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Clément Juglar and the transition from crises theory to business cycle theories

> "On this question, various and contradictory opinions have been formed; and if the notorious fact of the public distress has united the sentiments of all parties on this single point, they seem to differ as widely as ever in their judgements as to the causes of it."
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> [Anonymous, 1816, p. 375]

1. Introduction

Clément Juglar's contribution on periodical crises is often credited with having marked the definite transition from the theories of crises to the theories of business cycles. The champion of this view is, as is well known, Schumpeter, who propagated it on several occasions. The same author, however, points to a number of other writers who, before and at the same time as Juglar, stressed one or another of the aspects for which Juglar is credited primacy, including the recognition of periodicity and the identification of endogenous elements enabling to recognise crises as a self-generating phenomenon. There is indeed a vast literature, both primary and secondary, relating to the debates on crises and fluctuations around the middle of the nineteenth Century, from which it is apparent that Juglar's book *Des Crises Commerciales et de leur Retour Périodique en France, en Angleterre et aux États-Unis*, (originally published in 1862, and very much revised and enlarged in 1889) did not come out of the blue but was one of the products of an intellectual climate inducing to think of crises not as unrelated events but as part of a more complex phenomenon, a cycle (a climate helped by the almost regular occurrence of crises at about 10 years intervals).

The present paper aims at assessing how Juglar's contribution was immersed in this context, focussing not much on his specific theoretical contribution but on his, and his

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contemporaries', conceptions of cycles and crises. Starting from the premise that it is widely recognised that *some* of the ideas necessary to pass from crises to cycle theories were (or, at least, were becoming) common at the time, in particular the notion that crises where recurring, approximately in a regular way, following a common path, in stages systematically following each other, it makes sense not only to assess the truth of such statements, but also to examine some related and equally fundamental aspects of the same issue, the exploration of which has not so far been systematically pursued: what are the methodological premises for the examination of the 'new' phenomenon of cycles, in particular regarding the notion of causation? How are the alternative approaches—those relying on the individuality of crises—disposed of, methodologically and rethorically? What role do crises and cycle play in the working of the economic system? And how do they relate to the 'normal' state of the system?

The more appropriate form I have found to deal with these problems is that of a (somehow Juglar-centred) partial survey —unavoidably partial, because of the very nature of the materials at hand: most writings were housed in pamphlets, ephemera and articles in general purpose journals which today are not easy to retrieve, and only very rarely in books or articles in professional journals (in part because professional journals were rare at the time, in part because, as Schumpeter observed, "not much to their credit, the scientific leaders of the profession were not conspicuous" among the participants in the debates on crises (1954, p. 742)). It will not, however, be a hunt for Juglar's forerunners: ideas only make sense in their context, and apparently similar ideas taken in isolation may not prove fecund of further illumination. What matters here is the context, consisting in writers of different sorts (from lawyers to merchants, politicians to financiers, and occasionally economists as well) fiercely debating the causes of crises, and their possible remedies.[1] This will be more the story of a set of *problems* than an account of the *answers* (although in some cases the answers were formulated without full awareness of the generality of the problem). The picture that emerges is that Juglar was not alone in taking up some of the above-mentioned problems, while he left untackled other important issues his contemporaries were instead discussing.

The story is thus more complicated than what can be read from Schumpeter's passages on Juglar taken in isolation: it features many characters, only partially aware of the net of interrelated components necessary to produce a consistent theory of the cycle

[1] To some observers it was already clear not only that crises were coming in waves, but were followed by surges of diagnoses of each event. Marx, for instance, wrote to Lassalle that the time of crises, in England, is also the time of theoretical research (letter of 23 January 1855, in Marx and Engles 1967). Mills noted that "It is scarcely a matter for surprise, and still less for regret, that every commercial crisis occurring in this country is promptly followed by a literature of pamphlets, discussing the phenomena and their supposed causes, while they are yet a matter of painful interest to the public mind" (Mills 1868, p. 11).

but each working (some partially consciously —and Juglar is among them—, some fully unawarely) towards the gradual euthanasia of crises and glorification of cycles.

The paper is structured as follows. Section 2 singles out the main components of Juglar's view of the cycle, beginning from his early writings and with his more mature work (in separate sections, as the changes were at places rather drastic). The timing is important, for in the almost three decades spanning between Juglar's two editions lots of events and discussions took place. Section 3 examines the state of the debate before and at Juglar's time, with respect to the recurence and concatenation of phases, causation, the relationship of growth an cycles, the use of statistics, the ingredients of Juglar's analytical construction, the implications of the usage of medical metaphors, and the relationship of crises to equilibrium. Section 4 takes up more or less the same problems, but in the light of the subsequent developments, in particular the phase of consolidation of business cycle theories. Section 5 examines how Juglar's views were received in the literature of his time, their impact on theorists at the nadir of the business cycle era, and reports Schumpeter's view. The closing section draws some conclusions.

2. Juglar's views on periodical crises

2.1. Laying out the premises

Juglar's argument, as developed in a long article on "Des Crises Commerciales et Monétaires de 1800 à 1857" in the *Journal des Économistes* (Juglar 1857), in more detail in the first edition of *Des Crises Commerciales et de leur Retour Périodique en France, en Angleterre et aux États-Unis* (1862), and taken up in the entry on "Commercial crises" for Block's *Dictionnaire général de la politique* (1863), is simple enough. Historically, commercial crises (*crises commerciales*) are always accompanied by monetary crises (*crises monétaires*). Juglar thus[2] analysed long series of banking statistics (discounts, metallic reserves, circulation of banknotes, deposits), at first only for France (1857) and later also for England, the Unites States and to a lesser extent for Prussia and Hamburg (1862), which he compared with the variations in population,[3] the price of corn, import and exports, rents and public revenue. He noted a strict correlation (especially in the variations of discounts and reserves) and that changes go through specific phases, always the same, and are in concordance in the countries where commerce

[2] "On puovait hésiter sur le point de départ de ce travail; mais quand on réfléchit que la Banque de France est le grand intermédiaire du commerce, et que le mouvement des escomptes représente assez bien le mouvement commercial, il était naturel de s'en servir comme point de comparaison" (Juglar 1857, p. 37). This explanation is a bit flimsy; however, at the time of Juglar's first inquiries examinations of the relationship of financial crises and the banking system were quite common and did not call for any special justification. For France see e.g. H. Say 1847 and 1855.

[3] In 1852, Juglar wrote an article on population in France from 1725 to 1849. In the introduction to his book, Juglar indicates that after having recorded the influence of epidemics, wars and famines, he wanted to examine how the state of trade affects population dynamics (1862, pp. i-ii). A short chapter of the book is dedicated to this problem.

and industry are more developed. From this regularity, Juglar inferred[4] that the common premise to all crises lies in the excesses of speculation and in the inconsidrate expansion of industry and trade:

> Les crises se renouvellent avec un telle constance, une telle régularité, qu'il faut bien en prendre son parti et y voir le résultat des écarts de la spéculation et d'un développment inconsidéré de l'industrie et des grandes entreprises commerciales (1857, p. 36, and 1862, pp. 6 and 164).

The exuberance of speculation and enterprise is rooted in human nature (1857, p. 37, and 1862, p. 7), liable to become overexcited (1857, p. 37) and to fall prey of the passion for gamble (1862, pp. 205–6) during the prosperous phase of activity, when "tout parait conspirer pour donner un essort sans pareil aux affaires; toutes les entreprises qui se fondent trouvent les capitaux nécessaires; on s'arrache les titres, on les achète avec une confiace sans réserve dans l'avenire" (1862, pp. 6–7; 1857, p. 36). Expenditure can, for a time, exceed receipts only thanks to credit (1862, p. 164): excesses are thus nothing else than abuse of credit (1862, pp. 34, 38).[5] But this cannot last: a crisis will intervene, bad credits and other excesses will be liquidated, the system is brought back to its normal course of developent which it will be able to follow for a few years, before new abuses shatter again its foundations.

The theoretical apparatus is admittedly scanty: as Juglar himself pointed out in the second edition of his book, looking back at his original statement, the "loi des crises et de leu périodicité" was derived "sans faire intervenir aucune théorie, aucune hypothèse", but by way of "l'observation seule des faits" (1889, p. xv).[6] Moreover, he was also wary of generalizations that could be drawn from his observations as to the cause of crises: "Quoique l'examin des documents statistiques qui vont suivre puisse engager à conclure et à reconnaitre une loi économique, la prudence conseille de ne pas trop se hâter" (1862, p. 6). Juglar's purpose, indeed, was not the development of an analysis of the causes of crises, but stressing that these follow a common path and are related to each other:

> Le renouvellement et la succession des mêmes faits, dans des *circumstances spéciales*, dans tous les *temps*, dans tous les *pays* et sous toutes les *régimes*, voilà ce qu'il fallait faire remarquer (1862, p. xiii).

Juglar's book was an answer (indeed, the winning answer) to a competion launched by the Académie des Sciences Morales et Politiques in 1860, setting the task of

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[4] Rather unwarrantedly: see **footnote 23 "One may also note …"**

[5] At this point, however, Jugalr's emphasis if fully on speculation (see e.g. 1862, p. 199); credit will conquer the center of the stage in the second edition of Juglar's book, where the explanatory mechanism will be considerably amplified and centred on the relationship of credit, prices and speculation. **See below, section 2.2**.

[6] Niehans stresses that in Juglar "very little economic analysis" is to be found (1992, p. 549).

> Inquire into the causes, and indicate the effects, of commercial crises[7] that took place in Europe and North America during the XIX Century. These crises have been frequent at any epoch; but, as commercial relations have expanded, the perturbations crises bring with are also touching more and more regions (Académie des Sciences Morales et Politiques, 1860).

Juglar's approach consisted in relying on large numbers and long periods rather than on disputable assertions.[8] It was a precise methodological choice, which he pursued at the price of producing a tedious book:

> la répétition constante des même accidents donne une monotonie réelle à notre historie: nous sommes forcé de passer successivement et toujours par les mêmes phases, non sans causer un certain ennui à l'esprit qui aime la variété et toujours avide de nouvotés; n'est-ce pas cependant la meilleure confirmation de ce que nous voulions démontrer? (1862, p. xii)[9]

Methodology and rethorics are better married in the following stage of Juglar's argument. If crises are not to be taken as disconnected individual occurrences but have some features in common and tend to recur cyclically, there must be a common explanation of the phenomenon, in spite of the different circumstances affecting different economic systems at different times. In the literature of the time, however, crises were attributed to a number of different causes. Juglar was aware that he had to play two games at the same time if he wanted to win his case: on the one hand, he had to reconduce all crises under the same scheme in spite of the objective differences between each special occurrence, by reinterpreting the role of the special events and of the general premises of crises. On the other hand, he had to counter all his opponents' arguments at once.

Juglar handled this challenge very effectively. The first edition of his book began with a discussion of the term 'cause'.[10] Juglar took up the distinction, rooted in the medical reflection of the time, between 'causes déterminantes' and 'prédisposition'. As he only explained and exemplified the second term (1862, p. 2) but not the first (which he used on p. 1), it is expedient to refer to the entry on 'causes' in the *Dictionnaire de Médicine Usuelle*, published only three years after Juglar completed his medical dissertation on the influence of heart diseases on the lungs

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[7] The plural should be noted. As it will be argued below (**section 3.2**), the idea that crises recur and are part and parcel of capitalistic development was already widely shared at the time of Juglar's first writings on the subject.

[8] "En nous appuyant non seulement sur des relevés statistiques, mais sur des grand nombres, sur des longues périodes, et dans trois grand pays, nous pensons avoir rempli beaucoup mieux que par des assertions toujours discutables les principales conditions d'une démonstration scientifique" (Juglar 1862, p. xiii).

[9] "A proof by boredom!" (Morgan 1990, p. 41). We find a similar argument in Tugan-Baranowsky: "there is evident an extraordinary resemblance between [crises] in all their essential characteristics. […] This makes the history of crises very monotonous and serves as the best evidence of the uniformity of the phenomenon under investigation" (Tugan-Baranowsky 1914, Engl. translation p. 745). Della Bona also took it up, leaving however the boring pieces to De Laveleye, Juglar and Max Wirth (1888, p. 76).

[10] The passages cited in these paragraphs also appeared in the second edition, but as the second chapter (1889, pp. 27–29).

> Nous nous bornerons donc aux divisions principales ou à la classification des causes morbides. Il en est qui préparent les maladies; elles sont pour la plupart dans l'organisation elle même: on les nomme *prédisposantes*; d'autres, presque toutes extérieures, font éclater la prédisposition et produisent la maladie, et l'on appelle celles-là *déterminantes* ou *occasionnelles*. Prenons un exemple: cet homme a le cœur volumineux, le sang abondant, le cou court, cette complexion est la cause prédisposante à l'apoplexie; que, maintenant, dans un accès de colère, il soit foudroyé, l'émotion sera la cause occasionnelle. Sans la prédisposition, les influences maladives sont impuissantes, mais les signes qui la révèlent sont souvent cachés. Ce ne serait pas une mince difficulté que d'annoncer *à priori* quelle serait la part de chacun de quatre imprudents qui, couchés en sueur sur de la terre humide, devraient se relever l'un avec un rhumatisme, l'autre avec un catarrhe pulmonaire, le troisième avec une diarrhée, le quatrième en santé parfaite. L'examen préalable de l'organisation de chacun aiderait sans doute à la solution du problème, mais avant l'épreuve le résultat resterait souvent incertain. (Lagasquie 1849, p. 313)

Without mentioning crises (thus remaining at the level of general principles of explanation), Juglar pointed out that when we look for the "causes déterminantes" of what surrounds us we are "under siege by a crowd of occasional causes" that "impair our view and often induce us to mistake the accident for the very origin of the affliction" (Juglar 1862, p. 1). The following passage is a rethorical masterpiece, as it expounds the principle that will subvert the adversaries' approach while at the same time very subtly ridiculing them:

> Le véritable critérium des causes, c'est de les voir, dans des circonstances semblables, reproduire les mêmes effets, particularité malheureusement assez rare dans les phénomènes sociaux et dans tout ce qui touche à la vie. Dans cette incertitude, on invoque tour à tour les causes les plus contraires pour se rendre compte des mêmes effets. On est surpris de la légèrete, de la facilité avec laquelle l'esprit humain accepte tout ce qu'on lui propose; tellement il est avide de savoir, de se rendre compte, et, quand il ne trouve rien de mieux, combien facilement il se paye de mots. La multiplicité même des causes que l'on invoque le plus souvent suffit, il nous semble, pour prouver leur peu d'efficacité, puisque, alors qu'une seule devrait suffire, on en accumule un grand nombre, sorte que, comme elles ne sont pas toujours réunies pour produire le même effet, on peut aussi rigoureusement, conclure, en les éliminant une à une, qu'aucune n'est cause déterminante, pas même secondaire, puisque sa présence n'est pas indispensable pour produire le résultat attendu. (Juglar 1862, p. 2)

Juglar concluded that one should study the "état antérieur […] en l'absence duquel les causes que l'on croirait les plus puissantes sont sans action. C'est ce qu'en médecine on appelle la prédisposition" (ibid.). Accordingly, when we pass to crises (which in Juglar's argument only appear at this point), we have to identify "les conditions indispensables à leur existence, sur les phénomènes constants que l'on observe alors en dehors des causes si diverses, si variées, que l'on invoque selon le besoin du moment" (p. 3).[11] Juglar could thus successfully contrast his unifying perspective to his opponents' special views, and

[11] Groenewegen (2001, pp. 122–3) emphasised the medical origin of Juglar's notion of predisposition and caught well its meaning and implication without, however, noticing that the concept was counterposed to the 'determining cause', which also plays a part in the methodology and the rethorics of Juglar's construction. Frobert, in his otherwise interesting essay on the medical metaphor in Juglar, missed the point altogether (Frobert and Hamouda 2005).

indeed he took every chance to do so (for instance 1862, iii, ix-xi, 1-2, 5-6, and passim; he further insisted on this in the second edition of his book, 1889, pp. 5; 27-29, 36, 43, 165, 197)

Juglar's emphasis on the predisposing causes has two consequences. One is that in the absence of predisposition a cause that could bring havoc would instead be ineffective (1862, p. 2): during prosperity, when people are overexcited, "une grande guerre ne saurait arrêter le mouvement" (1857, p. 57). The second is that the actual determining causes are not that relevant, as the crisis would have happened anyway: when everything is predisposed for the crisis, any accidental cause would precipitate it, like the last drop overflowing a full glass of water (1862, p. v). "Les mauvaises récoltes, la cherté des céréales, les disettes, par leur retour périodique se rencontrent assez souvent dans notre pays avec l'engorgement du portefeuille des banques, et apportent une nouvelle complication à une situation déjà mauvaise: leur présence n'est cependant pas indispensable pour produire une crise commerciale" (p. x).[12] These causes are thus reinterpreted as explaining not the actual crisis, but its specific character. The interpretation of crises as individual events, each with its own specific cause, is thus turned on its head: the occasional circumstance determine only the specificity of each crisis, the difference with other similar events, while the general pattern is determined by the way in which the predisposing cause determines the unstable state of the system at certain points.

Two aspects deserve to be stressed in this connection. The first regards the notion of 'periodicity'. If accidental circumstances affect the actual course of crises, they can make them more or less intense but also anticipate or retard them: in Juglar's view there is no room for strict periodicity.[13] The adjective 'periodic' occurring in the title of Juglar's book thus refers to a different conception, which (not surprisingly) again happens to be more akin to the medical than to the astronomical one.[14] The emphasis is not much on the period,[15] but on the return of the various phases, which succeed each other in precisely the same order with similar characteristics. The notion is thus related to cyclicity in general terms, to the idea that crises are not disconnected individual occurrences but part of a chain of events implying the return of disturbances after some conditions are fulfiled, rather than to the specific kind of cycles that repeat themselves with strict regularity.

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[12] Juglar went so far as claiming that wars and revolutions are actually a consequence, not a cause of crises: 1857, 38; 1889, p. xvii

[13] In truth he did not insist on this point in the first edition, but he specifically tackled it in the second: **see section 2.2.**

[14] Beaude's *Dictionnaire de Médicine Usuelle*, 1849, p. 621: "Période: se dit des différentes phases d'une maladie; une période suppose un certain nombre de jours pendant lequel s'est accomplie une des revolutions de la maladie". Accordingly Juglar attached the term 'période' to the denomination of the prosperos phase ('période prospère': 1862, p. 164) and later also to the phase of liquidation ('période de liquidation' (1900, p. 9). See for instance the Dictionnaire de l'Académie Française, 6th and 7th editions (1835 and 1878, respectively) for a comparison of the different intensions of the substantive.

