

Clément Juglar's Explanation of Recurring Crises and the "World Market and Crisis"

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Clément Juglar (1819–1905) is considered the pioneer of business cycle theory, a reputation largely ascribable to Schumpeter's recognition of his work.¹ Juglar regarded commercial crises not as a result of errors or accidents, but as the inevitable consequence of economic prosperity. He shifted the focus from individual explanations of specific crises to identification of the common causes of all crises. To prove the periodic nature of such crises, he dedicated himself to collecting and presenting volumes of statistical data that would render demonstration of the existence of such periodic crises unnecessary. He proudly stated that, "with no theory or any hypothesis, the observation suffices to detect the law of crises and the periodicity".²

Paradoxically, although Juglar persuaded people of the existence of periodic crises, later economists often criticized his lack of theory. Nowadays, his name survives in the term "Juglar cycle", which usually refers to a 10-year investment cycle. Juglar himself did not emphasize the regularity of this ten-year period or investment-induced process in explaining the crisis cycle, however. His true intentions have been neglected, while a false image of his work has survived.

In 2005, the centenary of Juglar's death, a conference on Juglar was held in Paris to reassess his contribution to the analysis of crises and cycles.³ Daniele Besomi pointed out that in the early half of the 19th century, some theorists were already familiar with the concepts of crisis and cycles that had been attributed to Juglar. Therefore, Besomi calls the high esteem given to Juglar "the fabrication of a myth".⁴

¹ Joseph Alois Schumpeter: *History of Economic Analysis*. New York 1954.

² Clément Juglar: *Des crises commerciales et de leur retour périodique en France, en Angleterre et aux États-Unis*. 2. éd. Paris 1889, p. XV.

³ Some papers are published in: *Revue européenne des sciences sociales*. T. XLVI, 2009, No. 143.

⁴ Daniele Besomi: *The Fabrication of a Myth. Clément Juglar's Commercial Crises in the Secondary Literature*. In: *History of Economic Ideas*. Vol. 19, 2011, No. 3, pp. 69–112.

In light of this point, it is necessary to rethink Juglar's accomplishments against the backdrop of recent studies and his writings rather than the myth.

Juglar maintained that economic crises were inevitable, i.e., no reform of financial policies or institutions could prevent them. He refuted the French banking principles of the Free Banking School (see 2.2.1), which attributed such crises to the monopolistic Bank of France. Moreover, Juglar emphasized that crisis is not the ruin of the current economic system, but rather an indispensable step to removing barriers to further development. He stressed simultaneous and homogeneous cyclical movements among developed countries (e.g. England, the United States, and France), and he introduced into his crisis theory less-developed countries (e.g. Russia and Spain) as heterogeneous factors in the world market because he needed an extrinsic restriction on unlimited credit expansion in periods of speculative prosperity.

In the same time as Juglar, Karl Marx also struggled to prove the inevitability of economic crisis. Juglar and Marx both embarked on their studies of economic crisis against the backdrop of the turbulence of the 1848 Revolution, although they did not refer to each other in their writings. Their arguments have both similarities and differences.

Their main similarity is their views on credit and currency, which are similar to that held by the Banking School, which contributed to their studies on the inevitability of economic crisis. What separates the two most significantly is Marx's conception of crisis as an opportunity to end capitalism, against Juglar's conception of crisis as a difficult step toward prosperity. Juglar's writings on periodic crises spanned over fifty years; however, his remarkable weakness was his focus, which remained too narrowly centered on the sphere of credit.

Another difference between the two concerns their views on the world market. Juglar regards the world market as heterogeneous, whereas Marx argues that crises arise due to the homogeneous capitalist world market.

The first section of this article briefly describes the development of studies by Juglar and previous studies on Juglar. The second section explains his theory of recurring crises.⁵ The third section compares Juglar and Marx in terms of their views on the world market and crises. Finally, the conclusion considers some implications.

⁵ Juglar's writings are not well known and have not been translated into English, except for the three versions of his dictionary article. See Clément Juglar: *Commercial Crises*. Transl. by Cécile Dangel-Hagnauer. In: *Research in the History of Economic Thought and Methodology*. Vol. 28, 2010, Pt. 1, pp. 115–167. Therefore, unless otherwise indicated, all quotations in this paper were translated from the original French by Y. I.

1. Studies on crises and cycles

1.1 The formation and development of Juglar's study of crises

Before focusing on economics, Juglar became a doctor like his father and wrote a medical dissertation titled *On the Influence of Heart Disease on the Lungs*. According to his descendants, he was mainly devoted to medical statistics rather than medical practice.⁶

After witnessing the 1848 Revolution, his focus shifted to social phenomena. His first published economic writing, a short essay on the free trade of grain, came out in 1851 in the *Journal des économistes*. Subsequently, in 1851 and 1852, he wrote a series of essays on demographic fluctuation, *On the Population in France from 1772 to Today (1849)*, in the same journal. In these essays, he described the long-term correlation between population change and the alternation of economic situations.

