot.
- Rueff, J. (1928). *Une erreur économique : l'organisation des transferts*. Paris: Doin.
- Rueff, J. (1929) "Mr. Keynes' Views on the Transfer Problem", *The Economic Journal*, 39(155), 388-408.
- Rueff, J. (1930). « Les fluctuations anormales du pouvoir d'achat de l'or ». In *Documents sélectionnées soumis à la Délégation de l'Or au Comité Financier*. Genève : Organisation Economique et Financière de la Société des Nations.
- Rueff, Jacques. (1931a). « L'assurance-chômage : cause du chômage permanent ». *Revue d'économie politique*, 45, 211-251.

- Rueff, J. (1931b). « Sur les causes et les enseignements de la crise financière anglaise » (Report published in the 1st October 1931). Reproduced in *De l'aube au crépuscule*, Paris : Plon (299-320).
- Rueff, J. (1945). *L'Ordre social*. Paris : Recueil Sirey.
- Rueff, J. (1947). « Les erreurs de la Théorie Générale de Lord Keynes ». *Revue d'économie politique*, 57, 5-33. Published in English: "The Fallacies of Lord Keynes General Theory". *The Quarterly Journal of Economics*, 61(3), 343-367.
- Rueff, J. (1948). "Reply [to James Tobin's comment]", *The Quarterly Journal of Economics*, 62, 771-782.
- Rueff, J. (1953). « La régulation monétaire et le problème institutionnel de la monnaie ». *Revue d'économie politique*, (63), 5-43.
- Rueff, J. (1959). « Sur un point d'Histoire : le niveau de la stabilisation Poincaré ». *Revue d'Economie politique*, 69, 168-178. Reproduced in *Les Fondements philosophiques des Systèmes économique*, Paris : Payot, 1969).
- Rueff, J. (1961). Un danger pour l'Occident le Gold Exchange Standard. *Le Monde*, (27-29 juin 1961).
- Rueff, J. (1969). *Des sciences physiques aux sciences morales. Un essai de 1922 reconsidéré en 1969*. Paris : Payot.
- Rueff, J., & Claassen, E. M. (1967). *Les fondements philosophiques des systèmes économiques*. Paris : Payot.
- Rueff, J. (1975). « L'ère keynésienne », *Bulletin de l'Institut Economique de Paris*, 1-11. Republished in *Le monde*, 19, 20-21, 1976.
- Rueff, J. (1977). *De l'aube au crépuscule: autobiographie de l'auteur*. Paris : Plon (E. M. Claassen, G. Lane, & Lehrman institute, éd.).
- Rueff, J. (1979a). *Théorie monétaire*. Vol. 2. Paris : Plon (E. M. Claassen, G. Lane, & Lehrman institute, éd.).
- Rueff, J. (1979b). *Politique monétaire*. Paris : Plon. (E. M. Claassen, G. Lane, & Lehrman institute, éd.).
- Rueff, J. (1981). *L'Ordre social*. Paris : Plon (E. M. Claassen, G. Lane, & Lehrman institute, éd.).
- Steta, A. (2017) « Jacques Rueff, l'économiste qui murmurait à l'oreille de De Gaulle », *Revue des deux mondes*, 59-64.
- Tobin, J. (1948). "The fallacies of Lord Keynes' General Theory: Comment", *The Quarterly Journal of Economics*, 62(5), 763-770.