[15] Juglar, however, indicates the approximate average length of the cycle: the crisis is sudden and short, liquidation takes 1–2 years, prosperity about 6–7 years (1862, 202).

Juglar identified three phases: prosperity, crisis, and liquidation (1862, p. 164), and discussed how they succeed each other. The presentation, as well as the cycle itself, is asymmetric. The focus is on crises: their origin, their nature, their outbreak, their liquidation. As anticipated early in this section, during prosperity people become unduly optimistic (1862, pp. 202, 205–6) and start overspeculating. The keywords, recurring in a long string, are 'imprudence', 'abuses', 'excesses': as "il est dans la nature humaine de ne se tenir jamais dans des justes limites" (p. 20) and become overexcited (167), the result is "excès de spéculation" (16, 20, 24, 88), "extravagante application du capital flottant" (25, reporting Wilson's opinion on the 1847 crisis), "écarts de la spéculation" (6, 164, 199), "spéculation insensée" (25) or "imprudente", (142, 208) "aux déla de leurs moyens" (142), "développement exagéré des escomptes" (27, 31, 209), "abus du crédit" (29, 34, 38, 88), "overtrading" (29), "crédit fictif" (34), "douteux" (172) or "artificial" (57, 163), "prix exagéré" (37), "développement inconsidéré de l'industrie" (164).[16] Some of these exaggerations and excesses refer to the credit market and the stock exchange, others affect production and goods markets. In particular, expenditure exceeds receipts, and investment runs ahead of saving: among the results of the excess of speculation there is "souvent aussi l'emploi et l'immobilisation d'un capital supérieur à celui qui pouvait fournir les ressources ordinaires du pays, autrement dit l'épargne" (164; see also 38 and 154).

So far as it goes, such a situation remains in an increasingly insecure balance: "tant que la hausse persiste, on échange les produits, personne ne perd, mais malheur au dernier détenteur!" (1862, p. 14). As speculation is carried on, tension accumulates,[17] and the system becomes extremely unstable. While in the earlies stage of prosperity the system could remain unaffected even by a war (1857, p. 57), towards the end it becomes like a basin about to overflow (1862, p. v) or like explosive ready to blast (1862, p. 176; 1863, p. 8), so that any occasional cause can set it off, leading to "perturbations sérieuses pour des causes peu graves" (1862, v). Juglar describes the failure of the system by means of the hydraulic metaphor of pipes becoming engorged: "tout à coup tous les canaux paraissent remplis, il n'y a plus d'écoulement possible, toute circulation cesse et une crise éclate. Toutes les spéculations s'arrêtent; l'argent, si abondant quelque mois auparavent, diminue, se resserre, disparaît même" (1857, p. 37).

How can these pipes be unblocked? The system must get rid of the unhealthy speculation, and here the medical man emerges again. Commercial crises, "comme dans les maladies [...] préparent un état meilleur en rejetant au dehor tout ce qui était impur"

[16] All citations are from the first edition of Juglar's book (1862); the list could easily be extended with a number of similar citations from other of his writings, such as 1863, p. 8; similar quotes from the second edition and other late writings are given in section 2.2.

[17] "un crédit trop tendu que les charges accumulées finissent par rompre" (1862, p. 176). Niehans thus considers Juglar's conception as belonging to the family of relaxation oscillation theories of fluctuations (1992, p. 546–7).

(1862, p. 14; 1863, p. 8). The diseased parts have to be suppressed (208): during the liquidation the less solid businesses[18] fail "et débarrassent le marché d'une cause incessante de trouble et de ruine" (14; see also 208). Eventually the system is brought back to its healthy, normal state (1863, p. 8),[19] a stable (1862, p. 208) equilibrium (pp. v, 172): "une crise n'est qu'une liquidation générale pour permettre aux affaires de reprendre sur un base plus solide" (176).

From these passages Juglar's conception of the nature of capitalist accumulation emerges rather clearly. Prosperity is the normal state of the sytsem, and consists in the "développement régulier de la richesse des nations"[20]. In its early stages this is a self-sustaining state of moving equilibrium, where one's expenditure covers someone else's costs. Credit is a necessary premise to the increasing number of exchanges and therefore to accumulation; at this junction it does not create any problems, for everybody is confident that it can be liquidated easily. Yet the instinct for gamble brings to overspeculation, which is by its nature cumulative: credits become more and more doubtful, and at some point the system turns extremely unstable. The crisis explodes: excesses and abuses are wiped out, and the system is reconducted back to its normal track. In this view, periodical crises are a necessary inconvenience: they are "un dérangement dans la marche des affaires" (1863, p. 1), but a disturbance intrinsic[21] to the accumulation process, and actually helpful, for economic advance contains and develops the germs of growing instability which have to be cleared. The resulting crisis is conceived as the undesirable product of accumulation itself, and the premise for its recovery:

> les crises, comme les maladies, paraissent une des conditions de l'existence des sociétés où le commerce et l'industrie dominent.[22] On peut les prévoir, les adoucir, s'en préserver jusqu'à un certain point, faciliter la reprise des affaires;

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[18] "il est rare de voir de bonnes maisons succomber" (1862, p. 14). This view, however, was not universally shared: the editor of *The Bnkers' Magazine* appended a note to Lawson's 1848a contribution observing he overlooked the fact that crises, "ruins not only the speculator but the prudent man of business also; for the latter is invariably involved with the former. The large number of solvent houses who were forced to suspend payments payments last year is a melancholy proof of this fact" (B. M. 1848).

[19] Santé: "Etat dans lequel toutes les fonctions s'exécutent librement et facilement: c'è l'état normal" (Beaude's *Dictionnaire de Médicine Usuelle*, 1849).

[20] Wolowsky 1860, citing the mémoire submited by Juglar to the Académie in 1860; in Juglar 1862, p. xiv.

[21] Intrinsic; not, as stated by Frobert, 'normal' (Frobert and Hamouda 2005). Juglar reserved the term 'normal' to prosperity, the equilibrium state free of the exaggerations of credit and speculation (the passages relating to the first edition are given in the text, while the references to the later writings will be given **below, section 2.2**), and indeed there is nothing normal in a diseased organism. The nomality of the entire cycle is an issue that arose later, as will be seen **in section 4.2**. Frobert, however, has rightly stressed that Juglar's analogy of crisis as illness was rooted in the medical conception of his time, which saw illness as part of the physiology of an organism. His argument that this metaphor has played a heuristic role in the development of Juglar's thought, rather than a purelly illustrative one, is of considerable interest.

[22] Juglar is adamant —it is also part of his rethorical apparatus— that the periodicity of crises is a universal and synchronous phenomenon (1862, for instance pp. 4, 13, 15 and passim), but only relative to countries where commerce, industry, and especially credit are developed (e.g. p. 5).

> mais les supprimer, c'est ce qui jusqu'à ici, malgré les combinaisons les plus diverses, n'a été donné à personne. Proposer un remède à notre tour, quand nous reconnaissons le peu d'efficacité de ceux des autres, n'était pas possible, d'autant que leur évolution naturelle rétablit l'équilibre et prépare un sol ferme sur lequel on peut s'appuyer sans crainte pour parcourir une nouvelle période. (1862, p. vii).

Although the endogenous/exogenous distinction was conceptually well within Juglar's reach, for it is strongly implied in the distinction between determining cause and prédisposition (as witnessed by the dictionary entry cited above), he did not make that step. This apparently curious situation is due to the povery of his theoretical and analytical apparatus: the concepts of endogenos and exogenous refer to internal and external with respect of the theoretical system, but Juglar's line is so ill-defined that an analytical classification would not be possible. A first problem in this respect, which Juglar tackled in the second edition, is that the mechanism declenching the crisis is not clear. Intuitively, one grasps that the instability increases as speculation proceeds, so that at some point anything can act as the occasional cause. But the specific mechanisms explaining how instability grows are absent: the explanation relies on the public's "élan" (201), "fureure" (205), "engougement, frénésie" (202) in subscribing to any new enterprise.[23] At this point of Juglar's analysis, the society's disease is thus explained by individual madness.

The second problem is more troublesome. The 'normal state' is not defined: prosperity is said to be an equilibrium, a state of regular progression supporting itself, but it is not clear how this happens; its driving force is never specified, nor are its equilibrium conditions. A notion uniquely based on the absence of 'abuses' and 'exaggerations' is, of course, circular reasoning. The tendency to accumulate thus remains unexplained, and so is the lower turning point: it is not enough to say that bad credits are liquidated and excesses eliminated if what drives the recovery is not specified. This has obvious implications on the exogenous/endogenous distinction: if the endogenous forces driving growth are not specified, one cannot define by contrast what is exogenous.

But there is also an implication regarding the conception of the cycle. Juglar hints that phases do not simpy follow each other in a regular fashion, but that each one breeds the following: prosperity brings the germ of disorder (1862, p. 121; see also 172), the crisis is by necessity followed by a liquidation. In both direction, "une fois le *mouvement commencé* dans un sens ou dans l'autre, *croissant* ou *décroissant*, il continue sans interruption jusqu'au moment où un revirement complet a lieu". The point is precisely that one needs to explain the "revirement": but in Juglar's book how prosperity gives rise to crisis is only intuitively clear, while is is fully unclear how and why liquidation

[23] One may also note that the passage cited at the opening on this section, where Juglar 'pris son party' and inferred from the regularity of the recurrence of crises that at its origin there must be excesses of speculation, was left unexplained. If he identified the culprit before starting his inquiry, the latter was bound to bring precisely that result!

gives place to prosperity.[24] A full explanation of the cycle is still wanting, but Juglar can offer a *description* ("nous voudrion montrer ici qu'on peut en suivre le *développement pas à pas*, presque mois par mois, au moins, d'une manière très claire, *année par année*": 1862, p. 164), even a diagnostic (pp. 197–8); but at any rate, he laid out the principle that an explanation of a cyclical process requires that phases are linked to each other.

2.2. Revising, adding, and deepening

The second edition of *Des Crises Commerciales* was published in 1889. It is almost three times as long as the first edition, obvously contains many new materials, in particular further statistics (Juglar brought up to date his previous series, to confirm and give more strength to his results: 1889, p. xv), additional considerations on the lines already expounded in the first edition, and a shift of emphasis in the argument giving more weight to the role of prices in Juglar's mechanism.

Juglar insisted more than he did before on some significant points in the transition from crises to cycle theories. The most interesting one concerns the linkage between phases:[25] while in the first edition the emphasis was on the *succession* of phases in the same relative order, in the new version Juglar stressed the *chaining* of phases; in the first edition the approach was more descriptive, in the second Juglar more clearly aimed at developing a causal explanation. It is no longer enough to record that "les périodes s'enchaînent, se suiven avec une régularité qui étonne toujours" (pp. 9, 48, 164), one must move a further step: "ces trois périodes reconnues, il fallait chercher les rapports qu'elles pouvaient avoir entre elles et sous l'influence de quelles causes elles se succédaient" (pp. 21; 4), it is necessary to understand how each phase results from "la réaction qui se succède à l'action" (p. xvi).

The basic idea as to how each phase is characterized remained the same, although the connection between phases now worked via changes in the price level:[26] prosperity, at

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[24] There is an asymmetry here, which reflects in the asymmetry in the division in three phases: while what happens during the prosperity provides the 'cause prédisposante' of the crisis, liquidation *prepares the way* for the recovery (this appropriate wording is suggested by Hutchison 1953, p. 371) which, however, doe not need a specific cause, it is just in the nature of things.

[25] Although the book is still centred, also terminologically, on crises, the terms "circle" (p. 10) and "cycle" (p. 17, 97, 162, 166, 554 —the list is due to Niehans 1992, p. 550) are occasionally used. The term—and some similar ones, such as 'fluctuations', 'waves'—has been in used long since: some instances are cited in Section 3.2.

[26] In Niehans's view, Juglar's focus on prices—as well as that of most of the literature on cycles up to the interwar years, when prices were substituted by output—reflects the fact that statistics were more readily available (1992, p. 552). This explanation, however, fails to account for the shif of emphasis between the first and second edition: some statistics on prices were available by 1862 (in particular those collected by Tooke), but Juglar choose instead to inquire into banking data, in spite of the difficulties in gathering some of them. The reference to prices as a link between credit and speculation enabled Juglar to give a better formulation of the cumulative process in the upswing, and give some intuitive kind of characterization of the prosperity phase in terms of equilibrium in prices (not a static one, but an equilibrium of raising prices reflecting the joint acceleration of credit and production), which was entirely lacking in the first edition. One may thus conjecture (pending historical research into the development of Juglar's thought) that Juglar was aware that his first edition lacked an adequate theoretical basis and that

least in its early stages, is a stable equilibrium of advance, the system's normal, healthy state. As opposed to crisis as a diseased condition,[27] "Dans le langage vulgaire, la période prospère n'a pas de nom; c'est ce que l'on regarde comme l'état normal, on n'en parle même pas; il en est de la prosperité comme la santé, rien ne paraît plus naturel" (p. 16): "c'est l'état normal du marché, la période prospère" (p. 33). It is characterised by an equilibrium in prices (p. xvi) which is only broken when credit gets out of hand (pp. 53–54).[28] Credit itself is necessary to permit growth and thus prosperity;[29] yet its 'exaggerated extension' and 'abuse' (pp. 5, 47, 56, 168)[30] to pay for 'exessive expenses' (p. 4) is driven by the 'gambling attitude' of the public (p. 4) fed by the price increases generated by these same expenses, in a speculation spiral eventually destabilising the system.[31] This happens when purchases are no longer in proportion with the available capital (p. 53): "l'équilibre des prix est rompu" (pp. 54, 34, 35, 165).[32] Juglar resorted again to the analogies of the loaded explosive charge (pp. 30, 43, 165; see also 1900a, p. 646) and the overfull water basin (pp. 48, 165), that can explode or, respectively, overflow, due to any occasional cause, to stress the methodological point that the 'predisposition' to crises lies at a deeper level than the accidental or determining causes (see also p. 197).

Although "le mot crise indique un état de malaise ou de souffrance" (p. 13), Juglar repeats (citing Overstone) that crises imply "des inconvénients sous quelques rapports", but are "à d'autre points de vue extrêmement salutaires et avantageuses" (p. 6): they are useful, and indeed a necessary premise to the beginning of the recovery (p. 6),

his intuition needed a more precise analytical setup. He woud have easily found the missing ingredient in the literature of the time: see **section 3.4.**

27 The medical metaphor also reappears in other of Juglar's late writings: "La crise commerciale, comme dans les maladies, est un moment critique à passer" (1900a, p. 641); les crises "ne son pas des accidents, un malaise fortuit impossible à prévoir, mais bien une véritable maladie parfaitement déterminée, qui survient à époques presque fixes et qui annonce toujours son arrivée" (Juglar and Des Essars 1989, p. 1355).

28 This (as we already had in the first edition: see section 2.1) is occasionally expressed in terms of a comparison of the public's habits as to savings and the use of capital, as mediated by credit (p. xix).

29 "Il est de l'essence même des affaires d'opérer à terme pour laisser à l'acheteur le temps de placer la marchandise" (Juglar 1889, p. 47); "la prospérité d'une nation dépend du développement des affaires, et [...] il n'y a pas d'affaires sans crédit" (p. 48). As a consequence, the more a country is advanced the more credit is widespread, and crises are therefore more intense: "On peut même dire que la gravité des crises est en rapport avec le développement de la richesse du pays" (p. 255)

30 On the abuses of credit as cause of crises see also Juglar 1900, p. 10.

31 Juglar used the expression "l'équilibre instable du marché" or "du crédit", with reference to the last phase of the prosperity when speculation prevails (1889, pp. 34, 165). Emphasis on instability recurs in several of Juglar's writings: crises "éclatent d'abord sur une place quand la situation est déjà très tendue, ébranlent et renversent cet équilibre instable, s'étendent sur tout le monde des affaires, puis se liquident dans les mêmes conditions pour reparaîte après avoir percuru le même cycle" (1882, p.5). "Cette prospérité repose sur une base essentiellement fragile" (Juglar and Des Essars 1889, p. 1349)

32 Juglar stresses that credit permits increasing demand, and thereby leads to raising prices. It is clear, however, that he is not referring to consumers' credits, but to credits for prodution. Yet Juglar does not seem to account for the increase in production this should entail, which should to some extent compensate for the increase in demand. Tugan-Baranowsky actually criticises Juglar for not having realised that if demand increases, so does supply: he inverts Juglar's perspective, asserting that it is not demand preceding supply, but the other way around (1913, pp. 243–4).

for they eliminate the excesses and bring back to equilibrium.[33] Contrary to the first edition, now Juglar offers a mechanism triggering the recovery: during the liquidation phase no investments are taking place; but some savings are still coming forward, seeking productive use and lowering the interest rate,[34] until the "esprit d'entreprise" is awakened again.[35] When there is request of capital, credit intervenes again, and the cycle can recommence. The explanation, however, still relies on the 'esprit d'entreprise', on the 'natural' (and unexplained) tendency to accumulate;[36] the accumulation of loanable funds only plays a subsidiary role.[37]

It should be noted that Juglar is more concerned with credit by traders rather than by banks, in the form of promises to pay (p. 57, 69, 71, 73); not only the *request* for such credit grows with increasing prices, but also the traders' willingness to accept promises as a form of payment, and both in turn further increase prices.[38] Having shifted the

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[33] "Les crises, malgré le malaise qu'elles occasionnent, malgré les pertes, les ruines même qui en sont la conséquence, ont au moins cet avantage de débarrasser le marché de tous les crédits douteux. […] tout ce qui avait déjà perdu son équilibre a succombé" (p. 46). Similarly, Juglar states that speculation develops "les éléments malsains qui doivent être balayés par la tempête" (p. 165), and that crises and liquidations "débarrassent le marché de tous ses éléments impurs, lui permettant de reprendre pied" (186).

In his later writings he insisted even more on the healing character of crises. In the dictionary entry written with Des Essars he described the crisis as a brake capable of channelling the frantic mouvement taking place in the prosperity (1889, p. 1349). In 1900 he wrote of "crises de progrès dans la production", referring to the necessary adaptation to the 'general progress of production' altering the customary proportions between supply and demand; he commented: "Au fond, ces crises aboutissent à un résultat bienfaisant, l'humanité sera mieux purvue et avec moind d'efforts de la généralité des objects dont elle a besoin; mais il y a une phase pénible d'adaptation à subir" (pp. 13–17). See also 1890a, pp. 648–9.