In 1856, just before the 1857 crisis, he published his first essay on commercial crises, titled *Commercial Crises in France from 1799 to 1855*, in the *Annuaire de l'économie politique et de la statistique*. In this essay, he analyzed commercial crises and the annual circumstances before, during and after the crisis using statistical data such as balance sheets from the Bank of France. In 1860, the Academy (*l'Académie des Sciences Morales et Politiques*) held a competition for research on commercial crises. The task was to "[s]tudy the causes and identify effects of commercial crises that have occurred in Europe and North America during the 19th century." Juglar submitted an essay and won the prize. His winning essay was published as his first book, *On commercial Crises and their Periodic Return in France, Great Britain and the United States*,⁷ in 1862. It opened with a theoretical discussion, but the majority of its content focused on exemplifying his theories. The theoretical part is devoted to methods for detecting cycle phases. For example, he discussed the distinction between two causes of the crises (as described in 2.2.3), as well as the prosperity that succeeded them, and an index such as the metallic reserve and bill on discounting in the Banks to detect the different phases within the cycle.

He summarized the book in a dictionary article titled *Crises commerciales* in 1863.⁸ These two works were his first complete works on crises and their cycles.

⁶ Pierre Salmon: L'originalité de Juglar. Thèse complémentaire, Université de Paris 1966, p. 11.

⁷ Clément Juglar: Des crises commerciales et de leur retour périodique en France, en Angleterre et aux États-Unis. 1. éd. Paris 1862.

⁸ Clément Juglar: Crises commerciales. In: Dictionnaire général de la politique. Éd. par Maurice Block. Paris 1863. T. 1, pp. 615–627.

Since then, every time Juglar wrote a long book, he summarized the content in a dictionary article, a pattern he repeated three times.

Table 1. Juglar's Major Works

	Book		Article in dictionary	
First completion	<i>Des crises commerciales et de leur retour périodique en France, en Angleterre et aux États-Unis.</i>	1. éd 1862	<i>Crises commerciales</i> In: Dictionnaire général de la politique	1863
Development	<i>Du change et de la liberté d'émission</i>	1868	<i>Crises commerciales</i> In: Dictionnaire général de la politique	1873
Last completion	<i>Des crises commerciales et de leur retour périodique en France, en Angleterre et aux États-Unis.</i>	2. éd 1889	<i>Crises commerciales</i> In: Nouveau dictionnaire d'économie politique	1891

Following this, he participated in the currency controversy in France over the note-issue monopoly and free banking. In 1865, he published excerpts and translations of British Parliament papers on money and credit from 1810 to 1858 at the direction of the Bank of France.⁹

In 1865, the Academy held a competition for research into fiduciary circulation. The task was to “[s]tudy the conditions of fiduciary circulation and identify the differences between banknotes and other means of credit.” Juglar once again submitted an essay. Although there was no winner, he was one of three entrants whose work was commended. He published his essay under the title *On the Foreign Exchange and the Free Note-Issue* in 1868.¹⁰ In this book, he supported the banking principle and central banking; i.e., he thought of banks as passive entities and advocated concentrating the metallic reserve in the Bank and having the Bank set the discount rate policy to defend the reserve.

Based on his new currency theory in this book, he revised the dictionary article in 1873.¹¹ His 1863 article emphasized overproduction beyond demand, led by price increases, whereas the revised article emphasized the deterioration of foreign exchange due to domestic price increases resulting from excessive speculation.

⁹ Extraits des enquêtes parlementaires anglaises sur les questions de banque de circulation monétaire et de crédit. Trad. et publiés ordre du gouverneur et du conseil de régence de la Banque de France sous la direction de Couillet et Juglar. Paris 1865.

¹⁰ Clément Juglar: *Du change et de la liberté d'émission*. Paris 1868.

¹¹ Clément Juglar: *Crises commerciales*. In: *Dictionnaire général de la politique*. Éd. par Maurice Block. 2. éd. Paris 1873. T. 1, pp. 586–598.

His theory developed through his participation in the currency controversy. He integrated the periodic crisis theory of the first edition of *Des crises commerciales* and the currency theory of *Du change et de la liberté d'émission* in the second edition of *Des crises commerciales* in 1889.¹² He summarized the extensive content of his new book in a new dictionary article in 1891.¹³ Thus, he completed his life's work on credit theory and how to detect the different phases within cycles mainly via Bank's balance sheets.

In his economic life, he landed a financial windfall by investing in the Suez Canal on the recommendation of Ferdinand de Lesseps, the Canal's founder. He earned his living by managing his family property. He was a journalist-economist and held important posts in academic societies.

1.2 Studies on Juglar

During Juglar's lifetime, two short reviews of the second edition of *Des crises commerciales* were published in journals. After his death, most studies on business cycles focused on production and investment, and Juglar's method, which was based narrowly on credit, was neglected or criticized. The first general survey on Juglar was written by Mangelsdorf as an academic dissertation for a German university.¹⁴ It reviewed both the theoretical parts and the empirical parts in only 73 pages. Characteristically, Mangelsdorf compared Juglar to Charles Coquelin and Henry D. Macleod, identifying their common feature as "*Wechselinflationstheorie*": inflation through the expansion of commercial credit.¹⁵ The next general survey was Salmon's work.¹⁶ Written as a complementary dissertation, it has been freely available online since 2011. In terms of theory, it clarified that Juglar underscored the passivity of the banks and criticized proponents of the Free Banking School, such as Coquelin, who attributed crises to the monopoly held by the Bank.