[34] Occasionally Juglar seems to throw out, almost parenthetically, reflections on the interest and discount rates, whose importance lies in the maintaining "en équilibre tout le système du crédit" (p. 138; see also pp. 126–7, 148, 170, 252, 271). These are not, however, really playing a part in his theory of the cycle except for the point discussed in the text and for a "golden break" deriving from foreign trade (Niehans 1992, p. 556). The question of how, in spite of this equilibrating force, credit can go out of hand, is not even asked At any rate, Juglar admits that a rise in the discount rate befor the situation degenerates could help preventing crises (1889, pp. 170–1); but this is all the more puzzling, as there is no discussion of how the equilibrating effect of interest interacts with the disequilibrating effect of credit (see, for some early reflections on this point by John Mills, **section 3.7** below). Nevertheless, Commons, McCracken and Zeuch highly evaluated this part of Juglar's contribution: "For the first time in the theory of cycles, the volume of credit becomes a dependent variable, depending on the one hand, on the transactions and expectations of business men and, on the other hand, on the state of the bank reserves, with its connecting link, the rate of discount, or 'value of money.' Out of this relationship of time value to exchange value Juglar develops his recurring cycle of prosperity, crisis, and depression. It is the introduction of the definite use of the discount rate to contract credit expansion and its inherent effect upon the movement of the price level that gives us the cleancut contribution of Juglar" (1922, p. 261)

[35] Juglar 1889, pp. 30–31, 21, 126. It may be noted that this mechanism is similar to the one later propounded by Tugan-Baranowsky (see Besomi 2006), although Tugan himself found it "très maladroit" (1913, p. 243).

[36] The point is also stressed by Niehans (1992, pp. 553–5) and by Bergmann (1895, pp. 256 and 257). Hutchison listed Juglar among the workers in the field of crises and cycles "sceptical or ignorant" of the theoretical developments in the analysis of normal equilibrium of prices, value, production and distribution (1953, p. 425).

[37] It is an asymmetrical role: while Juglar mentions (without, in truth, insisting particularly on the point) the role of the accumulation of unused capital during liquidation, he explicitly denies that scarcity of capital at the end of prosperity may play a role in causing the crisis (p. 138).

[38] This account of Juglar's revised edition is far from complete (his description of the credit mechanism, including its international implication on specie and other transaction, is copetely ignored here as not relevant for the topic of this essay. For a summary see e.g. Niehans 1992, pp. 555–8)

emphasis on prices, Juglar supplied a new definition of crisis: "la crise serait donc l'*arrêt* de la *hausse* des *prix*, c'est-à-dire le moment ou l'on ne *trouve* plus de *nouveaux preneurs*" (p. 14).[39]

An interesting feature of the second edition lies in the continuous confrontation with the doctrines of other authors on crises. This inaugurates a tradition that continues to-day, with many treatises on cycles expounding, for critical or contextualisaton purposes, the competing or the similar approaches.

On the second edition as compared to the first, Niehans commented that "the content was finally living up to the title", providing a massive treatise on business cycles while the previous version was just "a detailed chronicle of crises as reflected in bank balance sheets, with a few fragmentary statistics from other sources and very little economic analysis" (1992, pp. 549–50). The above summary suggests that this judgement does less than justice to the first edition, where after all there was already a description (albeit intuitive only) of the mechanism of crises resulting from the gradually increasing tension due to the abuses of credit triggered by speculation and eventually bringing to a liquidation, setting the premises for a new recovery thanks to the elimination of the previous excesses. Niehans perhaps credits too much to the second edition, where the mechanism of expansion is still dependant on an unexplained tendency to accumulate. At any rate, the second edition did something to fill the gap of the missing explanation of the trough of the cycle, thus providing a more satisfactory account of the complete process.

3. Crises and cycles at Juglar's time

Historical inquiries have already stessed that some of Juglar's proposition were not only anticipated by others but were even commonplace. Other aspects, however, have not yet been the subject of research. My aim is not to hunt for Juglar's forerunners, but to gather enough evidence on the diffusion, at his time, of a number of the ingredients that later were to constitute the core of business cycle approaches. Although this cannot claim to be a complete reconstruction of the context in which Juglar was operating (because it strictly remains within the field of the construction of economic theories of cycles and crises, leaving out for instance the political component of the debate—which would deserve a dedicated study—and its social implications), this step is necessary in order to

[39] After having stressed that prosperity is characterized by rising prices, that the crisis approaches when the increase slows down, and finally bursts out when the movement ceases altogether, in a dangerous passage Juglar adds: "En un mot, la principale, on pourrait dire l'unique cause des crises, c'est l'arrêt de la *hausse des prix*" (p. 33). Having defined crisis as the moment of stoppage of the raise of prices, Juglar is running in circles (thereby giving room to the criticism of Tugan-Baranowsky and Minnie England: see section 5.1), and is laying the premises for eliminating the now redundant notion of crisis altogether. He did not, however, take such a step (which came about two decades later at the hand of another Frenchman: s**ee section 4.2 and in particular footnote 85**).

assess the place of his contribution as a whole in the history of the transition from crises theories to cycle theories.

3.1. Statistics

One of Juglar's most distinctive features is the extensive use of historical and statistical analysis in connection with the cycle. Of this, there was only a precedent: Tooke's chronichle of prices (1823, 1838–57), on which Malthus commented that in the pursuit of his

> inquiry into the causes of the fluctuations which have occurred during the last thirty years in the prices of corn and other commodities, [Tooke] adduces a large and interesting collection of facts. This mode of considering his subject we consider as peculiarly judicious. At all times an extensive collection of facts relative to the interchange of the various commodities of the commercial world, which is more within the reach of intelligent merchants than any other class of men, cannot but be of great importance to the science of political economy; but it is more particularly required at the present moment, when it must be acknowledged that some of our ablest writers in this science have been deficient in that constant reference to facts and experience, on which alone it can be safely founded, or further improved" (Anonymous [Malthus], 1826, p. 214)

'Collections of facts' were indeed produced. Morier Evans published in 1859 a massive analysis of the 1857–58 crisis, which he compared to those having occurred from 1825. His volume includes a number of data of various kinds, especially balance sheets but aslo banking statistics, numbers of stores and of failures, prices, stocks, debts, production, etc., enabling him to observe that "Each separate panic has had its own distinctive features, but all have resembled each other in occurring immediately after a period of apparent prosperity, the hollowness of which it has exposed", and even to stress that the uniformity is so striking that whenever fortunes can be rapidly accumulated "otherwise than by the road of plodding industry" one can safely predict that a panic is at hand (1859, p. 1).[40] Max Wirth also produced a voluminous (over 470 pages, almost twice as much as Juglar's first edition) body of historical analysis of the crises ……… etc. **[to be completed —haven't seen the 1st edition yet]**. On top of these volumes, a number of authors citing brief series of data or (more rarely) draw diagrams.

These contributions, however, were scarcely useful. [**But: proviso about Wirth???????**]: as Niehans stressed, Tooke's data were assembled more as a chronicle rather that with a theoretical purpose. Evans's data needed to be further distilled if anything had to be done with them. **What about Wirth's ??????**

In this context, Juglar's data marked some progress, as they were subject to some statistical analysis (rudimentary as it was[41]) that could actually support some inductive process. In this, Juglas was soon followed by Jevons (who, being a far better statistician, was more influential than Juglar), and later Tugan, Bouniatian, Aftalion, Lescure,

[40] Evans's book counts over 200 pages of text and 250 pages of appendices, mainly consisting in balance sheets.

[41] On Juglar's statistical method see Pellissier 2000, pp. 274–76.

Robertson, and finally Mitchell (whose inductivist approach and specific statistical methodology to some extent resembles Juglar's: Niehans 1992, pp. 552–3 and Pellissier 2000, p. 275), to cite only the main contributors.

3.2. Periodicity, or the return of crises

Early recognitions of some regularity in the occurrence of crises, attempts to evaluate an average period, and the distinction of phases and their concatenation have been well studied in the literature. Juglar indeed appears in the first systematic study of the theories of crises, by Eugen von Bergmann, in the chapter on periodicity (1895, pp. 255–60).

The first identification of a cycle in production (albeit agricultural) seems to be due to William Petty, exactly two centuries before the publication of Juglar's book:

> Suppose a man could with his own hands plant a certain scope of Land with Corn, that is, could Digg, or Plough, Harrow, Weed, Reap, carry home, Thresh, and Winnow so much as the Husbandry of this Land requires; and had withal Seed wherewith to sowe the same, I say, that when this man has subducted his seed out of the proceed of his Harvest, and also what himself hath both eaten and given to others in exchange for Clothes and other Natural necessaries; that the Remainder of Corn is the natural and true Rent of the Land for that year; and that the medium of seven years, or rather of so many years as makes up the Cycle, within which Dearths and Plenties make their revolution, doth give the ordinary Rent of the Land in Corn (Petty 1662, cap. IV, §13, p. 43 Hull edition).

Although this may not seem relevant inthe context of industrial fluctuations, one must remember that a number of authors later took agricultural poduction as the starting point of their reflections (Briaune (1840), for instance, but also numerous French scholars at the time of Juglar's writing[42]). Indeed, this passage is doubly scored in Jevon's copy of Petty's book (Foxwell 1884, p. 361).

We may safely jump to the 1820s, remembering, however, that a number of authors in between reflected on the misfortunes of commerce and the havoc brought by speculative movements. In 1823, Thomas Tooke wrote of 'waves'[43] in prices, which however were attributed mainly to exogenous events: bad seasons, by causing price

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[42] On Briaune see **footnote 67**. On the 1847 crisis, among French authors see e.g. De Molinari (1847, p. 274) and Horace Say —who pointed out that "chacun le reconnaît" that crises had origin in the scarcity of crops (1847, p. 194). For a nice sample of authors attributing the main cause of the 1857 crisis to the agricultural factors (Lavergne, Bénard, Hippolite Dussard) see the proceedings of the meeting of 5 December 1857 of the Société d'Économie Politique.

[43] The oceanic metaphor frequently reappears in connection with cycles, for instance in Langton: "These disturbances [quarterly and seasonal fluctuations] are the accompaniment of another wave, which appears to have a decennial period, and in the generation of which, moral causes have no doubt an important share" (1858, p. 11). Mills, who cites Langton approvingly, specifies: "They are indeed 'waves', as distinguished from the current or tide" (1868, p. 13). Other early occurrences are cited by Miller: a speaker in the Massachussets House of Representatives attributed to "periodical revulsons, "occurring "about every three years" "as much reguarity as the billow from the ocean (Rantoul 1836, p. 14); Bafour commented on the "apparently tidal regularity" with which crises recur (1848, p. 477).

increases, encourage the development of credit which in turn feeds back on prices.[44] Later, in his *History of Prices* Tooke also incorporated endogenous elements, describing some phases (crises, in particular) as a reaction to the previous development.[45] By the end of the 1820s, descriptions of the alternation of prosperities, with rising prices and speculation, and depressions accompanied by falling prices, were already commonplace (Miller 1927, p. 193[46]). At this time we find the first attempts to estimate the period: an anonymous American reported in 1829 that "an opinion is entertained by many" that the average period of these "fluctuations" (the term is used several times) that "do take place, and […] always will take place in countries, where paper money has been extensively introduced" is about 14 years. In 1833, John Wade estimated that "The commercial cycle is ordinarily completed in five or seven years, within which terms it will be found, by reference to our commercial history during the last seventy years, alternate periods of prosperity and depression been experienced".[47] In 1838 Hyde Clarke was under the impression that cycles (this is the term he used), in nature and society, are subject to an elementary mathematical law (Clarke 1838; without, however, specific reference to economic cycles); he considered not only 10-years cycles, but also 54-years long waves, yet he did not actually publish these reflections until 1847 (see Collison Black 1992, Henderson 1992, and for early appreciations Jevons 1878 and Bergmann 1895, p. 239). In 1840 Briaune, in a pamphlet on *Des crises commerciales. De leur causes et de leur remèdes* (note the word in the plural) explicitly wrote about the "périodicité des crises commerciales" (p. 2), referring only to their return, without any reference to a more or less strict period. In 1848 Coquelin wrote that 'commercial perturbations' "have become in certain countries in some degree periodical" (Coquelin 1848, cited from the 1850 translation, p. 219; and Coquelin 1852, p. 528); Lawson wrote that examining the English panics "we shall find these periods of commercial distress regularly and periodically recurring in cycles of from five to seven years".[48] Within a couple of

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[44] Tooke 1823, Part I, section VII: "Explanation of the causes of extension and contraction of private paper and credit". For a discussion see Arnon 1991, pp. 74–77.

[45] Tooke 1838–57. For a discussion see Link 1959, pp. 127–147; for Schumpeter's appreciation of the endogenous character of Tooke's account see 1954, pp. 744–5. Precisely for this reason, Spiethoff considered Tooke as Juglar's predecessor: in Persons's summary, "Juglar's forerunner, says Spiethoff, was not Sismondi, Malthus, J.-B. Say, or Marx, but Thomas Tooke (1774-1858). In support of this view, Spiethoff says that Tooke (1) used expressions for commercial expansion, crisis, and depression, (2) placed these phenomena in the nineteenth century, describing their features, and (3) pointed out their cyclical character" (Spiethoff 1925, p. 61, cited in Persons 1926, p. 98).

[46] On the theories of crises in France among socialist writers (including some maintaining that they recur cyclically) see Marcy 1946.

[47] Wade 1833, 1834 edition p. 211. Schumpeter, noted that "Faulty and inconclusive though his reasoning is, it is of some interest as aprimitive instance of an endogenous dynamic model that reproduces alternation of depression and prosperity by virtue of a lagged relation between prices and consumption" (Schumpeter 1954, p. 743n).

[48] Lawson 1848, p. 2. Lawson added, anticipating Juglar, the observation that crises "are diseases which exhibit themselves only in a very civilized state of society, where trade and commerce flourish, where there is commercial enterprise and spirit; they occur in England, France, Holland, and the United States of

decades, most writers agreed on a period of about seven to 11 years, culminating of course in Jevons' claim that the phenomenon is strictly periodical (see section 4.1).[49] "Crises" and "panics" began to appear, in the plural, in the titles of articles and pamphlets (**Cite some? e.g., Chitti 1839, Briaune 1840, Coquelin 1848 [where he also added that panics recur almost periodically; the passage is taken up by Mills 1867, p. 14n, adding that the following 20 years enable to suppress Coquelin's 'presque'], 1849 and 1850, Société des économistes, 1857, Clément 1858, Bonnet 1859; Lawson 1848, Joplin 1854**), and some histories of crises were published (Bell 1850; Members of the New York Press 1857; Wirth 1858; Evans 1859).

As a certain frequency and regularity in the occurrence of crises was acknowledged, commentators started to recognise some common pattern: by the end of the 1850s it was common to agree that "Each separate panic has its own distinctive features, but all have resembled each other in occurring immediately after a period of apparent prosperity, the holowness of which it has exposed" (**source ?????**). Some authors went further, and attempted a characterization of the phases of the cycle. Lord Overstone's list of 10 phases is often cited:

> The history of what we are in the habit of calling the 'state of trade' is an instructive lesson. We find it subject to various conditions which are periodically returning; it revolves apparently in an established cycle. First, we find it in a state of quiescence,—next improvement,—growing confidence,—prosperity, —excitement,—overtrading,—convulsion,—pressure,—stagnation,—distress, —ending again in quiescence. (Overstone 1837, p. 31)

This account is quite illustrative of the "circular course" through which trade progresses, but Overstone did not even attempt to give these phases an analytical content. More suggestive is Longfield's representation in 10 phases of the "fluctuations of trade": a detailed description of the banks' discounts and their effects upon trade is illustrated with the ten phases (caution, confidence, liveliness, overtrading, great apparent prosperity, sudden cessation, paralysis, distrust, panic, bankruptcies) written in a circle, the period of which is said to be about five years. The account is not only descriptive: each stage of the process, although not easily reconducted to a specific phase in the list, witnessing the lack of analytical precision, is described in detail as following consequentially from the preceding one (Longfield 1840, pp. 222–3). Briaune boiled down the number of phases to three (crise, reprise des affaires,[50] développement commercial), but like Overstone he only used them in a descriptive way, without trying to specify an analytical content (1840, p. 13).

America; but I do not find any account of such in Spain or Portugal" (on the possibility that Juglar read Lawson's piece see **section 3.6**).

[49] Summaries of the main positions are given in Jevons (1878) 1884, pp. 222–4, and Miller 1927, pp. 192–3. The most detailed account is Bergmann's (1895, pp. 235–60).

[50] Such a division, in contrast to Juglar's, stresses the revival rather than the liquidation. The ingredients for a four-phases synthesis were thus already present.

Without referring to an elaborate classification of phases, James Wilson (1839) also propounded a semi-endogenous explanation of the alternation of high and low prices of agricultural products, in terms of a cobweb-like concatenation of states: low prices of agricultural products discourage production; the less fertile fields are abandoned, and after some time production actually diminishes. This determines a price rise, which induces to cultivate again the less fertile fields, and after a lag production increases.[51] The mechanism is not entirely endogenous as it is fed by the false expectations in prices created by changes in the corn laws. Later Wilson also suggested that these fluctuations extend to the whole productive system (1840; see Link 1956, pp. 103–26).

Seen in the context of these contributions, it is apparent that Juglar's emphasis on the succession of crises rather than on their singularity did not constitute a novelty, but is rather the product of the atmosphere of his time. True, the writers cited above are exceptions rather than the rule,[52] as most commentators, "in America as elsewhere, regarded a commercial crisis, not as a phase of a business cycle, but as the unhappy interruption of a normal trend of business that might have continued indefinitely had it not been for the unfortunate circumstances that brought on its collapse. Their observation of the cycle centered upon its most conspicuous phase—the crisis. Accordingly, the first attempts to explain crises sought the origin of each in some particular incident of the time. No general explanation common to all crises was offered; some writers explicitly denied that one could be formulated" (Miller 1927, p. 187).[53] But not only commentators were

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[51] A similar mechanism was suggested by McCulloch in 1826, to explain the fall of prices of corn for 1804 and 1812–13: "high prices […] attracted so much additional capital to the land, and occasioned such an extension of tillage, that we grew […] an adequate supply of corn for our own consumption. And it is certain, that, under such circumstances, the price of corn must inevitably have fallen" (in 1814 as a consequence of an abundant crop, in 1804 simply as a consequence of the application of new capital). McCulloch brings as "uniform and striking" evidence the fluctuations in the number of enclosure acts (Anonymous 1826, pp. 72–3).