Since around 2005, new studies on Juglar have been published. Among the most important are a series of essays by Daniele Besomi, who surveyed an extensive archive on business cycles in the first half of the 19th century, and clarified that Juglar's concept of 'cycle' were already present at that time. Therefore, Besomi denies Juglar's significance as a pioneer. Besomi's assertion is right in that he recognizes Juglar's predecessors, but he neglects Juglar's

¹² Juglar: *Des crises commerciales*. 2. éd (Fn. 2).

¹³ Clément Juglar: *Crises commerciales*. In: *Nouveau dictionnaire d'économie politique*. Éd. par Léon Say et Joseph Chailley. Paris 1891, pp. 641–651.

¹⁴ Friedrich-Siegmund Mangelsdorf: *Clément Juglars Krisenbarometer. Seine Grundlagen und seine Bedeutung*. Berlin 1930.

¹⁵ *Ibid.*, pp. 47–49, 52–54.

¹⁶ Salmon: *L'originalité de Juglar* (Fn. 6).

participation in the currency controversy and the logical connection between the inevitability of crises and currency theory. The influence of currency and credit theory upon his crisis theory is important, regardless of his significance as a pioneer.

Another recent important study was carried out by Dangel-Hagnauer.¹⁷ This study established that Juglar's explanation of periodic crises shifted in the mid-1860s. Before that time, Juglar used the logic of overproduction to support his explanation. After, however, he relegated overproduction to the background to instead emphasize the deterioration of foreign exchange prior to commercial crisis (as described in 2.2.3).

2. Theory

2.1 The basic character of Juglar's theory of recurring crises

2.1.1 Periods in the cycle

Juglar defined three periods that occur within a cycle: prosperity (7–10 years), crisis (10–15 days), and liquidation (3–4 years).¹⁸ He did not conceive of cycles as occurring in fixed 10-year periods. The fact that crises recur every several years shows that the cause is not an extraordinary event:

“The oscillation of business must not be linked to the form determined in advance. It needs to be thought of as elastic. It is more useful than to fix the periodic return of crises to 5 or 10 years. It is troublesome to always attribute the origin of crises to an extraordinary event. We cannot explain how such an event can reappear periodically at a regular interval making the same trouble.”¹⁹

Rather than a fixed term, Juglar emphasizes the causality of the three successive periods. Prosperity paves the way for crisis. The “symptoms that precede the crises are the signs of great prosperity.”²⁰ Liquidation removes the excessive speculation that caused the crisis and thus prepares the foundation for the prosperity to follow.

In the period of prosperity, prices rise with the help of credit expansion by merchants and banks. As prosperity proceeds and prices continue to rise, over-

¹⁷ Cécile Dangel-Hagnauer: Clément Juglar on Commercial Crises. The Dictionary Articles. In: *Research in the History of Economic Thought and Methodology*. Vol. 28, 2010, Pt. 1, pp. 97–113.

¹⁸ Juglar: *Crises commerciales*. 1891 (Fn. 13), pp. 642/643.

¹⁹ Juglar: *Des crises commerciales*. 2. éd (Fn. 2), p. 164.

²⁰ Juglar: *Des crises commerciales*. 1. éd (Fn. 7), p. 5.

ly high prices prevent sales to foreign countries: "The crisis is therefore the stoppage in the increase of prices, that is, the moment when new buyers are no more to be found".²¹ As a result, firms that hold too much unsold stock go bankrupt. In the period following the crisis, the insolvent firms involved in excess speculation during the span of prosperity are cleared away:

"It can be said that the gravity of the crises correlates with the development of the wealth of the nation. After several years of price increase that ends in large speculations, the stagnation of prosperity lets the regular commerce recover in the normal way, after clearing the imprudent speculation. Therefore, we could not see more liveliness, more facilities in business, more confidence and security than after the liquidation of crises. As its name suggests, the crisis is distressing accidents, but, as with illness, it prepares for a better situation after throwing away the impurity outwards."²²

In more detail, he explained the cycle as follows:

"Easy exchange of products with the aid of credit and fiduciary circulation – Price increase – Slowdown of circulation of products – Difficulty of sale for cash or on credit – Offset of commercial bills becomes impossible because the products cannot be sold when due. – Deterioration of foreign exchange – Outflow of specie – Contraction of credit or increase of discount rate – Commercial crisis – Decrease of prices – Reflux of precious metals – Liquidation of the crisis."²³

2.1.2 Predisposition

Another key concept in Juglar's explanation is 'predisposition'. Juglar took care to emphasize the distinction between a crowd of occasional causes and predisposing causes. Occasional causes only serve as a final straw. It is therefore more important to identify the common phenomena that occur prior to the crisis, which are predispositions or true causes²⁴:

"There is condition prior to a crisis which needs to be studied carefully and without which even the most plausible causes do not get activated. Medicines call it the predisposition. For example, the cold causes many illnesses: rheumatism in some case, pneumonia in some, pleurisy in some others. The cause is the same, but the result is quite different. It is a local disposition that tilts the balance in one direction or another. In fact, without the disposition, the cold may not make a person get any disease at all. The same is true for the crises. We are devoted to determining the circumstances in which the crises develop and the causes of explosion of crises. We

²¹ Juglar: *Commercial crises* (Fn. 5), p. 152 (Juglar: *Crises commerciales*. 1891 [Fn. 13], p. 643).