[52] A nice example of disparate causes of crises advocated by Juglar's learned colleagues at the time he was beginning to write is the summary of a discussion having taken place in December 1857 at the Société d'Économie Politique: "M. Ch. Renouard, conseiller à la Court de Cassation, résume les principales causes de la crise: dans la disette, première cause indépendante des hommes;—dans la guerre, qui à occasionné des pertes directes et indirectes et jeté le trouble dans l'économie sociale; —dans le développement excessif des travaux publics; —dans l'esprit de spéculation qui, de sa nature, tend à aller toujours à l'extrême; —dans la situation morale du pays, qui abbandonnant beaucoup trop, il faut le dire, les nobles préoccupations des arts, des sciences, de la politique, des grandes idées, enfin, s'est beaucoup trop exclusivement jeté dans les préoccupations d'affaires, de joiussance physiques et de luxe" (Société d'Économie Politique 1857, p. 473).

[53] As the leading example of the attitude of those who rejected the possibility of finding a unifying explanation, Miller cites Roscher. An anonymous 'Political economist' writing to the editor of the *Economist* against the "Alleged commercial decades or cycles" (1864) indicates that such an interpretation was widespread. However, when the Commissioner of Labor inquired into into the causes of depressions, his agents reported, along with some of the usuals suspects, also a number of extravagant ones, such as the abolition of the apprentice system, the reckless legislation in Congress, depressions and mental diseases, too much and indiscriminate education, immorality, extravagant living. In his *Geschichte der Nationalökonomischen Krisentheorieen* (1895) Bergmann collected and classified in eight categories 230 different opinions on the origin and nature of crises (these were counted by Lescure: 1907, p. 13—who, however, in a later edition revised the total to 280—; also quoted by Robertson, 1915 p. 1). A further list of extravagant opinions is given by Wells 1889 (1991 ed., pp. 20–26).

increasingly aware that crises (or panics) come in ‘waves’, but started to look for a unifying explanation, one that tells of a coherent story of phases succeeding each other in the same order. The 10-phases classifications were certainly too clumsy, and Juglar’s three fases not only provide a welcome simplification and a morphological description closer to what was later found useful (Scumpeter 1954, p. 1124), but give (or, rather, attempt to give) an analytical specification to each phase. But by 1862 had only indicated that he intended to show how phases succeed one another; one of these transitions, however, was still left hanging in the air, and the other was only hinted at.

3.3. Credit, speculation, psycology, prices

All the analytical ingredients used by Juglar to explain how prosperities build up the premises to crises had extensively been advocated before him, albeit in different combinations. While the explanations Juglar rejected, based on mismanagement of the currency or on specificities of the banking system, were quite popular at the time (as witnessed by the debate between currency and banking schools, which echoed well beyond England), credit was one of the favorite culprits for a number of writers (and an accomplice even in the view of most participants in the debates on currency and banking). As aptly summarized by Miller in his study on banking theories in the U.S. before 1860,

> Credit was believed to play a threefold part in producing crises. First, it enabled men to ‘overtrade’ in periods where mutual confidence was high. Secondly, it formed a network of interrelations through which the insolvency of a few merchants embarrassed a great many others. […] Finally, some emphasized the fact that the use of credit instruments in normal times furnishes a substitute for money, so that, when in troublous times cash payments are insisted upon in lieu of credit formerly extended, the financial stringency becomes all the more acute (Miller 1927, pp. 189–90).

Miller supplies a number of references from American writers (to which Walker, in a discussion with Homer Stansfield, should be added: 1860), but it would be easy to list writers from other countries who held similar views **[list some? e.g. Garnier 1845, 1847, Coquelin 1852,** “credit” and “crises commerciales” (dict.), **1954 discussion in the *Journal des économists*, Courcelle-Seneuil 1858, Rey 1862, Bonnet 1865 for France; Tooke 1823 [Check! Pt I, sec. VII], Langton 1857, Williams 1857 (pp. 88 ff.) and 1858, MacLeod —with his emphasis on “misused credit [as] the cause of those terrible mercantile catastrophes which periodically sweep over the world”: 1863, p. 626— for England, Ferrara 1864 for Italy]**

Strictly related to credit are speculation and the psychology of the public, which were also often (but not exclusively) advocated in connection with credit. Credit permits speculation beyond one’s own means, and manias feed the process. Psychology was also called to play a part in the reversal of the movement, as indicated by the very word ‘panic’ used to indicate (and also characterize) the financial aspect of crises. Here again a few examples will suffice: Lawson cites a 1825 writer who described the causes of contemporary panic "in words which might be stereotyped as applicable to all similar occasions" (Lawson 1848, p. 3):

> In all these speculations, only a small instalment, seldom exceeding 5 per cent. was paid at first, so that a very moderate rise in the prices of the shares produced a large profit on the sum actually invested. This possibility of enormous profit, by risking a small sum, was a bait too tempting to be resisted; all the gambling propensities of human nature were constantly solicited into action; and crowds of individuals of every description—the credulous and the suspicious, the crafty and the bold, the raw and the experienced, the intelligent and the ignorant, princes, nobles, politicians, placemen, patriots, lawyers, physicians, divines, philosophers, poets, intermingled with women of all ranks and degrees, spinsters, wives, and widows, hastened to venture some of their to venture some of their property in schemes of which scarcely anything was known but the name. (**p. ????????**).

Credit and speculation figured prominently as the causes of the depression identified by the House of Lords secret committee on the causes of distress: "…those which are connected with the Extension of Commercial Speculation, encouraged or checked by the Facility, or the Difficulty, of obtaining Credit" (Secret Committee on Commercial Distress 1848a, p. iii). Emphasis on psychological contagion is found for instance in Tooke (**reference ???????**), Langton 1858, John Stuart Mill 1826, (*Essays*, p. 68, cited and discussed by Link 1959, p. 151), ……Longfield 1840. Authors stressing the role of speculation are, for instance, Tooke (for a discussion **see Link 1959, pp. 131, 133-5, 139-41, 145-7, 157), J. S.** Mill **(Link 1959, pp. 149, 53–69, 166–9, 171, 175, 177–8);** Wilson **(Link 1959, pp. 112, 114, 119–20, 124)**, **Ganilh 1826 (p. ???), Anonymous (Raguet) 1829 (p. ?????), Coquelin 1852 criss, Wilson 1859, C.S. 1860 (entry "Crises" in Garnier-Page's dictionary).** Emphasis on speculation must have been quite popular at the time, as Guthrie refers in 1864 that "The favourite doctrine of the *Times* and its followers is, that the mania for speculation is a disease to which human nature is subject, and which can be removed or alleviated only by moral appliances" (Guthrie 1864, p. 5).

Juglar's belated shift of emphasis on prices also was not a novelty.[54] Besides the already cited Tooke,[55] and a number of characterizations of the state of distress as one of low or falling prices,[56] by the 1880s we already had Jevons's statistical investigations, and a number of writings explicitly inquiring into the relationship of prices and fluctuations (for istance Giffen's "Trade Depression and Low Prices" (1885), an anonymous's "Depression of trade and prices of commodities" (1886), Leroy-Beaulieu's "La baisse des prix et la crise commerciale dans le monde" (1886), Foxwell's

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[54] As Niehans (1992, p. 552) conjectured, the relative ease of gathering statistics on prices rather than, e.g., production, surely favoured emphasising this factor (see **footnote 26** above). One, however, should remember that a number of equilibrating mechanisms in Classical economics (and, later, also neoclassical economics) were based on prices (whether of goods or of capital), and there was therefore also a theoretical interest in examining this factor.

[55] We also have to mention the explicit reference to "The connection of the Currency with Prices" in Tooke 1844.

[56] See e.g. Horsley Palmer's testimony before the Secret Committee on Commercial Distress (1848).

Irregularity of employment and fluctuations of prices (1886), Marshall's "Remedies for fluctuations of general prices" (1887), Wasserrab's *Preise und Krisen* (1889)[57]). Although a number of reflections on prices took as a starting point their relationship to the quantity of money, suggestions as to the link between prices, credit and speculation could easily be found in the literature: Cobden, for instance, prefacing Chevalier's argument, wrote that "The tendency to a general rise of prices would lead to an expansion of credit, and an increase of speculation, which would be followed by panics and convulsions" (Cobden 1859, p. x; Juglar might have been aware of this passage: see **footnote 76**)

The ingredients of Juglar's account of the cycle were thus not new at the time of his writing, and actually were rather commonplace. This, itself, is not to deny the originality of Juglar's specific combination of these elements, an assessment of which would be beyond the purpose of this paper, but only to point out that Juglar's later fame cannot have depended on the analytical components of his theory of crises.

3.4. The medical metaphor: instability and the mysterious tendency to self-adjustment

The use of medical metaphores to describe crises was quite widespread before and after the time of Juglar's writings, and the citation of a few instances may suffice. Apart from the unspecific references to one or another cause of crises as "a canker", "an internal ulcer" (Cory 1842, p. 3), as a "maladie" (Chevalier, before the Société d'Économie Politique, 1854, p. 430) or to the various occurrences of panics as a "melancholy list" (Evans 1859, p. 1), two at least were the connotations with which crises were compared to diseases. One related to the spreading and amplifying of disturbances. Longfield, for instance, wrote that the crisis "is like an epidemic [...], like the plague, or any other infectitious disease which may cease of itself" (1840, p. 222); similarly, Condy Raguet began an article on the "Principles of banking" with the following word: "When a community is in the full enjoyment of health, few persons are to be found willing to listen to the warning of the cautious; and it is not until the destroying epidemics appears, and when relief would come almost too late, that the public mind is in a state capable of receiving the truths, a previous acquaintance with which might have saved them from disease. What is true of physical evils, is equally true of the moral evils" (1829, p. 1). Similarly Guthrie: "Physicians seek, with more or less success, to explain the recurrence of epidemics; and shall economists despair of accounting for the periodicity of this widespread frenzy?" (1864, p. 6). In such a usage, the emphasis is on the contagious character of crises. Although Juglar did not use this specific analogy in the first edition, while there is only a passing remark in the second ("cette spéculation est contagieuse": 1889, p. 166), it is interesting to record such occurrences in the literature for they indicates a belief that crises are the result of some kind of instability. Other analogies, of course,

[57] For a survey, taking however Juglar as a starting point, see William 1919.

could and did do equally well, such as the suggestive “down go prices like an avalanche” (Williams 1857, p. 55).

The second connotation of the medical analogy is the comparison of crises to a disease, intended as an anomaly in the normal development of the economic system. We find it for instance in Say who, after listing “wars, embargoes, oppressive duties, the dangers and difficulties of transportation”, social unreast, increasing uncertainty, arbitrary exactions, jobbing and speculation as causes of obstruction to circulation, added: “No sooner is the cause of this political disease removed, than the means of production feel a natural impulse towards the vacant channels, the replenishment of which restores activity to all the others. One kind of production would seldom out-strip every other, and its products be disproportionately cheapened, were production left entirely free”(Say 1803, cited from the 1880 translation of the 4th edition, Book 1, Chs. 15 and 16). J. A. Lawson wrote of commercial panics as “diseases to which the body politic is subject—not chronic diseases, but epidemics as regular in their recurrence as influenza itself, though only at longer intervals”, and contrasted the regular natural function to the effects of “some interference either from the government or ourselves deranged the usual course of things” (1848, p. 2). Briaune opened his pamphlet remarking that “Le corps social est, comme le corps humain, sujet à des maladies dont les unes tiennent à des accidents extérieurs et n’apportent qu’un trouble momentané dans les fonctions vitales, tandis que le autres, causés par des vices organiques et passant à l’état chronique, influent sur la constitution et sur le développement des individues et des societés” (Briaune 1840, p. 1), commercial crises being of the second sort. This kind of references to diseases clearly contrasts the natural and healthy state of the system to the nefast consequences of some disturbance, whether internal or external: the disease *is* the trouble.

The medical doctor in Juglar emerges again here: he—following his Paris mentors, as rightly pointed out by Frobert and Hamouda (2005)—interpreted the disease not as the material of functional damage, but rather as the *consequence* of such a damage.[58] While in the conception of Say, Briaune and Lawson the emphasis is on the *lack* of health, revealing a purely negative conception of crisis as a derangement of the natural state of the system, in Juglar there is also a positive connotation: the crisis and the subsequent liquidation pla a specific role in the elimination of the excesses and abuses that give rise to the disease. Their role, like that of a disease, is to bring back to the equilibrium: driven by an unspecified self-rightening tendency (the consequence of the absence of specification is the lack of an explanation of the trough of the cycle, especially in the first edition of Juglar’s book), similar to the “force médicatrice de la nature”, the crisis is

> une réaction salutaire de l’économie opposée à la maladie et en lutte contre ses mauvais résultats. Cette puissance qu’on désigne sous le nom de force

[58] “La maladie n’est pas la lésion elle-même, elle est plutôt la suite, le retentissement vital de cette lésion” (Hardy 1849, p. 388).

> médicatrice de la nature, est, comme l'antidote, à côté du poison; elle tend sans cesse à rétablir le calme et l'équilibre dans l'organisation. (Hardy 1849, p. 389)

Here is the sense of De Foville's recollection, according to which Juglar "is the only person I have ever heard praise the benefits of fever, and he once did it with such poetic eloquence that the passers-by stood still to listen" (1905, p. 293).

In this field, Juglar was better equipped that most other users of medical metaphores. While generally the analogy with a disease is only meant to emphasise that something wrong is going on in the economic system, preventing it from working normally, in the case of Juglar the metaphor is likely to have played a heuristic role, as pointed out by Frobert and Hamouda (2005). This is not an isolated case: sometimes metaphores are only used to illustrate an argument, but often they help transferring a way of thinking from one domain to another. The history of business cycle theory offers other examples, such as the waves of the ocean (suggesting gravitation around a 'mean sun')[59] or the pendulum—the metaphor that eventually displaced references to the physiology of the system to emphasise its mechanics:[60] the choice of the analogon, whether for illustrative purposes or as a heuristic device, is never neutral.

3.5. Crises and progress

Juglar's idea that crises as painful but inevitable and necessary to growth was also not new at the time he formulated it. It was clearly expounded for instance in Garnier's enty on "Commercial crises" in the *Dictionnaire universel théorique et pratique du commerce et de la navigation*. He maintained that commercial crises are inevitable, "tiennent à la nature des choses" rather than being due to exogenous factors, but are temporary and necessary to permit growth, being the outcome of the "overexcitement of entrepreneurial spirit":

> Elles son inévitables; mais les inconvéniences ne peuvent, è beaucoup près, balancer les immenses avantages que leur peuples retirent des développements immenses de leur affaires. Les crises de cette nature [les crises commerciales] son des crises de croissance; et mieux vaut l'activité et la richesseavec les crises commerciales (celles-ci dussent-elle être dans la nature permanente des choses) que l'inaction et la pauvreté. Les pays riches et prospères sont quelque fois en crise; les pays peuvres y son d'une manière permanente.
>
> Au surplus, les crises commerciales sont passagères de leur nature. Les baisses soudaines dans la valeur des choses amènent des achteurs, facilites la consommation, font cesser l'engorgement et provoquent la liquidation des affaires mal engagés. Dans ces évolutions, les producteurs ou les détenteurs de marchandises ont perdu; mais les acheteurs ou détenteurs de capitaux circulant ont gagné; certain fortunes particulières ont été détruites, d'autres se sont élevées; il y a eu des souffrances individuelles, mais, au point de vue social, il n'y a pas le même appauvrissement, et l'inconvénient de la crise est racheté par la disparition des entreprises véreuses. C'est ainsi qu'après un temps assez limité on voit souvent, après la crise, les affaires reprendre avec plus de vigueur et plus d'activité que jamais. (Garnier 1859, p. 925).

[59] See **footnote 43**.

[60] More on this transition in **section 4.2** below.

R. Hare, in “an effort to refute the opinion, that no addition is made to the capital of a community by banking”, admitted that “the facility of getting credit, by multiplying purchasers”, may contribute towards “great elevations and depressions in the rices of real estate”, making people “alternatively rich or poor, according as greater or less confidence exists with respect to our national prosperity, and the consequent prospective demand for farms, plantations, or building lots, increases or diminished”. But maintained that

> Judging from experience, it may be a question whether the ultimate, or average accumulation of national wealth, is less in consequence of the fluctuations of prices to which I have alluded. Such fluctuations rouse men to extraordinary exertion, and by a reaction after each subsidling wave, cause business to revive with a renovated and accumulated force. It is in consequence of the stimulus and reaction which accompany or follow great catastrophes, such as are produced by floods or fires, that after a few years, communities which have been subjected to them, will appear to have made advance even greater than might have been anticipated, had no such deteriorating accident occurred (Hare 1852, pp. 705–6).[61]

This view was not isolated. In 1864 Ferrara pointed out that the linkage between credit and crises induced many (“quest’ultima opinione è oggi assai divulgata”), “enamored with the industrial miracles credit permits to make real”, to accept crises as the price of growth. Besides Garnier’s entry, he also referred to Coquelin (without giving a precise reference), and explicitly interpreted Juglar’s statement that the return of crises is a condition of progress in industry as belonging to this tradition (Ferrara 1864, p. 274).[62] Juglar himself referred to Overstone in this respect (1889, p. 6; see **section 2.2**).

3.6. Proximate causes and *vera causa* of crises

Although Juglar’s distinction between ‘determining’ or ‘occasional’ cause and ‘predisposition’ was rooted in the medical approach with which he became acquainted in Paris, an analogous distinction using different terms was available on the other side of the Channel, and it is not surprising that some authors applied it to the return of crises precisely in the same way as Juglar did, that is, both for its methodological implications and as a rethorical device.

The main idea is clearly outlined in the opening passages of a pamphlet by Isaac Preston Cory:

> A variety of causes has been assigned to account for this depression, and as many remedies have been proposed to obviate it. The national debt, taxation, the currency, the unlimited power of the Bank of England over its issue, the excess of population, the corn laws, the oppressions of the millowners, have each

[61] According to Schumpeter, Hare “was one of the earliest of the few writers who attributed to cycles the function of speeding up economic advance” (Schumpeter 1854, p. 743n). Schumpeter’s opinion on the scarcity of such writers contrasts with Ferrara’s.

[62] Ferrara referred to Juglar rather diminishingly, but recognising the impact of his book, as “uno scrittore, autore di un’operetta che molto eccitò l’attenzione degli Economisti e scritta di proposito per provare con ricca copia di cifre la periodicità delle crisi, le chiama soventi, in un linguaggio che mi permetterò di trovare un poco troppo cinico, semplici *liquidazioni*; ed il loro frequente ritorno sarebbe, secondo lui, “una delle condizioni, a cui è vincolato il progrsso della grande industria” (1864, p. 274).

their advocates, who would fain persuade us, that an alteration of some one or more of these would give relief and restore prosperity.

It is not my intention to deny, that each and every one of them have their effect, and may, in some degree, influence the state of trade: but in the following pages I propose to avoid, as much as possible, the discussion of any of these subjects which have been worn threadbare, and upon which every one has made up his mind; while I would direct attention to what I humbly conceive to be a preliminary evil, much more extensive than all of them put together—a canker in the very heart of our trading prosperity, which is ever and anon producing the same recurrences of distress—temporary they may seem, but which, I fear, are rather of a periodical nature, like the returns of the shivering fits which precede the dissolution of the body by an internal ulcer. (Cory 1842, p. 3)

Cory is thus advocating a common premise to all crises, more fundamental than the various circumstances that may intervene and are capable of altering the course of the panic but canot be deemed to be ultimately responsible for them.

A terminologically more accurate exposition is found in a paper "on Commercial Panics" read by James Anthony Lawson before the Dublin Statistical Society (of which he was the Secretary at the time), printed as a pamphlet by the Society (Lawson 1848), and reprinted in the *Bankers' Magazine* (1848a) and in *Hunt's Merchants' Magazine* (1848b) —this magazine, interestingly enough, is one of the few sources cited by Juglar in his 1863 Dictionary entry (this, however, does not necessarily mean Juglar had read the article, as the magazine had published a number of pieces on crises and panics). Lawson was stuck by the fact that the alleged causes of a number of the panics (of which, as cited above, he recognized the periodicity and interconnectedness) could not have been large enough to explain the havoc wrought by the panic themselves: "for instance, the braking out of the war in 1793, that alone never could have occasioned commercial embarrassment if commercial affairs had been in a sound state up to that time—it might have limited the future operations of trade, or checked its advance, but it could not entail the universal ruin which ensued". He concluded:

We must therefore look beyond the proximate cause or the occasion of the panic to find its true cause; and I think from the details I have given you, you will be prepared to anticipate the conclusion to which I have arrived, namely, that it is not attributed to a sudden check *given to an extensive and long continued trade upon credit*—this check may proceed from the various causes which we have seen gave occasion to the panic, or by any other circumstances which cause a revulsion in the public mind, or cause a disinclination to continue to give credit; and it will be found that when the system of credit on credit has been extensively pursued, a very slight obstacle is sufficient to overturn the entire system (Lawson 1848b, p. 284).

Lawson's distinction between 'proximate cause' and 'true cause' is thus used to distinguish between a cause common to all events and the occasional circumstances that actually give rise to the panic; this, however —as was the case for Juglar— is prepared by the *vera causa* having generated enough instability in the system so that a small event can give rise to disproportionate effects. Lawson also argues (the passage, however, does not appear in 1848a and 1848b) that "If we have any faith in the truth or certainty of science, we must feel fully persuaded that the truths are of universal application; that they cannot be true at one moment and false at the next; that they are not to be taken up in smooth seasons, and laid aside in rough ones", in order to reject the "fallacy of [the] reasoning" involved in all the explanations of panics advocating the extraordinary nature of the case and thus blaming some exception to the ordinary rules (1848, p. 1).[63]

Both issues were taken up, and discussed at much more depth, by John Mills, a Manchester banker, in a paper read in December 1867 before the Manchester Statistical Society —which published it in its Transactions: Mills 1868— a few years after the publication of Juglar's first edition. Mills cites Langton, Jevons, Coquelin, J. St. Mill and Tooke's and Newmarch history of prices, but neither Juglar or Lawson.[64] Mills begins his argument by discussing the variegated literature of pamphlets florising after each crisis and discussing their causes:

> One feature these productions have in common: they deal with proximate causes only, or with mere antecedents as causes; each crisis appearing to be the result of its own separate accident,—usually some event lying on the surface of commercial history. The highest attempt at generalization does not ascend beyond the fact—unquestionable in itself—that over-trading, in some form or other, is the common forerunner of Panic. Overtrading, however, is not an ultimate fact, and its regular recurrence claim explanations quite as importantly as the tragic events which follow it. (Mills 1868, p. 11).

Mills explains that he intends to apply "the method by which modern science brings physical and even social phenomena within the region of causation and law", which requires to identify the "uniformities of sequence"from which to generalize (p. 12). The first of such uniformities is that crises are so "numerous, regular, and persistent" that "whatever we may at present think of its cause, of its practical importance, or of its probable continuance, the periodicity of commercial crisis is at any rate *a fact*" (1868, p. 14). This enables Mills to exclude that the proximate causes can be at the origin of the

[63] Lawson also stressed a few other elements later to be found in Juglar's writings: his emphasis upon periodicity, credit, speculation and psychological causes have already been pointed out **in sections 3.2 and 3.3** above; to this it should be added that the mechanism which he envisaged —following Tooke—to explain the explosion of credit worked through prices: the scarcity of most articles gives rise to speculation, which brings price rises, thereby inducing the creation of the most extravagant enterprises (1848b, p. 282); he also stressed that credit is not necessarily banking credit, but credit traders raise to each other, and even concluded with an analogy anticipating the passage from Juglar 1862, p. 14, cited in section 2.1: "when the prices begin to rise under its [the spirit of speculation's] influence, the early purchasers are sure to realize a profit, they sell to another who sells again, producing additional rise of price, and so the torch, passed from hand to hand, is sure to burn the last holder" (1848b, p. 285). Finally, like Juglar (1862, p. iv) he rejected the theories blaming crises upon the banking system, observing that banks are victims of the crises, compelled to act as they do, not their originators (1848, p. 7; incidentally, such statements could be found in France as well. Chevalier, for instance, is reported having said before a meeting of the Société d'Économie Politique in 1854 that "ce ne sont pas les Banques qui provoquent le mouvement; elles le suivent" —Société d'Économie Politique 1854, p. 429).

[64] Mill's paper had a follow-up, as it was taken up by Jevons (see Peart 1996 for a discussion), fully discussed by Bergmann and cited for instance by Pigou (1927), Hutchison (1953) and Schumpeter (1954), and recently reprinted (in Hagemann 2002).

"facts of a new order"[65]: panics recurred with regularity even if the institutional conditions under which trade takes place have considerably changed in the previous sixty years[66] and in spite of the immediate antecedents being bewilderingly varied in nature (pp. 14–15). Although some of the antecedents "in a subordinate sense […] may indeed have assigned to them the dignity of causes", "it is evident that these incidental causes do not account for the feature we have noted as *common to the whole series*, that of regularity of occurrence". Mill even noted that some events, grave in character, have occurred without culminating in a Panic, or only slightly anticipating it with respect to the customary decennial rythm, "showing how little the the action of the normal causes of Panic could be accelerated by so vast an addition of external force" (p. 15). Not only this argument echoes Juglar's claim that even a war would not break a prosperity if no abuses of credit had previously predisposed the crisis, but goes one step further, by qualifying the proximate cause in question as an 'external event' or "incidental disturbances" (p. 18), thus coming close to introducing the distinction between exogenous and endogenous causes.

Mills's argument is slighly different in intension from Juglar's. While the latter was trying to identify the *vera causa* common to *each* crisis, Mills aimed at singling out the cause of the cycle *as a whole*. But the distinction between proximate and primary cause plays the same rôle in their criticisms to *individual* expanations of crises by appeal to general epistemic principles. Both authors linked this argument to the idea that if conditions are not fulfilled (the condition being the same for both authors: in Mills's words, "exaggeration of healthy functional action", "diseased overgrowth of credit", intervening gradually but eventually inducing the 'degeneration' of the stable 'healthy confidence' of the prosperity "into the disase of too facile a faith" in the highly speculative and unstable time preceding the panic —Mills 1868, pp. 27 and 36) grave events, that would otherwise determine a crisis, would be ineffective; and conversely, that at the right time a small determining cause could trigger a panic (e.g., p. 38).

The need of rejecting individual explanation of crises emphasising in their stead a common explanation was, naturally enough, a logical necessity for all authors who were suggesting that the phenomenon to be examined is not crisis as a singular event, but were recognizing inthe succession of crises an altogether new phenomnon. Not surprisingly, other kinds of arguments were developed. An early one is due to Briaune, who seems to have initiated the strategy of mocking the adversaries and bringing home a methodological point at the same time. One of the points of view to be rejected was the ascription of crises

[65] Mills 1868, p. 13. This expression is quite interesting, as it clearly defines the cycle as a new phenomenon, to be explained in itself ("dictating the search of cause at a deeper level": p. 13) and not as the result of a mere sequence of crises.

[66] This is the argument Juglar invoked to refute the explanations of crises blaming the banking system: **see Juglar ………… already 1862, or only 1889?**

to ‘political causes’, which was qualified as “préjugés populaires”. In Briaune’s view, the political and institutional setting can only be a secondary cause (“pas immédiate”), making things worse or better (“cause preservatrice ou aggravante”), while the fundamental cause must be sought elsewhere, for the similarity of the effects calls for a common cause for all events. The negative part of the argument consists in a long list of political causes that would have produced precisely the opposite effect as the one actually observed: for instance, “il faudrait prétendre que la prospérité de 1820 à 1827 été due au changement de la loi des élections, à la suspension de la liberté de la presse, à celle de la liberté individuelle; aux émeutes des écoles, aux conspirations de Paris, de Saumur, de Bedfort, de la Rochelle, qui en on été la conséquence; à la guerre d’Espagne, aux lois de l’indemnité, du droit d’ainesse, di sacrilège, qui en ont été la suite et le complément”. The other point of view to be rejected was the ascription of the last crisis to an excess of production, or to credit, or to stock market speculation. Criticising these views, Briaune expounds the positive principle that should guide the reflection on the causes of crises:

> si ces causes sont les véritables, elles doivent avoir influé sur les crises de 1811, de 1817, de 1827: car ce retour périodique d’un même mal entraîne nécessairement l’existence de causes identiques et permanentes. Or personne n’oserait assigner à ces crises antérieures la prétendue origine de la crise actuelle; et c’est déjà quelque chose de peu logique que d’attribuer des effets pareils, et dont la liaison est évidente, à des accidents toujours différents. Contre le principe général qui recherche une même cause dans une série de même effets, il faudrait apporter des preuves irrécusables, et ces preuves sont encore à donner.[67]

3.7. Equilibrium

Not only Juglar’s statements must be discussed, but also at least one of his omissions. Among the problems Juglar failed to be aware of, the most important is the failure to discuss the equilibrium conditions. Its relevance is twofold. Historically, one of the main theoretical problems to be solved in studies on crises and cycles has been the relationship of economic distress to equilibrium. It was generally accepted, from the gluts debate at least to interwar years, that crises are disequilibrium situations, and one had to reconcile this fact with theoretical approaches describing economic systems as tending towards equilibrium. The mainstream approaches have tried to interpret cycles and crises as partial and temporary exceptions to the theoretical norm, due to frictions, exogenous events, miscalculations, mismanagement or some other impediment or accident. The critics, on the contrary, rejected the idea that the system is self-equilibrating and either introduced some form of systematic instability or suggested to switch altogether to a different theoretical set-up (e.g., a dynamic one).[68] At Juglar’s time, the debate concerned

[67] Briaune 1840, pp. 3–4. The common premise Briaune identified was a sudden halt in consumption, the cause of which he thought to be the periodical increase in the price of cereals, which its workers first, diminishing their consumption of other goods, then “le mal s’augmente dans une proportion géométrique” by spreading to other branches of trade due to the solidarity of commerce (pp. 5–13).

[68] For a discussion see Besomi (in preparation).

the validity of Say's Law: those who accepted it only conceived of partial overproductions, interpreted as accidental and temporary sectorial maladjustments that solve on their own, while the critics either rejected the law altogether, or tried to imagine some exceptions to its working.[69] It may appear odd that Juglar never referred to Say's Law, but in reality this is consistent with Juglar's omission to tackle the equilibrium problem.

The second reason why this omission is important regards the logic itself of Juglar's argument: falting a discussion of the characterizations and the properties of equilibrium, Juglar could only assume as a matter of course—but in reality leaving unexplained—the transition from liquidation to recovery. Needless to say, this is a major gap in the construction of a theory on the cycle. Such a step, of course, was not easy at the time of Juglar's writing: for a rigorous formulation we have to wait for Marx's schemes of expanded reproduction. Juglar, however, did not even realise that such a step was necessary to the task he set himself of accounting for the succession of states. James Wilson, is spite of not having been able to solve the problem, clearly saw this was a necessary step to be taken:

> In order to go into the investigation proposed, it is obvious that we must discover, that we must condescend to some given sum which, could it be maintained steadily, would be the correct amount of the means of the country absorbed for this particular purpose annually, namely, the purchase of wheat (Wilson 1840, p. 19).[70]

Wilson admitted he knew of no principle to determine this point, and as a first approximation he took the average price of corn, in analogy with the symmetrical movement of a pendulum fluctuating around it middle point. He took, however, as its starting point, by imagining a given distribution of the capital of the country among various sectors bearing "the exactly proper proportion of to each other to supply the wants of the community" (p. 21), and examined the consequences of a shortage of wheat throughout the system.[71]

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[69] As it was immediately clear that Say's law presupposes a barter-like system, with money only acting as an intermediary in the exchanges, quite naturally a number of authors attributed violations of Say's Law to some or other peculiarity of the working of the monetary system—from the currency issues to the working of the banking system, from credit to the abolition of £1 notes (see e.g. Glasner 1989, pp. 219–21. **More & better references ?????????**). This explains the emphasis of most early crisis theorists on this kind of issues, while focus on real causes remained minoritarian—although, of corse, there were approaches based, for instance, on underconsumption or focusing on the provision of capital.

[70] Precedents of the awareness of the relation of crises to a breach in equilibrium, must not be rare. The following anonymous author, for instance, so described in 1816 the premises of the "present embarrassments": "The ordinary channels through which the various produce of art and industry was formerly distributed, are completely abstructed; the natural communication between the producer and consumer is interrupted; the supply by the former is not adjusted either in kind or proportion to the demands of the latter; and the dissolution of a connexion, which the prosperity of the national trade and manufactures requires to be steadily maintained, carries with it, too surely, their decay" (Anonymous 1816, p. 373).

[71] For a discussion of Wilson's work on fluctuations see Link 1959 (on this issue, see in particular pp. 108–14).

More elaborate is John Mills's argument. While Juglar swiftly avoided discussing the relationship of cycles and equilibrium, Mills precisely saw that there lied the main theoretical problem. Mills, as well as Juglar, considered prosperity the 'healthiest' phase of the cycle (1868, p. 24) and attributed to credit a "normal tendency to grow" (p. 32) and a "normal rate of growth". Mills also left this tendency unexplained, assumed as a matter of fact. But specified that credit "can only grow under the stringent condition of paying a discount proportioned to the degree in which growth outruns the supply of loan capital" (p. 32). Credit has thus a price, and this price is subject to the "economic law of supply and demand", "tending to preserve the necessary equilibrium" between credit and capital. "I say 'the necessary equilibrium' because, in fact, Credit cannot long exist without it. Belief is founded upon evidence, and must be kept in contact with it" (p. 31). The growth of credit is thus kept in check by the stabilizing forces acing upon the rate of interest; yet it is also subject to the destabilizing effect of speculation fostered by excesses of confidence (p. 27 and passim). Instability is thus limited by the stabilizing force (which sums its effects[72] to, and "applies an effective break to[,] the dangerous velocity with which a too facile Credit would multiply transactions" and "tends to preserve the natural and [...] that vitally important equipoise between the growth of bill-making Credit, and the supply of Capital from accumulated profits and savings": p. 32). But in the speculative stage of the cycle, credit

> grows under such stimulating conditions, that any weighting of *that* side of the scale is quite out of question. The time comes too soon when our two laws, while they continue to be correlative, tend to become less and less *coefficient*. The adjusting principle is still at work, but under the influences now gathering, it becomes by degrees overborne, and at last overwhelmed. The Credit end of the beam is too far depressed to be raised again until lightened of its load by a volent process. As this, however, is owing to the relative default of Capital, it is clear that no amount of paper promises, *now* placed in the opposite scale, would redress the balance (p. 35).

In such conditions, the set of psychological factors affecting credit "either neutralises the economic law of demand, or, reversing the poles of the magnet, it exerts a repellant instead of an attractive influence" (p. 34). After the panic, the law of supply and demand cannot immediately exert its effect for, while gold and notes (after some caution on the part of lenders) flow back into the bank, borrowers do not find motive to invest, in spite of being "tempted by a low rate of interest", due to the restrictions in purchasing power (and therefore in demand) felt by most people as an effect of the crisis (pp. 20–22). But slowly confidence will return, and will find good conditions in the "great accumulation of unused Capital and the ruling of an excessively low rate of interest" that established in the post-panic period, and bring back to the normal time of revival, where credit continues to grow in an healthy fashion, kept in check by the law of supply and demand (pp. 22–24).

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72 "We have, in fact, one of thoose cases to which the axiom of Mr. Mill is applicable,—'the joint effect of causes is the sum of their separate effects'" (Mills 1868, p. 32).

The contrast with Juglar is striking. Mills has clearly understood that the problem of crises cannot be severed from reflections on their relationship to equilibrium. In Juglar, by contrast, we only find the assumption that, by simple elimination of the excesses, the crisis will bring the system back to a state of stable (momentarily, at least) equilibrium. Juglar did not feel the need to discuss why such an equilibrium acts as an attractor to the system, while most of his contemporaries were discussing the aspects of this problem in the context of Say's law and later the problem was cleary perceived to be at the heart of trade cycle theorizing.

4. Crises and cycles after Juglar

A few decades after Juglar's first edition, towards the turn of the Century, business cycle theories saw an exponential outburst, culminating in the flowering of theories, models or at least reflections produced in the interwar years by almost anyone who counted anything in economics. This development has been far from linear, with ideas being discarded but continually returning, formulated in new ways and in new contexts. It is thus not possible to reconstruct a simple line of evolution, departing from someone's ideas and leading somewhere else. Yet a few basic trends can be discerned, related to some of the issues raised by Juglar, nevertheless often admitting counterexamples. The discussion in this section is therefore on quite a general level, and only aims at pointing out the main paths of development of the attempted solutions of the business cycle problem.