²² Juglar: *Des crises commerciales*. 2. éd (Fn. 2), pp. 255/256.

²³ Juglar: *Du change et de la liberté d'émission* (Fn. 10), p. VI.

²⁴ There is some inconsistent terminology in Juglar's writing, but the distinction between two causes is clear.

insist, above all, on the conditions indispensable for their existence and on the constant phenomena that are observed during the crises, not the miscellaneous causes that are invoked in the need of the moment.”²⁵

Occasional causes only serve as immediate triggers that determine when the crisis will happen. A predisposition determines whether it will happen in the first place.

However, this distinction between causes is not his invention. Coquelin, an advocate of the French Free Banking School, had already asserted the need to identify the common cause of all crises rather than merely hunting for an individual explanation of each crisis.²⁶ Coquelin identified the monopolistic bank as the common cause, however, and therefore thought that crises could be avoided by eliminating it. Therefore, his argument failed to account for the inevitability of these crises.

By contrast, Juglar regarded as a common feature the spontaneous, widespread, excessive speculation that no banking reform could prevent. Thus, he was able to assert the inevitability of the recurrence of crisis, in contrast to Coquelin.

2.1.3 Indices exemplifying periodic crises

One of the most remarkable features of Juglar’s work is his lengthy data analyzes. He endeavored to collect time series data covering as long a time span as possible with as frequent a sampling interval as possible. He used the time series of metallic reserves and that of bill discounting for banks, such as the Bank of England. These were available weekly, over a long timeframe and offered precise data. Metallic reserves decrease and bill discounts increase as the crisis approaches, during prosperity. By contrast, metallic reserves decrease and bill discounting increases after the crisis, during the liquidation phase. The movements of these two series are consistent with Juglar’s credit theory (as described in 2.2). His analyzes of these long-term and frequent interval data were very effective at delineating the periodic nature of the crises.

He also collected and used many other series, such as miscellaneous price indices, population, imports and exports.

²⁵ Juglar: *Des crises commerciales*. 1. éd (Fn. 7), pp. 2/3; id., *Des crises commerciales*. 2. éd (Fn. 2), p. 28; see also id., *Crises commerciales*. 1863 (Fn. 8), p. 616.

²⁶ See e.g. Charles Coquelin: *Crises commerciales*. In: *Dictionnaire de l’économie politique*. Éd. par Coquelin et Guillaumin. Paris 1853, pp. 526–534, see p. 530.

2.2 Juglar's credit and currency theory

Juglar's key phrases in explaining the existence of crises and their cycles are "The credit is the motor" and "the bank is the manometer".²⁷ He uses the term "credit" to refer to commercial credit granted by merchants to each other, not bank credit. The amounts that merchants can no longer hold are brought to banks, who grant credit to merchants. Bank credit is instead passive and complementary:

"The credit is the principal motor. It gives impulsion. It gives seemingly unlimited purchasing power by signing a simple commercial bill, a bill of exchange; during crises, it becomes apparent that it is not unlimited."²⁸

"What promotes the development of the affair and the increase in prices is credit. First of all the credits are provided by merchants one another. The banks only help its circulation, substituting their promises to pay for the promises issued by the public."²⁹

"The true role of the banks comprises of making cash by exchanging a promise to pay after a certain period for another promise to pay at sight; with further development, banknote itself is removed, and all payments are made only in the direct offset of commercial paper, with the aid of deposits in the current accounts in banks."³⁰

By considering banks passive, like the Banking School, Juglar was able to deny the Free Banking School's view that crises were caused by the banking monopoly and could therefore be prevented simply by reforming the banking system.

To better understand his way of thinking, the next section describes Juglar's attitude toward the currency controversy and his characteristic monetary theory.

2.2.1 Juglar and the currency controversies in France and England

Juglar participated in the currency controversy in France in the 1860s, which arose between the Free Banking School and the banknote-issue monopolist. He surveyed the English Currency Controversy and repeatedly credited the *Bullion Report*³¹ and, in fact, took the position of the Banking School. To understand how his credit and currency theory contributed to his understanding of crisis, it

²⁷ See e.g. Juglar: *Des crises commerciales*. 2. éd (Fn. 2), p. 505; id., *Crises commerciales*. 1891 (Fn. 13), p. 650.

²⁸ Juglar: *Des crises commerciales*. 2. éd (Fn. 2), p. 51.

²⁹ *Ibid.*, p. 71.

³⁰ Juglar: *Du change et de la liberté d'émission* (Fn. 10), p. 473.

³¹ See e.g. Juglar: *Des crises commerciales*. 2. éd (Fn. 2), p. 39; id., *Crises commerciales*. 1891 (Fn. 13), p. 645.

is useful to examine the underlying framework of the currency controversies in England and France in the early to mid-19th century.

In the Bullionist controversy, extreme (hard) Bullionists like David Ricardo argued that, based on the quantity theory of money, the only cause of deteriorating foreign exchange and the rising gold price was over-issuance by the Bank of England. They demanded the resumption of convertibility into gold.

Meanwhile, the moderate Bullionists (e.g. Henry Thornton, *Bullion Report* of 1810) recognized the influence of non-monetary factors other than over-issuance. They too desired the resumption of convertibility, but they thought, excluding the condition of resume convertibility, that the Bank of England should manage the currency by adjusting the quantity of issued notes by focusing on the foreign exchange rate as an operating target. Due to the prevailing usury laws, the discount rate policy was not effective.

Juglar reproached the anti-Bullionists (e.g. Charles Bosanquet and the directors of the Bank of England), who supported the real bill doctrine without the gold convertibility, on the grounds that the currency's value would be unstable without gold convertibility. In fact, Juglar was closer to the moderate Bullionists than the hard ones, although he did not distinguish between the two camps. He opposed the quantity theory of money and viewed foreign exchange fluctuations as being due to the default of the offset of miscellaneous foreign payments. Juglar focused on the balance of payments with foreign countries, not the currency values that result from changes in quantity.

Table 2. Currency Theories in England and France from the 1840s to the 1860s³²

		Right of note issue	
		Central Banking School	Free Banking School
Principle of note issue	Currency principle	1) Currency School (England), Issue monopolist (France)	3) Currency principle Free Banking School (a few)
	Banking principle	2) Banking School	4) Banking principle Free banking School (most of the Free Banking School)

The controversy in France in the 1860s centered on the monopoly of the Bank of France on issuing banknotes. The Free Banking School, which was prevalent among French economists, was based on the banking principle. Unlike the currency principle, the Free Banking School viewed banknotes not as money

³² Based on Vera Smith: *The Rationale of Central Banking and the Free Banking Alternative*. London 1936, pp. 144/145; Antoine Gentier: *Economie bancaire. Essai sur les effets de la concurrence et de la réglementation sur le financement du crédit*. Paris 2003, p. 41.

but as a means of credit and therefore denied the quantity theory of money. The Banking principle Free banking School³³ and the Banking School are same in terms of their view of the banking principle but differ in their attitudes toward the monopolistic privileged bank. The Free Banking School insisted that banknotes issued by the monopolistic bank do not reflux to the issuing bank and stimulate unsound speculation, while the Banking School (Central Banking School) maintained that all banknotes reflux, whether from the monopolistic bank or not.

The Banking principle Free banking School in France included Saint-Simonianists (e.g. Michel Chevalier) and advocates of pure anti-monopoly (e.g. Courcelle-Seneuil³⁴). Some of them reproached the monopolistic bank for the excess credit driven by note-issuing for profit, which led to speculative price increases and the subsequent violent interest rate rises, which, in their eyes, caused a crisis. Some thought that, with repeal of the banking monopoly, the free banking could give more credit via banknotes as a convenient means of credit and lower interest rates. Others opposed all monopolistic privileges.

Juglar advocated a central banking policy that used a discount rate change in connection with the quantity of gold reserves concentrated in the Bank of France, based on the *Bullion Report* and the Banking School. He paid little attention to banknotes on the premise of the development of other means of credit (e.g. checks, deposits), although he recognized the usefulness of note issuance by banks other than the Bank of France in areas where credit and bank systems were less developed and the Bank of France did not have any branches.

Regarding the currency principle, Juglar repeatedly denied the quantity theory of money, which held that general prices are inversely proportional to the quantity of money, which is the theoretical rationale of the currency principle. He argued that speculative price increases start with a few commodities and gradually expand to many others. Consequently, prices increase across the board. Therefore, general price increases are due not to increases in money supply, but to increases in the objects of speculation.³⁵

2.2.2 Other features of Juglar's monetary theory

Juglar emphasized the shift from banknotes to bank deposit currencies as the banking and payment system developed. He distinguished between two types of bank deposits: Specie Current Accounts (*Comptes courants espèces*) and

³³ For this term, see Gentier: *Economie bancaire* (Fn. 32), pp. 38–41.

³⁴ Smith: *The Rationale of Central Banking* (Fn. 32), p. 94.

³⁵ Juglar: *Crises commerciales*. 1891 (Fn. 13), p. 646.

Discount Deposits (*Comptes courants escomptes*). Specie Current Accounts result from depositing existing cash or banknotes, whereas Discount Deposits result from granting credit for commercial bills. The latter is more important because it offers a way for banks to issue the deposit currencies without constraints, even if note-issuing is strictly regulated.³⁶ Therefore, whether under a monopolistic bank or free banking, speculative price increases are promoted by credit expansion among merchants, helped by bank credit.

Juglar thought of the interest rate as the price difference between sale on credit and sale on cash. Thus, the rate is determined by merchants, not by banks.³⁷ Immediately prior to a crisis, the banks raise discount rates steeply and suddenly. Although the French Free Banking School viewed this jarring increase as a cause of crisis, Juglar objected to this characterisation, arguing that the Banks raise the rate passively in order to defend their gold reserves, which were flowing abroad due to speculative high prices at home. He argued that the banks cannot change the interest rates and are therefore not the true cause of crisis.