4.1. Periodicity

Already at Juglar's time a number of commentators were aware that crises return with some regularity (section 3.2), and as evidence cumulated the belief spread wider. This is not to say that everybody accepted the idea of more or less periodical crises: some kept arguing (up to the 1930s, and with renovated vigour in the 1960s) that crises are essentially unrelated phenomena triggered by some external event; Juglar himself reported, in his second edition, that his claims on periodicity were subject to criticism—without, however, specifying by whom (1889, p. 3). By the 1920s, however, most authors would have subscribed to the cyclicity of economic systems, with an emphasis on the return of phases in the same relative order and admitting that the period is not strictly respected and can be affected by various events.

Some authors, however, went further than Juglar and most of their contemporaries and successors, and claimed that cycles are strictly periodical. The experience of the crises occurred in 1815, 1825, 1836–39, 1847, 1857, 1866, 1878 (Jevons 1878b, p. 231) seemed to suggest a fairly precise decennial period, and to some authors the problem of the recurring of crises presented the additional issue of explaining the causes of the regularity in the period. Among these authors Jevons is of particular interest, as he was a contemporary of Juglar, as Juglar commented precisely on this aspect of Jevons's work, and as their opposite stands were for a while contrasted in the literature (see section 5.1).

Jevons accepted Mills's psychological explanation of the cycle stressing, however, that although he recognized the regularity of fluctuations Mills did not explain their period. His well-known (and widely ridiculed, although not unfounded in the contemporary literature on agricultural cycles[73]) theory based on the recurrence of sunspots was precisely an attempt to solve this problem:[74]

> It is a well-known principle of mechanics that the effects of a periodically varying cause are themselves periodic, and usually go through their phases in periods of time equal to those of their cause (Jevons [1875], in 1884, p. 194).[75]
>
> When we know that there is a cause, the variation of the solar activity, which is just of the nature to affect the produce of agriculture, and which does vary in the same period, it becomes almost certain that the two series of phenomena, credit cycles and solar variations, are connected as effect and cause (Jevons 1878a, in 1884, p. 216).
>
> Taken altogether, the historical facts concerning the periodic recurrence of crises appear to me too strong to admit of doubt, and it is only the nature of the explanation of that recurrence which is a matter of speculation (Jevons 1878a, in 1884, p. 219).

Juglar contested Jevons's (and Cobden's[76]) excessive faith in strict periodicity:[77] "les crises ne se reproduisent pas à des époques fixes" (1889, p. 163). He also implicitly

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[73] A list of titles would suffice to prove this point: "Relation of sun spots to the wine crop" (*Harper's New Monthly Magazine* 45, June–November 1872), "Relation of the barometer to the aurora and sun-spots" (*Harper's New Monthly Magazine* 46, December 1872-May 1873), "Sun-spots and rainfall" (*Atlantic Monthly* 31, 1873), "The effect of sun spots on climate" (*Academy* vol. 16, July–December 1876), "Periodicity of sun-spots and rainfall in Southern India" (*Academy* vol. 11, January–June 1877), "Sun-spots and famines" and "Relation between sun spots and wind" (*Academy* vol. 12, July–Dcember 1877), "Sun-spots and famines" (*Nineteenth Century* 2, August–December 1877), "Sunspots and rainfall" (*Academy* vol. 13, January–June 1878, vol. 15, January–June 1879, and vol. 16, July–December 1879). More are cited in Morgan 1990, p. 23, warning that this vast literature on sunspot cycles and periodical phenomena included some satirical pieces; Jevons suspected that the anonymous artile on "University boat races and sunspot cycles" was addressed to him. Observations on sunspot and agricultural cycles had a fairly long tradition: Jevons went back to Herschel (1801) and Carrington (1863), noting however that their results were not robust enough (Jevons [1875], in 1884, p. 195; 1878a, in 1884, pp. 206-7). Jevons's interest in agricultural cycles may have been influenced by the experience accumulated while gathering data on meteorological cycles in Australia (Black 1981, p. 20), and by the work of his colleague Arthur Schuster at Owens College, who had noticed that the quality of wine crops fluctuated with periods more or less similar to those of sunspots (cited in Jevons [1875], in 1884, p. 195; see Keynes 1936, p. 124).

[74] Jevons himself recognised that, in his collection and interpretation of data concerning the cycle phenomenon, he was guided by a theoretical bias in favour of a strict periodicity (Jevons 1878b, in 1884, p. 228). Keynes remarked that Jevons had "passed over with surprising levity" the discrepancies with strict periodicity he had himself pointed out, and that "the details of the inductive argument are decidedly flimsy" (Keynes 1936, p. 126).

[75] This mechanical principle was also advocated by Danson (1848, p. 101): "1. The commercial distress which has so strongly marked the year just closed would appear to be, in the main, only a recurrence of a state of things which has become, in some degree, periodical. Effects occurring repeatedly, at intervals having some appearance of regularity, seem to indicate a corresponding regularity in the recurrence of their causes".

[76] Juglar does not supply references; he may refer to Cobden's introduction to the French translation of Chevalier's *Probable Fall in the Price of Gold*, who wrote of crises "visiting the commercial world once in each decade" (Cobden 1859, p. x).

rejected the methodological premise of the periodicity of causes: “cela ne veut pas dire cependant qu’il y a des cycles d’abondance et de disette réguliers; la prédiction de Joseph des sept ans de prosperité [et de sept ans] de misère prouve même que c’était un fait exceptionnel” (p.162). Juglar took the occasion to stress again that the outbreak of a crisis is only possible when equilibrium has become unstable: before that, any famine or was would not excessively derange the economic system, while if equilibrium is unstable any events can trigger the explosion (p. 165): Juglar’s medical notion of causality (see section 2.1) is thus opposed to Jevons’s mechanical one. And, as Jevons did not find any internal rythmical cause of fluctuations, the contrast turns out to be between a self-generated (in intention, at least) and an exogenous mechanism. As we shall see in section 5.1, this counterposition between regular and irregular cycles was taken up by commentators, althought the background issue of causality disappeared from view.

4.2. On phases and the ‘normality’ of the cycle

Both the issues relating to Juglar’s division of phases were taken up in the later literature. The first regards the recognition of three phases, with the asymmetrical emphasis on crises. For a while, the cycle was intended primarily as a repetition of crises: whether crises were interpreted as a deviation from the normal path of advance or were understood as the expression of some permanent disorder, they remained the phenomenon to be explained. Thus we find emphasis on crises both in authors who stressed the bad working of the system and authors who believed that the system is fundamentally well behaved but disturbed by some friction or external events. This is reflected by the terminology in use: the term ‘cycle’ only established itself in the English language literature only after World War I, while in other countries even later; the current terminology kept referring to ‘crises’ or, especially in the non technical literature, to panics.[78]

Juglar had moved a first step in this progression. His idea that prosperity is the normal state of the system while crises are an unwelcome but unavoidable way for clearing the excesses generated by the prosperous phase itself, was in a way still fully within the Classical tradition mainly focusing on the process of accumulation, but in another way was moving a big step away from it. It was Classical as to the interpretation of growth as the normal state of the system,[79] it was unorthodox in understanding that not

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[77] Jevons himself, of course, admited that other events, besides fluctuations in agricultural production following sunspots, could also affect the period.

[78] The terminological lag was noted by Schumpeter (1954, p. 1123). Yet in 1913 Aftalion forecasted that “quand la matière sera plus connue, on parlera moins de *crises de surproduction* et davantage des *cycles économiques*. Dans les travaux scientifiques, cette seconde expression tendra à se substituer à la première” (1913, vol. I, p. vi).

[79] Ferrara’s view, for instance: “Crises originate, as we have seen, from abnormal production. If production constantly followed the line of its natural development, it would cut at the root all the ills lamented by mankind, and our world would offer the view of a continuous ascension, from the state of misery from which we began, to an unlimited and undefinable perfection” (1864, pp. 256–9).

only exceptions to the smooth working of the system are admissible, but these are part and parcel with the very working of the system itself. Such a position was not common at Juglar's time. Most authors (as aptly summarized by Millar in the passage cited at the end of section 3.1) interpreted crises as anomalies resulting from unwelcome accidents, extraneous to the logic of the system.[80] A few commentators, on the contrary, had doubts on the instrinsic workability of the system, and saw a smooth progress as an exception to a state of almost permanent disorder. Business cycles provided a scheme of thought where these opposite approaches could find a point in common, for on the one hand the anomalies could be incorporated within a general scheme and on the other hand the disorder became in turn systematic. Both sides had to pay a price: booms are going to be interrupted, but the depression will sooner or later turn again into a recovery.[81] The conflicting views on the working of the economic system would remained irreconciliable, but moved to a different theoretical plane.

In this new scheme, crises gradually lost the center of the stage, and did so at a price. As the mechanism of succession of phases was better completed, and Juglar's gap in the explanation of the transition from liquidation to prosperity was filled —a passage that implied the definition of a further phase: the 'recovery'[82, 83]—, the stage was set to consider the cycles as a complete whole. But also to eliminate the asymmetry in the movement: the lower turning point resembles, and is often held to be specular, to the upper turning point.[84] At this stage of the debate among cycle theorists, agreement was quickly reached that crises are nothing else than the point of transition between the ascending and

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[80] Dupriez aptly remarked the exceptionality of Juglar in this context: "les économists liberaux n'accordaient généralement aux crises qu'une attention superficielle et ne cherchaient guère à les expliquer mieux que d'autres déséquilibres transitoires (à l'exception de la théorie météorologique de W. St. Jevons et de l'explication financière et contingente de Cl. Juglar)" (Dupriez 1951, vol I, p. 11). **Add something on Frobert on Juglar's liberal conciliation?????**?

[81] The latter aspect was appreciated fairly soon: see the passage from Leroy-Beaulieu (1884, p. 386) cited in **section 5.1** below.

[82] The first division in four phases may be due to Mills (not surprisingly, in the light of what was said in **section 3.7** on his discussion of the lower turning point). He did not actually list four phases, but three phases *plus* the panic, the departing and arriving point of the whole movement: "Through the normal cycle of credit we have now worked our way again to a point corresponding to that where I started that Panic was 'the detruction of a bundle of beliefs.' The road we traversed was found clearly enough divided into three stages:

1. The Post-panic period, marked by plethora of reserve Capital, and dormancy of speculation.
2. The Middle, or Revival period, marked by increasing trade, moderate speculation, and a sound state of Credit.
3. The Speculative period, showing inflation of Credit, high range of prices, unproductive investment, and excessive commitments; and leading to Crisis and the end of the cycle.

With each of these stages there appears to be a concurrent change in the mental mood of the trading public; and these changes are the same in each decade, and follow the same relative order." (Mills 1868, p. 29).

[83] The early divisions in three phases was criticised for instance by by Mitchell (who, however, had accepted it up to 1913: see the quotation at the end of **section 4.3**): "if the transition from prosperity to depression is recognized as a separate phase, it seems logical to give similar recognition to the transition from depression to prosperity" (Mitchell 1927, p. 378).

[84] In Aftalion's view, "La logique exige qu'on explique la prospérité, qui est une des phases des cycles, de la même manière que la crise, que la dépression qui en constituent l'autre phase" (1913, vol. I, p. 282)

descending movement:[85] they just became one of the four phases of the cycle. The price to be paid, with respect to the early appoaches, was that at the same time prosperity ceased to be the 'natural' state of the system, to become in turn another of the four pahses. The final stage of this line of development of business cycle theories was the econometricians' treatment in terms of functional equations, giving as a result sine waves where even the violence and the suddenness of the crisis —which had remained for decades a feature of the last crisis theories and the early cycle theories— was turned into a smooth and gently declining curve,[86] precisely symmetric with the phase of recovery. At this point, even the name could be changed, and crises became downturns. The appropriate analogon for the cycle is no longer a diseased state, but the pendulum: fully symmetrical, with phases gradually alternating with regularity.[87]

The full completion of the transition in the shift of emphasis from crises to cycles was the interpretation of the entire cycle (rather than prosperity only) as the 'normal' state of the system: rather than seeing the cycle as a deviation from equilibrium (or an oscillation around equilibrium), some authors understood the cycle in terms of what we would today call an attractor, a state towards which the system tends. The first example of such an approach seems to be Robertson's *Industrial fluctuations* (1915), the culmination is in the representation of fluctuations in terms of limit cycles.[88]

4.3. Crises, cycles, and a common explanation

Juglar's masterly piece of rethorics (section 2.1) needed some complements in order to fully convince fellow economists that the appropriate way to look at crises is in their interconnection with each others and with the other phases of the system. Jevons in

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[85] Lescure 1907 (pp. 2–3 of the 1932 edition), quickly followed by Aftalion (1913, vol. I, p. 6). For a discussion of this notion, as compared to the alternative interpretation held by other autors (Bouniatian's and Tougan-Baranowsky's, for instance), emphasizing the violence and the ruin caused by crises, see Mitchell 1927, pp. 378–81, and 1927a. It may be noted that Lescure's definition of crisis as the interruption of the period of prosperity is fully compatible with Juglar's 1889 definition of crisis as the time when prices cease to grow, thereby interrupting prosperity (p. 16; Guitton actually confuses them: 1951, p. 90n). Perhaps Lescure did even develop his own definition elaborating upon Juglar's. Yet the implications are quite different: Lescure stresses the *transition* from prosperity to depression ("la crise générale de surproduction est le point d'intersection d'une période d'essor […] avec une période de dépression"), while Juglar is interested in stressing the crisis as a special state of the system, where equilibrium brakes down. Moreover, while for Lescure the crisis is a *point* of transition between phases, for Juglar it is a *period*, a phase (brief as it may be: pp. 16–17). Such a conception deprived the crisis of any function, thereby preparing its complete euthanasia, while for Juglar the crisis was an all importantphase in the capitalistic process.

[86] Already in 1913 Mitchell wrote that "the strains relax as gradually as they gather and the crisis merges into a depression in the same unobtrusive fashion that it emerges from prosperity", so that "Expansion gives place to contraction, though without a violent wrench" (pp. 122 and 158 of the 1941 reprint), and that "The very condition that make business profitable gradually evolve conditions that threaten a reduction of profits" (Mitchell 1913, 1941 edition, p. 61). Mitchell of course recognized that some times crises aresudden and violent, but ascribed such facts to 'unreasonable alarm' on the part of the public, degenerating into the unreasonable behaviour characterizing panics.

[87] For a briliant discussion of the metaphor of the pendulum see Louçã 2001; for a comment on the transition from one metaphor to the other see Besomi [in preparation].

[88] For a detailed discussion see Besomi [in preparation].

Britain felt the same urge. He immediately appreciated Mill's appeal to reject expanations based on proximate causes to inquire into the common causes of all cycles: **"**Mr. Mills has proved that such fluctuations have a deeper cause which we can only describe as the *mental disposition* of the trading classes" (Jevons 1869). Later he ridiculed

> the variety of the explanations offered by commercial writers concerning the cause of the present state of trade. Foreign competition, beer-drinking, overproduction, trade-unionism, war, peace, want of gold, superabundance of silver, Lord Beaconsfield, Sir Stafford Northcote, their extravagant expenditure, the Government policy, the Glasgow Bank directors, Mr. Edison and the electric light, are a few of the happy and consistent suggestions continually made to explain the present disastrous collapse of industry and credit. (Jevons 1878b, in 1884, p. 221).

Jevons, like Juglar, coupled the rethorical purpose with a methodological objection to the search of specific causes for each crisis. Although depressions are often "apparently due to exceptional and accidental events, such as wars, great commercial failures, unfounded panics, and so forth" (Jevons [1875], in 1884, p. 203), the mechanical principle that periodical effects must have periodical causes (see section 4.1 above) forbids that these are the ultimate causes: "so long as these causes are various and disconnected, nothing emerges to explain the remarkable appearance of regularity and periodicity which characterises these events".[89] Again like Juglar (and Mills, Lawson and Cory: **section 3.6**), Jevons too turns the interpretation of these exceptional events on its head: from causes of the crises, they are downgraded to causes of the irregularities in the period. When commerce is disturbed by wars, tariffs or similar extaneous events, "it can be no matter of wonder that the regular march of the decennial variation was somewhat broken." (Jevons 1878a, in 1884, p. 208).

This interpretation quickly took hold with cycle theorists[90], so that Mitchell could draw a close on the transition from crises theories to theories of business cycles with the following statement:

> Wide divergences of opinion continue to exist among competent writers upon crises; but in recent years substantial agreement has been reached upon two points of fundamental importance.
>
> Crises are no longer treated as sudden catastrophes which interrupt the 'normal' course of business, as episodes which can be understood without investigation of the intervening years. On the contrary, the crisis is regarded as but the most dramatic and briefest of the three phases of a business cycle —prosperity, crisis, and depression.[91] Modern discussion endeavor to show why

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[89] Jevons 1878b, in 1884, p. 222. See also Jevons 1878a, in 1884, p. 206: "No accidental cause, however, is sufficient to explain so widespread and recurrent a state of trade."

[90] Just to cite another example, Aftalion only cursorily listed such accidental events ("mouvements de longue durée des prix, besoins nouveaux, découvertes techniques, changements de la législation douanière, variations des récoltes, oscillations des stocks métalliques […], guerres, événements politiques et autres") in order to point out that they may help explaining the specific features of each cycle, but concluded: "il entre dans le cadre de cet ouvrage d'étudier seulement les similitudes et non les contrastes entre cycles successifs" (Aftalion 1913, vol. 2, p. 259).

[91] At this junction Mitchell still accepted the division of cycles in three phases; he later changed his mind: see **footnote 83**.

a crisis is followed by a depression, and depression by prosperity, quite as much as to show why prosperity is followed by a crisis. In a word, the theory of crises has grown into the theory of business cycles.

The wider grasp of the problem has discredited the view that crises are due to abnormal conditions which tempt industry and trade to forsake their beaten paths and temporarily befog the judgement of business men and investors, or to misguided legislation, unsound business practices, imperfect banking organization, and the like. As business cycles have continued to run their round decade after decade in all nations of highly developed business organization, the idea that each crisis may be accounted for by some special cause has become less tenable. On the contrary, the explanations in favor today ascribe the recurrence of crises after periods of prosperity to some inherent characteristic of economic organization or activity. The complex processes which make up business life are analyzed to discover why they inevitably work out a change from good times to bad and from bad times to good. The influence of special conditions is admitted, of course, but rather as a factor which complicates the process than as the leading cause of crises (Mitchell 1913, pp. 5–6).