He maintained that the discount rate that is raised during the crisis is not the true rate of interest but the price for withdrawing gold from the banks. Moreover, the Bank Charter Act of 1844 in England widened the gap between the two rates:

“By seeing the action of the Bank of England bound by the 1844 Act in order to get the fiduciary circulation to follow metallic circulation, we can understand that the discount rate does not represent the true rate of money interest because there are gaps between the rate decided by the Bank and the rate decided by the free market. It often happens that raising the discount rate by the Bank of England shows not a shortage of capital, but lack of offsetting on various markets in the world. So traders are obligated to send not the products, but metallic money reserved in the vaults of the Bank. To defend metallic money, the Bank makes the withdrawal of metallic money more expensive. The observation explains many of the movements seen only in London.”³⁸

Demand for gold in times of crisis is not intended to facilitate circulation, but is necessary for paying foreign countries in gold, which is not the role that banks are meant to play. Juglar argues that when the banks are asked to provide metallic money, the credit systems have broken down.

³⁶ Clément Juglar: Recension à propos de l'ouvrage de Léon Wolowski. *La Banque d'Angleterre et les Banques d'Ecosse*. In: *Journal des Économiste*. 1868 juillet, p. 143; id., *Du change et de la liberté d'émission* (Fn. 10), p. 213; id., *Des crises commerciales*. 2. éd (Fn. 2), p. 224.

³⁷ Juglar: *Des crises commerciales*. 2. éd (Fn. 2), p. 130. Though the rate is determined in this way in countries with highly developed credit systems, in countries where the credit systems are underdeveloped, the banks determine interest rates.

³⁸ *Ibid.*, p. 140.

"It is the ability to buy by the promise to pay that constitutes the marvel of credit, but it is the private credit, not the bank credit, that matters. The bank credit intervenes only for aiding the circulation of the private credit whose maturity date is not coincident and for promoting the exchange of commercial papers by making a new, more widely accepted promise circulate extensively because the promise is guaranteed by the issuing institution and is convertible at sight. It is true that because the circulation of banknote can only aide the fiduciary circulation issued by people, the demand for reimbursement into specie indicates that all mechanisms are provisionally broken, and that people want to transform credit transactions into cash transactions."³⁹

In normal economic times, merchants' promises to pay are circulated as currency, if needed, backed by the banks, but in an emergency, when their promises to pay cannot be offset, the metal money reserved in the banks is withdrawn. Giving gold is not the proper function of the banks but rather indicates that the credit system is provisionally broken.⁴⁰ The origin of this improper demand for gold withdrawal is explained in the next section.

2.2.3 Crisis and a heterogeneous world market

Juglar assumed unlimited elastic credit and unlimited price rises within a single country. This means that his crisis theory cannot be completely realized within a closed system, and he had to introduce extrinsic factors.

He emphasizes the co-occurrence (*solidarité*) of crises and cycles among different countries – but not among all countries. Their co-occurrence is seen only among countries with developed credit systems able to support elastic price rises:

"These movements are simultaneously observed in England, France, and the United states, that is, the three countries using the largest credit. People often accuse the other countries for the cause or origin of all difficulties, but in this case they cannot, because, despite the enormous movement of metallic capital, the flux and reflux are simultaneously observed in the three countries."⁴¹

"It should be noted that the three grand countries where credits are the most widespread: England, the United States, and France experience unfavorable foreign exchanges at the same time. The abuse brought about by the most fortunate, gifted

³⁹ Juglar: *Recension* (Fn. 36), p. 142.

⁴⁰ Marx also pointed out that the development and breakdown of the credit system causes the hunger for metallic money. He described monetary crises as follows: "Such a crisis occurs only where the ever-lengthening chain of payments, and an artificial system of settling them, has been fully developed. Whenever there is a general and extensive disturbance of this mechanism, no matter what its cause, money becomes suddenly and immediately transformed, from its merely ideal shape of money of account, into hard cash." (Karl Marx: *Capital. A Critique of Political Economy*. Vol. 1. MECW. Vol. 35, pp. 148/149 [MEGA² II/5, p. 94].)

⁴¹ Juglar: *Des crises commerciales*. 2. éd (Fn. 2), p. 196.

people in the three countries inevitably causes, due to high prices, a lack of balance with those who do not have such a marvellous lever in the modern industry. As soon as the products' sales decline, gold needs to be sent."⁴²

2.3 Non-monetary real analysis of the crisis

There are two views regarding the emergence of crises and the cycle theory of the Banking School, upon which Juglar based his ideas. One view emphasizes speculation and its collapse due to the abuse of credit. However, this explanation can be viewed as superficial. For example, although he recognized Juglar's achievements, Spiethoff also pointed out his lack of insight into the capitalist mode of production:

"Juglar lacks any insight into the basis specific to the highly developed capitalism in the century or into the capitalist mode of production in general. He gives the impression of a sleepwalker. Having read his works, the reader feels like they are standing before an obscure picture rather than gaining any knowledge of the national economy. He does not use the rich literature on overproduction at all. His way of thinking is like that of a writer with a focus on the narrow phenomena of the crisis in the area of credit, bank, and securities rather than that of a national economic thinker who looks into overproduction. His forerunners are not Sismondi, Malthus, J. B. Say or Marx, but should be like Tooke."⁴³