If we place Juglar's position in this context, its ambiguity becomes apparent: he still conceived of crises as interrupting the 'normal' course of prosperity, but at the same time he understood them as being the outome of that very prosperity. Again, he saw crises as the product of 'abnormal' development, 'excesses' and 'abuses', but intepreted them in terms of a causal chain of phases that would constitute, taken as a whole, a proper cycle.

5. Juglar in the literature

Juglar was writing at a time of rapid change in the conception of crises and cycles,[92] of which change he was one of the makers. This section, by means of a partial survey, aims at illustrating how his work was perceived in the literature.[93]

5.1. Juglar's contemporaries

The first references to Juglar's work in France anticipated his book. H. Passy reported (on Juglar's request) before the Académie de Sciences Morales et Politiques of Juglar's 1857 article. Passy mentioned both the kinds of crises discussed by Juglar, those originating from wars or political events and those, 'really periodical', following years of prosperity—forgetting to remark that Juglar was emphasising the latter kind and attributed the political disturbances generating the first kind of crisis to the proper commercial crises themselves (Juglar 1857, p. 38). Passy considered "un des côtés curieux" of Juglar's article that crises "semblent avoir leur fatalité naturelle", presenting the same order of succession (Passy 1857). Later in the year, during a discussion on the "Origine et causes de la crise actuelle" before the Société d'Économie Politique, Passy reminded the other participants of Juglar's recent publications[94] comparing the states of the Bank of England

[92] Not *so* rapid, at first, as Schumpeter pointed out (1954, p. 1124). This witnesses the resistance to the new view—and, incidentally, the scarce power of conviction Juglar's first edition exerced on his contemporaries (in spite of having 'excited' them: **see footnote 62**).

[93] Needless to say, the literature is so vast that it would be impossible to supply a complete survey. A few references (and lack of references) to Juglar in the major literature on cycles have already been cited, with a similar purpose in mind, by Niehans (1992, pp. 563–7).

[94] Juglar 1857 and 1857a are summarized in a note by the editor.

and the Banque de France, estimates that the tables there reported "donne la clef du méchanisme des crises, de leur origine, de leur développement, de leur terminaison". Again, in the first place he mentioned as causes of crises agricultural abundance, wars, and political events, and only in the second place he named speculation (Société d'Économie Politique 1857, p. 468). The idea of an endogenous generation of crises thus seems to have struck Passy as rather odd.

Another early quotation of Juglar's articles is due to Levasseur, who referred to Juglar's exposition of the "marche générale des crises commerciales".[95] Wolowki's "Rapport verbal" on Juglar's book before the Académie de Sciences Morales et Politiques (1862) does not add anything to his preface to the book itself. De Laveleye cited Juglar as holding the view that crises recur "après un intervalle regulier et par la force mème des choses" (1865, p. 290). He rejected both views: crises return frequently because the many circumstances causing them meet otfen enough, and each crisis has its specific determining cause.

Des Crises Commerciales crossed the Channel, and soon it was quoted in a pamphlet —yet only with reference to Juglar's opinion on Peel's 1844 Bank Act: strangely enough, as a few lines below the author referred to the periodicity of crises (Guthrie 1864, p. 4). Juglar's entry in the Block's *Dictionnaire général de la politique* surely made his views more authoritative (on top of the Académie prize, which Juglar kept reminding his readers **[give some quotes!!!**]), as well as the later entries in Say's Dictionnaire des Finances (Juglar and Des Essars 1889) and in Say's and Chailley's *Nouveau Dictionnaire d'Économie Politique* (Juglar 1891, 1900a).

Meanwhile, by 1870 Juglar was considered "one of the ablest French economists" (Anonymous 1870, p. 409), and was elected foreign honorary member of the Statistical Society of London.[96] Giffen, in 1877 could state that "That there is ordinarily a cycle in all prices [...] may now be considered an established doctrine in Political Economy" (p. 103). He claimed that "Several acknowledged authorities" had written and collected data on this effect, and cited as instances Took and Newmarch, Jevons, Bagehot, and Juglar, "whose able book on *Crises Commerciales* [...shows] the universality of the causes at work and their deep root in human nature": p. 104.

Juglar's book was acquired —but not read in its entirety "with the care which it deserves" by Jevons (letter 578 to De Foville, 1 February 1879, in Jevons 1977, vol. 5). De Foville had called Jevons' attention on Juglar's book (ibid., letter 576) mentioning the diagrams and the later updates; Jevons was dissatisfied with Juglar's identification of 1804 as a yer of crisis, which he cited in one of his letters to *The Times* on sun-spots and commercial crises, misquoting the title of Juglar's book as "History of commercial

[95] Levasseur 1858, p. 213 (cited in Levasseur 1905, p. 102)

[96] "Proceedings of the Statistical Society", *Journal of the Statistical Society of London*, 33: 3, September 1870, p. 385.

crises" (confusing, perhaps, with Wirth 1858), curiously anticipating the title of the American translation (Jevons 1879, letter 598). On a previous occasion Juglar was also mentioned to Jevons by R. Adamson, who considered the book very perfunctory and vague about the periodicity of crises —meaning periodicity in the strict chronological sense (Jevons 1977, vol. IV, pp. 300–1). It is perhaps not surprising that Jevons, having in mind precisely this astronomical meaning of periodicity, did not mention Juglar among his forerunners in the inquiries into the periodical return of crises (1878b).[97]

Discussing the crisis many countries were undergoing at the time, Leroy-Beaulieu recognised two main currents of thought: some authors "n'y veulent voir qu'une de ces secousses périodiques, une des maladies de croissance qui sont comme l'accompagnement et le rançon de tous les progrès et qui, amenées par le cours naturel des choses, ayant un charactère en quelque sorte fatal, disparaissent d'elles-mêmes". The other school thought that this specific crisis was different from the previous ones, and had a character not natural but artificial, attributed to government mismanagement. Juglar, "qui s'est fait de l'étude des crises commerciales une spécialité intéressante et féconde", is listed among the "optimists" (Leroy-Beaulieu 1886, p. 386).

The second edition was presented in 1889 before the Royal Statistical Society (Balfour 1889, p. 520). An anonymous reviewer for the Society's journal pointed out that for Juglar the development of credit and a system of production on a large scale are necessar to each other, so that "the evil attaching to either of the two are intensified by those connected with the other". The summary of Juglar's thesis is quite fair, with the correct emphasis on the "sensitivity" of credit, of the healing action of of the liquidation of "disastrous entanglements", the importance of statistics in the identification of the characteristics of phases, and with the appreciation of Juglar's doubts that a precise period could be identified in contast with Jevons's "perhaps fanciful" "hypothesis of decennial period". The author mildly rebuffs Juglar for not having used Overstone's word 'cycle' (Anonymous 1890). **The book was also reviewed by Levasseur, E., 1890, Académie des Sciences Morales et Politiques, Séances et travaux n.s.:34 (1890, July-December) p. 111 [but I do not possess this].**

Frederiksen in 1892 referred that Juglar was a bit late in predicting the last crisis, as the French conditions were lagging behind a bit, but was right in forecasting the coming upward movement. He qualified him as a "learned specialist of the crises" "who for the last thrity years has made a special study of the above mentioned characteristics" (p. 195; Frederiksen's terminology reflects Juglar's, as he wrote of "expansive" or "speculative periods, crises, and liquidations": p. 189, and title). Similarly, Charles Gide

[97] Nor did Boccardo, whose references to Hyde Clarke, Mills, and Danson are however nothing else than an unacknowledged translation of Jevons's *Nature* article: an early case of plagiarism! (*Nature* was probably not a source with which Italian economists were acquainted: indeed, Boccardo got away with it, as Ferrara cited him, and not Jevons, when republishing in 1890 his 1864 piece on crises (pp. 274–5). Compare Boccardo 1879, pp. 134–6 and Jevons 1878b, pp. 222–4).

noted that Juglar "has made a speciality of predicting economic crises" (1890, p. 611).[98] A. C. Stevens also questioned the accuracy of Juglar's prediction: but he referred to figures in the American translation, which was brought up to date by the editor (1894, pp. 117–8).

In 1893 D'Arcy Thom ("a veteran stock-brocker": Dowrie 1917, p. 717) 'Englished' and heavily abridged Juglar's second edition as *A Brief History of Panics and their Periodical Occurrence in the United States*, which went through three editions (1897, 1916) and a few reprints. If this may have contributed to make Juglar's name known in the US (a reviewer estimated that "Probably no book on business cycles has had a wider circulation in the United States than Mr. Thom's adaptation of Juglar": W. C. M. 1917), it certainly not did him any other service, as all the considerations on periodicity, causation and anything else of interest were eliminated and only a chronicle of panics in the US was kept; and what was left and updated by Thom (16 panics, unequally spread) provided "not much support for the theory of cycles" (H. W. M. 1917, p. 313). Thom even managed to alter the meaning of crises, by using instead the word 'panics'. A review by in the *Journal of Political Economy*, besides complaining of Juglar having reduced commercial panics to banking panics, appropriatedly dealt more with the editor's shortcomings (Miller 1893). Dowrie similarly complained of "the author's thesis that a commercial panic is always a financial panic", which "leads him to treat our whole experience from the banking standpoint and thus to ignore equally important commercial and industrial factors". He added that "the treatment is so scrappy as to be of little value either to the casual reader or to the serious student of our financial history" (1917, p. 717). A brief note in the *Political Quarterly* considered the American edition, whith the interspersed "sentiments of the editor", to be of use at most as "a popular account of the evils of overtrading" (Anonymous 1893). The reviewer of the *Americal Economic Review* harshly criticised Thom's latest additions, which rested "not on study of of business conditions [...] but on a misuse of the term 'panic', and on a mistaken notion that panics are 'practically simultaneous' in Europe and America. As so often in this field, the theory is not made to fit the facts, but the facts to fit the theory" (W. C. M. 1917).

Juglar died in 1905. His obituaries, whith abundant references to Juglar's contribution to crises, were naturally full of praise. Levasseur stressed Juglar's division in phases and the incrasing tension cumulating during prosperity due to the exaggerations in credit brought by speculation. He referred that this theory was contested (without, however, giving references), but his phrasing suggests that the objections regarded the lack of strict periodicity (Levasseur 1905). De Foville also focused on the issue of

98 Juglar's barometer was refined by Des Essars, who inquired into the velocity of circulation and claimed to have verified Juglar's thesis for a period of 85 years. An interesting remark is that Juglar's theory of crises is "aujourd'hui clissique, mais qui n'à pas encore conquis tous les esprits", the difficulty residing in the accidental causes that sometimes alter the timing of crises (Des Essars 1895, p. 148).

periodicity, contrasting Jevons's rigidity with Juglar's flexibility, and on his economic barometer; he gave a fully rendition of Juglar's explanation of the cycle entirely based on the psychological mechanism (De Foville 1905). **There was also a tribute by Beauregard (1908, "Notice sur la vie et les travaux de Clément Juglar",** ***Académie des Sciences Morales et Politiques*****, Comptes Rendus LXXI, pp. 153–79) which I have not read.**

At the end of Juglar's life, the topic on which the debate seems to have focussed regarded the forecast of crises and the strictness of periodicity (which, of course, would very much facilitate prediction). These were mainly discusses as a matter of realism, rather than being seen as theoretical and methodological issues—while both Jevons and Juglar were fully aware, and indeed openly discussed, their methodological premises, namely, the notion of causality on which the whole approach is built: the former relied on periodical causes (admitting secondary causes to anticipate or delay the event); the latter relied instead on the accumulation of tension and of instability until an occasional cause triggers the crisis. All this, however, disappeared from the rendition of commentators, more worried with the practical aspects relating to prediction. Nor was it taken up by the great theorists of the business cycle, who were shifting the attention from the psychological factors breeding financial instability and feeding destructive panics to other kinds of explanation.[99]

5.2. The great theorists

Eugen von Bergmann, in the first full-blown history of crises theories, discussed Juglar in the chapter on the periodicity of crises (1895, pp. 255–60). He began by remarking that Juglar anticipated Mills and Jevons in producing a precise historical and statistical inquiry into crises and their periodicity. Bergmann produced a fair and detailed account of Juglar's thesis using Juglar's own words. He stressed the normality of prosperity, the suddenness of the crisis, the role of the liquidation in the elimination of the impure elements brough into the system by speculation, their concatenation, which can only be understood as part of the overall development of the economy. Bergmann, however, remarked that Juglar did not elaborate on the general principles guiding economic progress, relying on idea of 'normality' of prosperity, so that his description of the succession of phases is somehow incoherent.[100] Bergmann appreciated the role of Juglar's distinction between true and occasional causes, stressing how the latter trigger the

[99] As Jevons's view on cycles and sunspots was quickly relegated to the domain of theoretical *curiosa*, and his own view of exceptional events being capable of affecting the duration of the cycle was incorporated anyway in the subsequent theoretical approaches, the expediency of contrasting his views with Juglar's also disappeared. The only interwar reference I have found is in Kuznets 1930, pp. 383–4. The issue of periodicity, without comparison with Jevons, is discussed by Mitchell, who correctly stressed that Juglar did not identify any strict period but only aimed at pointing out the regularity in the alternation of phases (1927, pp. 453–4).

[100] This passages (Bergmann1895, p. 257) is underlined in Spiethoff's copy of the book, consistently with his harsch judgement on Juglar's theory (**see below in this section**).

crisis as the last drop of water causes the basin to overflow. Finally, he remarked that for Juglar 'periodicity' did not mean strict periodicity, but only the necessity of the repetition of crises in our economic organization.

Bergmann's account was, for decades to come, the last rendition of Juglar's theory (with the exception of Tugan-Baranowsky: see below). Although many scholars inserted a history of doctrine chapter in their treatises on cycles, and a few more volumes on the history of cycle theories have been published, Juglar is generally relegated to a few lines, if at all, with the exception of the great French theorists of the cycle, perhaps because they were confronted with the ghost of Juglar's authority, surely more lively at home than abroad.[101] Some authors hardly mentioned Juglar at all: he is missing, for instance, from Mitchell's survey of business cycle theories in the firt edition of his book (1913 —although he referred to some of Juglar's data) and from his entry on Business cycles in the *Encyclopedia of the Social Sciences* (1933; however he praised him in 1927: see below); Juglar is also missing from Pigou's *Industrial Fluctuations* (1927), although Pigou had read Juglar, whom he quoted verbatim in the review of Jones (Pigou 1900, p. 525). Wicksell does not mention him in *Interest and Prices* although, as Niehans observed (1992, p. 565), it would have bee highly pertinent (Wicksell had, however, read Juglar: see below), nor did Haberler in his 1937 survey (he was, however, concerned with the more theoreticall approaches of the XXth century).

Among those who did discuss Juglar, the appreciation of whis work rarely touched theoretical aspects. Commons evaluated Juglar's contribution to a credit cycle by stressing that by credit Juglar is not concerned much with the banks as credit creators but with credits business people accord to each other (Commons, McCracken and Zeuch 1922, p. 261), that he was the first to make credit an endogenous variable,[102] and that (in contrast to Hobson, who attributed the *exaggerations* of cycles to the abuse of credit, Juglar blamed on this the cycle itself[103] (Commons 1923, p. 646), thereby touching the thorny problem of the relationship of 'normal' and 'anbormal' causes and effects in the conception of cycles. Juglar is rather cursorily cited in Jones's treatise on crises as one of those (which also include J. S. Mill and J. Mills) who recognised the influence of

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[101] Aftalion (1913, but preceded by a series of article in the *Revue d'Economie Politique* in 1908–9) and Lescure (1907) published their treatises on the cycle only a few years after Juglar's death. These writings are not discussed here as they are dealt with in detail, precisely in this perspective, by Dangel-Hagnauer and Raybaut 2005. It is however worth noticing that the reviewer of Lescure's book dealt with the criticism of Juglar: "Some twenty years have now elapsed since the publication of the wellknown works of M. Juglar; and, as Dr. Lescure shows, that recognised authority was inclined to fix his attention too narrowly a single special feature, which was a common or regular accompaniment rather than a cause of the phenomena to which he devoted his attention" (L.L.P. 1907, p. 138).

[102] The passage is cited in **footnote 34** above. Hansen —obviously without having read Juglar first hand, reports the opinio of Commons, McCracken and Zeuch (1927, p. 134)

[103] Curiously, a modern reader of Juglar attributed Hobson's view to Juglar: "The excessive resort to credit instruments often accentuates the prosperous phase, rendering the subsequent crisis even more sudden and more disastrous" (Ducos 1997, p. 346).

psychologial factors on the recurrence of crises (Jones 1900, pp. 135–6), and is listed by Morgenstern among those who discussed the international propagation of business cycles (1943, p. 288). Robertson only mentioned Juglar twice, and rather cursorily, in spite of having qualified his book a "great work" (1915, p. 10n): he criticised him for having looked only at the monetary side of the phenomenon (pp. 9–10) and claimed that his own treatment almost entirely without reference to monetary phenomena relieved him from formally refuting those who, "like Clement Juglar and Mr. Hawtrey, find in monetary influences the sole and siufficient explanation of industrial fluctuations" (p. 211). Similarly Pribram credits Juglar for supplying the fist monetary theory of the cycle (1951, p. 34)—one of the two 'branches' he believes business cycle theory consists of (p. 35).[104] Pribram cites the first edition of Juglar's book, but from his summary it is clear that he is referring to the second edition. Tugan-Baranowsky devotes some pages to Juglar's theory, interpreting it as seeing the cause of the crises in the general fluctuations of prices; Tugan, however, notes that although Juglar well describes the gold mouvements associated to price fluctuations, he fails to explain what the cause of these fluctuations is (1913, pp. 241–4).[105] On Juglar's historical part of the otherwise "excellent work" Tugan remarked that it "is very poor and in places is a literal translation of M. Wirth's book just as the latter book is, in place, a translation of Tooke" (1914, Engl. transl. p. 759n). **[this would be interesting to verify!!]**

Not only Juglar's theoretical contributions were scarcely cited, but some authors emphasised the theoretical poverty of *Des Crises commerciales*. H. L. Moore gave it recognition as a "classic work on commercial crises", where the author "established the universality of crises, their periodic return and their general resemblance", but also stressed that Juglar "did not succeed in determining the general cause of crises. Indeed, he found considerable satisfaction in the exclusively empirical character of his work" (Moore 1908, pp. 28–29). Spiethoff was more drastic: he argued that Juglar is completely oblivious of the theoretical developments of his time, in particular of the advances in the theory of overproduction, and leaves his readers in the fog rather than giving them any additional understanding of the economic process. He approaches crises from the viewpoint of a writer in credit, banking and financial aspects rather than as an economist.[106]

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[104] For a discussion of whether Juglar's theory is a purely monetary one see Pellissier 2000, pp. 278–9.