The other view of the Banking School emphasizes the non-monetary, real character of crises and cycles.⁴⁴

From this perspective, the Banking School considered all banks passive; thus it also viewed the act of issuing notes created by the banks as passive. Therefore, it viewed the triggers for a cycle are non-monetary factors. In fact, Thomas Tooke emphasized that speculation was stimulated not by monetary factors but by real factors.⁴⁵

Juglar also offered real analyzes of crises and cycles, although sporadically. For example, before the mid-1860s, when he had not yet developed his credit theory, he relied on the excess production theory. He explained this in 1863 as follows:

"To sum up in a single proposition the result of our studies on this subject, we may say that crises are the natural reaction that occurs as a consequence of efforts made to raise even further production that has already been carried to excess proportions, and

⁴² Juglar: *Du change et de la liberté d'émission* (Fn. 10), p. 316.

⁴³ Arthur Spiethoff: *Die wirtschaftlichen Wechsellen. Aufschwung, Krise, Stockung*. Tübingen 1955, p. 149. Translation by Y. I.

⁴⁴ See Vera Smith: *The Rationale of Central Banking* (Fn. 32), p. 90.

⁴⁵ See e.g. Thomas Tooke: *An Inquiry into the Currency Principle*. 2. ed. London 1844, ch. 12 and p. 126.

if crises are more intense today than they were in the past centuries, it is because we now have at our disposal means of production unknown to our forefathers, Therefore, we will need to get used to the idea of the periodical return of these commercial turbulences that, at least up to now, appear to be one of the conditions for the development of big industry."⁴⁶

After the mid-1860s, although he wrote fewer analyzes of real factors, some were used in a book published in 1889, which includes the "absorption of capital" and the concept of gestation.

His concept of the "absorption of capital" refers to floating capital that is transformed into fixed capital to such an extent that the lack of floating capital causes sudden price rises, triggering a crisis:⁴⁷

"Mr. Wilson pointed out that the crisis of 1847 was produced not by the violent speculations like those of 1814 and 1825, but, above all, by the extravagant application of the nation's floating capital to the railway construction and by the poor harvest. It was difficult to transform the widespread spent capital. The cause of the evil is always the absorption of capital. Its absence makes people believe that the circulation is under the necessity and demand augmentation for issuing banknotes, which cannot, however, take over the desired role."⁴⁸

In other parts, Juglar used the theory of gestation period:

"More value gives way to less value, not to say loss. Enormous circulating capital has been immobilized in constructions, factories, houses, and machines. It causes an increase in wealth and products in the future, but the temporary absence of revenue causes a large gap, and afterwards, a large trouble in the business."⁴⁹

The "absorption of capital" theory emerged in the first edition of *Des crises commerciales*, and the same text remained in the second one. His gestation period theory did not emerge in the first edition or *On the Foreign Exchange*. It cannot be confirmed whether the gestation period theory was used prior to 1889, when the second edition of *Des crises commerciales* was published.

Nevertheless, the theory of the absorption of capital served as an important step from non-monetary analysis to his real overinvestment crisis theory. However, Juglar's reference to this theory is sporadic, and he denied overproduction, as is evident in his dictionary article of 1891:

⁴⁶ Juglar: Commercial crises (Fn. 5), pp. 118/119 (Juglar: Crises commerciales. 1863 [Fn. 8], p. 616). See also id., *Des crises commerciales*. 1. éd (Fn. 7), p. 142.

⁴⁷ Marx also referred to the influence of the excess transformation of circulating capital into fixed capital as overproduction. See Karl Marx: *Grundrisse der Kritik der politischen Ökonomie*. In: MEGA² II/1, p. 583.

⁴⁸ Juglar: *Des crises commerciales*. 1. éd (Fn. 7), pp. 25/26; id., *Des crises commerciales*. 2. éd (Fn. 2), pp. 264/265.

⁴⁹ Juglar: *Des crises commerciales*. 2. éd (Fn. 2), p. 34.

“As we see, it is always the theory of excess production that is cited as the primary cause of crises. Demand has been over-anticipated, production needs to stop, a reduction of prices is felt necessary; but then why does not the preceding rise of price is pointed out, even though the primary cause that emerges from these observations is there?”⁵⁰

Juglar argues that because the overproduction is a response to price rises, overly high prices prevent sales and cause the phenomenon of oversupply. Therefore, for him, the predisposition, i.e., the true cause of a crisis, is price increases triggered by credit expansion.

From the Marxian point of view, the limits of Juglar’s understanding of these crises are clear. He viewed “overproduction” as supply over demand, not as the decrease of capital’s profit, which is what Marx meant by referring to the “absolute overproduction of capital.”

3. Juglar and Marx: Homogeneous or heterogeneous world market

Both Juglar and Marx made use of the credit and currency theory of the Banking School. Both recognized that the more the credit system and production develop, the more widespread and serious the crisis. Crises and cycles in developed countries synchronize, so a crisis in one country emerges as a crisis in the world market. The trigger for a crisis is the outflow of metal reserves as world money.

Unlike Juglar, however, Marx developed a theoretical concept of capital as self-valorisation and sought the true cause of crises within the capitalist sphere of production, where a contradiction exists between capital and wage labor. Juglar did not view crises as being peculiar to the capitalist economy.⁵¹

The rest of this section discusses the difference between Juglar’s and Marx’s concepts of the world market and crises.

In the 1850s, Marx intended to write “World market and crisis” as a conclusion to his “6-book plan” on economics. The plan was probably not completed, however, and he published only the earlier parts of the plan as *Capital*.

Marx frequently emphasized the world market in his writings because the world market is a precondition and result of capitalist production. The development of capitalism over the world market strengthens its contradiction.

⁵⁰ Juglar: *Crises commerciales*. 1891 (Fn. 13), p. 644.

⁵¹ *Ibid.*, p. 650.

Among the descriptions in *Capital*, Vol. 3 related to "World market and crisis", the following passage best highlights their similarities and differences:

"In 1857, the crisis broke out in the United States. A flow of gold from England to America followed. But as soon as the bubble in America burst, the crisis broke out in England and the gold flowed from America to England. The same took place between England and the continent. The balance of payments is in times of general crisis unfavorable to every nation, at least to every commercially developed nation, but always to each country in succession, as in volley firing, i.e., as soon as each one's turn comes for making payments; and once the crisis has broken out, e.g. in England, it compresses the series of these terms into a very short period. It then becomes evident that all these nations have simultaneously overexported (thus overproduced) and overimported (thus overtraded), that prices were inflated in all of them, and credit stretched too far. And the same breakdown takes place in all of them. The phenomenon of a gold drain then takes place successively in all of them and proves precisely by its general character 1) that gold drain is just a phenomenon of a crisis, not its cause; 2) that the sequence in which it hits the various countries indicates only when their judgement-day has come, i.e., when the crisis started and its latent elements come to the fore there."⁵²

Marx thought that credit expansion stimulates overexporting and overimporting, or overproduction and overtrade, which leaves too much unsold stock. The countries that overtrade are left with much foreign debt, but credit allows the debtor to delay payment. England, as the world banker, gave longer credit but received shorter credit. Therefore, sales stagnated and payment was demanded, whereby England had to pay first. In England, gold outflows increased, credit shrank and crisis broke out. Subsequently, the other countries that overtraded had to pay, and crises also broke out among them. Thus, every commercially developed nation has an unfavorable balance of payment at the same time, but crises take place successively.

Thinking more logically, a trade deficit need not exist before the crisis. Even if the balance of payment, including both short-term and long-term items, is balanced as a whole for a country, insolvency in individual capital can occur if its debts due surpass its claims due in individual capital. Solvency might be saved with the aid of credit expansion. Thus, regarding the limit of credit expansion, Marx and Juglar were both trying to solve the same problem.

Marx emphasized the insolvency caused by overtrading and overproduction in the homogeneous capitalistic world market, while Juglar viewed the heterogeneous world market as a contradiction between developed and undeveloped countries.

⁵² Karl Marx: *Capital. A Critique of Political Economy*. Vol. 3. MECW. Vol. 37, p. 491 (MEGA² II/15, pp. 488/489).

Methodologically, Marx assumed that countries other than England would also develop capitalist economies, so the inevitability of these crises had to be explained in terms of events inside the homogeneous capitalist countries, although he recognized that the capitalist development in England could possibly make other areas agricultural and less industrial,⁵³ which would make the world market heterogeneous. By contrast, Juglar did not care about the theory of capitalism. He simply relied on the fact that the world market was heterogeneously split into countries with a developed credit system and ones without.

Conclusion

In the first stage of his study on economic crises, Juglar's concern focused narrowly on proving their periodic recurrence. He invoked a range of theories already recognized in his day, including the "absorption of capital" theory, as Wilson emphasized, and the theory of overproduction as a result of industrial development.

However, as he participated in the French currency controversy that arose in the 1860s, his focus shifted to monetary and credit theory. He was influenced by the *Bullion Report* and the Banking School. Thus, he was able to offer insight into the inevitability of recurring crises, the nature of which was such that no regulation or deregulation of the banking system could prevent them. He emphasized that speculative price increases resulting from credit expansion were mainly driven by merchants, with complementary backing from banks.

The expansion of credit in countries with developed credit systems is unlimited, but excess price increases in that country with developed credit systems worsen the balance of payment vis-à-vis countries without such credit systems. Juglar focused on credit and price fluctuations and neglected overproduction theory in his main argument, although he did occasionally refer to the real factors as causes of crisis.

Juglar's other notable feature is his adherence to collecting long-term and frequent interval data, such as bank balance sheets. His detailed data and analyzes enabled him to document and demonstrate the recurring nature of the crises, but his contribution was forgotten.

In conclusion, first, as the change in Juglar's writings shows, the position held by the Banking School in the French currency controversy in the mid-19th century contributed to the emergence of crisis theory. It denied ideas like those

⁵³ See e.g. Marx: Capital. Vol. 1. MECW. Vol. 35, p. 454 (MEGA[®] II/5, p. 369).

held by the anti-central-banking Free banking School to the effect that monetary disturbances were the cause of the recurring crises. Second, Juglar's assumption of a heterogeneous world market has implications for how we understand the consequences of uneven capitalist development in the world economy.