[105] In the previous, German edition of his book, Tugan only mentioned Juglar as having observed that the periodical fluctuations of industry are associated with the periodical fluctuations of prices without, however, discussing Juglar's theory (1901, p. 249).

[106] "Ihm fehlt jede Einsicht in die eigentümlich kapitalistische Grundlage des Jahrhunderte und in die kaptalistische Wirtachaftsweise überhaupt. Er macht den Eindruck eines Nachtwandlers, und der Leser sceheidet von seinem Werk mehr mit dem Gefühl, vor einem verschleierten Bilde gestanden, als volkswirtschaftliche Erkenntnis erfahren zu haben. Das reiche Schrifttum über die Uebererzeugung ist kaum für ihn vorhanden. Seine Denkweise ist viel mehr die der Schriftsteller der engeren Krisenerscheinung aus dem Bereich des Kredit-, Bank- und Börsenwesens als die der volkswirtschaftlichen Denker, die der Uebererzeugnung nachgegangen sind" (Spiethoff 1925, p. 61).

A point that raised some interest among commentators and later theorists was Juglar's notion of 'crisis'. Fisher accepted it (1911a, p. 65n). Jones, in the survey of definitions of crises with which he opened his book, cited a passage from Juglar's entry in Say's Dictionary according to which "crisis is the touchstone which reveals the solidity of commercial houses"; this view was grouped with the authors (Wagner 1866, p. 526 and White 1882, p. 523 **[check pages of both!]**) emphasising the stoppage of business transactions leading to widespread inability to meet reciprocal obligations (Jones 1900, pp. 3–4, referring to Juglar 1900a).

Supino pointed out that Juglar's definition of crisis as the stoppage of price rises reveal the emphasis on phenomena related to circulation—which, however, he thought to be secondary only (Supino 1907, p. 47).[107] Wicksell in a footnote also criticised Juglar's definition of crisis as the moment where prices stop increasing as not capturing "the inner nature of crises", as the fluctuations in the general price level are not absolute but reflect the standard of measurement (Wicksell [1907], Engl. transl. p. 337n). Juglar's definition was also criticised (again as a footnote matter) by Minnie England: "Juglar says the crisis is the fall of prices (cf. also Laughlin's ed. of Mill, p. 338). The fall of prices, however, is an effect, rather than a cause. It is true, though, that the fall of prices will make many readjustments necessary and probably cause some failures" (England 1913, p. 346). Persons refers to Juglar's definition as one of the instances of prices having been taken as a first approximation for a business barometer (1916, p. 751).

Mitchell questioned not much Juglar's definition of crisis, but his emphasis on crises, which prevented him from recognising the typical 3-4 years cycle simply because the events associated with some of the turning points are not as dramatic as the major crises. This rebuff, however, regards books on crises generally, not only Juglar's (Mitchell 1927, p. 453).

Some authors, especially in the early years, used the data gathered by Juglar. Pareto (1897, pp. 16–20) extensively cited Juglar's figures on crises years, maxima and minima of circulation, reserves and portfolios, and Juglar's and Des Essars's data on velocity of circulation, which he accompanied with generous comments on the scientificity of Juglar's method. Further references can be found in Supino (1907), Fisher (1911, p. 304), Mitchell (1913) and England (1913a, p. 716).

Most of the references to Juglar, however, regard his pioneering role as a business cycle theorist. Aftalion affirms that "On sait aujourd'hui, grâce sourtout à Juglar, que la crise est seulement un des moments d'un cycle entier qui se déroule périodiquement, le moment il est vrai le plus douloureux" (1913, vol. 1, p. vi). Vogel expounded Juglar's

[107] Apart from a few references to Juglar's data, omission to cite Juglar's argument is quite revealing in the light of Supino being well read in the French, German and British literature on cycles and crises.

approach together with those of the German historical school.[108] He states that Juglar was the first to recognise the fluctuating behaviour of the economic system as the main problem, and in particular inquired on the problem of its periodicity. Vogel found particularly interesting that Juglar's historical and statistical inquiry, especially on price movements, led him to find in prosperity the starting point and the main cause of crises (1917, p. 127).[109] Lutz cites Juglar as the first cycle theorist who preceded their analysis with empirical investigations (Lutz 1932, Engl. transl. p. 231). Spiethoff referred to Juglar as the initiator of the new research programme on cycles (1925, p. 61[110]), and as the one who recognized the business cycle "as a concept capable of replacing the former concepts of 'crisis' and 'overproduction' (1953, p. 77). Mitchell qualified Juglar as "The most distinguished pioneer in work of this sort", one of those making progress "toward more exact observation and description of the phenomena"; *Des Crises Commerciales* is considered a "grat 'book of facts'", marking a "a critical turning point in the study" (1927, pp. 10-11 and 452–3). In the same year, Hansen reports Schumpeter's view (Schumpeter 1914, pp. 2–3 and 6–7) that "Juglar was the first to see clearly that the crisis is merely a phase of a process. He saw that the expansion was the cause of the depression" (Hansen 1927, p. 134n). Hansen cites 1860 as the year of publication of Juglar's first edition; he probably took it from Mitchell (as Schumpeter did not give any references). This mistake is repeated all over in the literature,[111] even by Schumpeter (see below) indicating that Juglar was cited second hand (at least so far as the first edition was concerned), probably from authors who had not read the 1862 book in the first place![112] A. H. Cole, for instance, credits Juglar with having first (with jevons) renounced the idea that crises were quixotic events and having advanced instead they are related, and with

[108] Niehans also considered Juglar's method as being akin to that of the German historical school: 1992, p. 551.

[109] This position is extraordinarily similar to Schumpeter's (see section 5.3). The very short summary of Juglar's position, in contrast to the detailed discussion of most other theories, may suggest that Vogel actually relied on Schumpeter for his judgement.

[110] The passage is also cited by Persons (who obviously had not read Juglar first hand) in his survey of business cycle theories (1926, p. 98). On Spiethoff's qualifications see **footnote 106**).

[111] For instance Milgate 1987, p. 1037 (Milgate questioned the claim to priority reminding that other authors deserve to be credited for having inquired into the periodical character of crises: Ovestone, Wade, Amasa Walker, Sismondi, Rodbertus and Marx).

[112] Hansen further cited Juglar second hand in other writings: the passage "since the boom is, as Juglar pointed out, the progenitor of the depression" is obviously a bad quote from Schumpeter rather than from Juglar himself (Hansen; Francis M. Boddy; John K. Langum 1936, p. 56); the alleged Juglar quotation is cited again in Hansen's piece on Schumpeter's contribution to business cycle theory (Hansen 1951, p. 131). Another example of second-hand reading is the unscholarly, but otherwise insightful, book on business cycles by Tvede. It is apparent that he has not read Juglar and only paraphrased (without citing) Schumpeter's view (and even boxed, under the title of "Juglar's achievement", Schumpeter's reasons for evaluationg Juglar highly: see the quotation at the end of section 5.3), but (out of his understanding of dynamics, rather than of Juglar's writings) managed to infer that Juglar must have understood that the cycle "could be a phenomenon that could take place even if nothing happened to initiate it"—which almost correctly translates Juglar's observations on instability and the last drop of water—, which is what instead the grat classical economists failed to appreciate in spite of having "found many traces of inherent instability" (Tvede 2001, pp. 64–7).

having demonstrated the existence of cycles in banking statistics in France and England. Yet the wrong publication year is cited (1860), and the United States are missing from the title (Cole 1957, pp. 336 and 379). More accurate in his references, but far too bold in his claim, is Guitton: "On doit reconnaître en Clément Juglar (1857) celui qui le premier a mis à jour l'idée de la périodicité des crises, et fut le premier observateur et le premier collecteur des phénomènes sujet è crise" (Guitton 1951, p. 24; but see p. 87 for a timid correction); Guitton also credits Juglar for having discovered the "disparité crédit-économie", for having "le premier dégagé une disparité simplifiée de laquelle il se servait pour annoncer la crises ou la reprise", and for having formulated the first "cycle qui s'engendrerait par lui-même" (p. 276).

Hutchison dedicated to Juglar's "great work" a few pages of his *Review of Economic Doctrines*, focussing more on context than on the specific doctrine. He noted that Juglar "attempted only the most obvious of generalizations, for example about the movement of prices, and therefore expounded no compact explanatory formula about what determines what, which could become a centre of debate. Perhaps partly for this reason his work has never seemed to receive mch attention from English and American economists". He concludes that "by the massive and definitive character of his pioneering work, Clement Juglar deserves pride of place" in a review of the doctrnes on the periodicity and inevitability of economic crises; but also reminds that this idea had already been advanced by many writers, citing a number of those referred to in section 3.2 above (Hutchison 1953, pp. 370–3).

5.3. Schumpeter

Schumpeter is certainly the person to whom Juglar ows his fame today: by attributing to him the merit of having almost single-handedly pioneered the transition from crises to cycle, by considering him one of the best economists of all times, and especially by eponymously linking his name to the 'middle' cycle,[113, 114] Schumpeter not only saved him from oblivion but raised him to a rank Juglar surely does not deserve.

In 1914 ....**to be completed ......** Schumpeter already expounded his view that Juglar's work on cycles was the greatet achievement in the field (followed by Mitchell 1913), which he condensed as follows: "Juglar then recognized the essence of the

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113 It may be noted that Haberler anticipated Schumpeter (albeit not in print) in denoting the 10 years cycle as 'Juglar's': "Perhaps I ought to have made it clearer that I am dealing in this memorandum with the ordinary business cycle—not with seasonal variations or with the so-called long waves. I agree, that as my investigation progresses, I shall be forced to take into consideration also those other cyclical movements. But I believe that the ordinary business cycle, "the Juglar cycle" is a fairly obvious phenomenon—much more so, in fact, than the long waves—so that it might be promissing [sic] to attack the problem from this end" (letter to J. Akerman, 5 September 1934, carbon copies in League of Nations Archives, file 10B/12653/12653 (Jacket 1), and in Haberler Papers, Hoover Institution, Box 66, file Correspondence/Memoranda 1934–35).

114 Most of the appearances of Juglar's name in the electronic databases of economic publications after the second world war refer to the 'Juglar cycle' or the 'Juglars'.

problem and expressed the decisive sentence: The only cause of depression is prosperity" (Schumpeter 1914, p. 7)

In 1927, Schumpeter described Juglar's contribution as follows:

> Then came the great impulse due to the genius of Clement Juglar. He, first, by showing that crises are only elements of a much wider and deeper cyclical movement, unearthed the real problem; he, second, succeeded in *describing* empirically this cyclical movement; and, third, he contributed substantially towards its *explanation*. (1927, p. 287)

Juglar's substantial contribution towards the explanation of the cycle lies, according to Schumpeter, in the formulation "la cause unique de la dépression c'est la prospérité",[115] that is, in the idea that the roots of the depression lie not in exogenous disturbances but in a "reaction of business life to the situationcreated by the boom, or, ore precisely, as the movement of business life towards a new state of equilibrium conforming to the dat created by the boom" (ibid., p. 294). Schumpeter is here already adding something to Juglar's own formulation, and taking something away: the crisis has disappeared and the emphasis has shifted to a downward movement, which is initiated as a 'reaction of business life' to the previous state. In Juglar the crisis is a reaction (the term only appeared in 1889, p. xvi), but in a more 'passive' sense: it is not 'business life' that 'adapts' to a a new state of things, and there is no new configuration of data created by the boom, but it is a just system collapsing under the weigh of excessive credit.[116]

In "The Analysis of Economic Change", Schumpeter's claim for Juglar was more modest, and surely more accurate thanks to the lack of claims to priority and regarding causation: "In the sixties of the past century, Juglar definitely established the existence of wave-like movements which pervade economic life within the institutional framework of capitalist society" (1935, p. 2). In his *Business Cycle*, Schumpeter maintained that

> the great advance beyond this view of the subject [focusing on individual crises] came about as the result of the efforts of many authors, but is primarily associated with the name of Clément Juglar, who was the first to have a clear perception of how theory, statistics, and history ought to cooperate in our field. His great merit is that he pushed the crisis into the background and that he discovered below it another, much more fundamental, phenomenon, the mechanism of alternating prosperities and liquidations, the latter of which, as

[115] In spite of searches through both Juglar's edition, the passage was not found (Niehans 1992, p. 554). It is rather curious that, contrary to the 1914 reference cited above, the passage now seems to be an actual citation, in French—but not in Juglar's terminology, for hes has never used the word 'dépression' in this sense; also the expression 'cause unique' is not in line with Juglar's approach on causation (**see section 2.1**).

[116] Schumpeter seems to be projecting his own understanding of the cycle into "Juglar's formula". But there is a substantial difference: while Juglar considers the prosperity, at least in its early phases, as a stable and equilibrium process eventually broken by the cumulation of excesses that gradually take place due to speculation, in Schumpeter's view the instability is brought in by the innovative behaviour of some entrepreneurs *at the beginning of prosperity*, while the depression is a process of adaptation to the new configuration of the system created by the innovations. The interpretation in terms of the stability properties of the system is therefore precisely the opposite.

> pointed out in another place, he interpreted to be a reaction of the economic system to the events of the former. (Schumpeter 1939, pp. 162–3).

previously, Schumpeter wrote in a note that “With Juglar’s formula that prosperity is the *cause unique* of depression practically all ‘theories’ agree”: p. 139n.[117] Juglar (as well as the next generation of cycle theoriests) is criticised for having seen only one cycle, to which schumpeter gave Juglar’s name, while the system actually undergoes waves of different length.

In his tribute to Mitchell, Schumpeter again emphasised Juglar’s pioneering role in the passage from crises to cycles:

> There was of course a forerunner to all these authors, Clement Juglar—the great outsider who may be said to have created modern business-cycle analysis. So far as Mitchell is concerned, Juglar was his forerunner in theory as well as in method. Not only did he write a “great book of facts” which spurned contemporaneous theory and made clear the necessity of passing from “crises” to “cycle”, but he also indicated with truly Mitchellian reserve important principles of interpretation which he believed to rise directly from observation and which culminated in the famous dictum: the only cause of depression is prosperity, or, if I read this sentence aright, depression is the reaction to what happens in prosperity. This seems to me to be the first, though partial, formulation of the theory that every phase of the economic process engenders the next phase and that, in particular, stresses which accumulate in the system during prosperity lead to recession (which in turn creates the conditions for a new spell of prosperity). Mitchell, who independently adopted a similar schema, did not hesitate to call it a “theory” (see *e.g. Business Cycles*, p. 583, or Burns’ resume, *op. cit.*, p. 26), and this is exactly what it is if we take the term in its proper—that is, instrumental—sense: a schema that must derive justification, if at all, “in an independent effort to use it in interpreting the ceaseless ebb and flow of economic activity.” (Schumpeter 1950, p. 149)

Schumpeter’s final, and more effective, glorification of Juglar came in his *History of Economic Analysis*. After reminding that scores of authors before Juglar “displayed symptoms of a vague awareness” that crises are incidents or phases of a larger process, Schumpeter credits Juglar for the “decisive performance” of definitel ousting ‘crises’ for ‘cycles’. Juglar is described as ranking, “as to talent and command of scientific method, among the greatest economists of all times”.[118]

> This evaluation rests upon three facts. To begin with, he was the first to use time-series materials (mainly prices, interests rates, and central bank balances) systematically and with the clear purpose in mind of analysing a definite phenomenon. Since this is the fundamental method of modern business cycle analysis, he can be justly called its ancestor. Secondly, having discovered the cycle of roughly ten years’ duration that was most obvious in his material—it was he who discovered the continent; islands near it several writers had

[117] Schumpeter added a footnote with references to Juglar’s early writings on population and on the discounts of the Bank of France, and surprisingly cites the wrong publication year for the first edition of Juglar’s book, 1860 instead of 1862, probably having in mind the prize-winning document presented before the Académie. Schumpeter also suggested to take note of Mitchell’s and Spiethoff’s laudatory remarks on Juglar. But while Mitchell was indeed full of (belated!) admiration for Juglar’s achievement, Spiethoff’s view, although he recognised the pioneering role of Juglar, was quite negative as to his specific theoretic contribution (see the passage cite in **footnote 106**, on the same page indicated by Schumpeter).

[118] For a comment see Niehans 1992, p. 567.

> discovered before—he proceeded to develop a morphologyy of it in terms of 'phases' (upgrade, 'explosion', liquidation). Though Tooke and Overstone had done the same thing, the modem morphology of cycles dates from Juglar. And so does, in the same sense, 'periodicity.' This morphology of a 'periodic' process is what he meant when he proudly claimed to have discovered the 'law of crises' without any preconceived theory or hypothesis. Third, he went on to try his hand at explanation. The grand feature about this is the almost ideal way in which 'facts' and 'theory' are made to intertwine. In themselves, most of his suggestions concerning the factors that bring about the downturn (loss of cash by banks, failure of new buying) do not amount to a great deal. But all-important, was his diagnosis of the nature of depression, which he expressed with epigrammatic force in the famous sentence: 'the only cause of depression is prosperity.' This means that depressions are nothing but adaptations of the economic system to the situations created by the preceding prosperities and that, in consequence, the basic problem of cycle analysis reduces to the question what is it that causes prosperities—to which he failed, however, to give any satisfactory answer. (Schumpeter 1954, pp. 1123–4).

Schumpeter could not restrain from stressing again that Juglar failed to perceive cycles of different lengths, but maintained that "Juglar's merit is hardly diminished by these develoments [Kitchin's and Kondratieff's]—in fact, they only serve to enhance his historical position" (p. 1124n). Earlier on, However, Schumpeter had noted (criticising Tooke and Overstone on the same grounds) that some of their contemporaries (in particular Hyde Clarke, 1847, and Langton, 1848) recognized a multiplicity of simultaneously occurring waves (p. 743n).

6. Conclusion: fame surpassing influence

Doubtlessly Schumpeter was instrumental in Juglar's claim to fame. Yet this claim is based on rather flimsy foundations.[119] Juglar was indeed the first to use time-series with the specific aim of inquirying into the cycle, but this can hardly be defined a marriage of theory and facts,as theory was completely missing (not only from the premises, but also from the results) from Juglar's first edition, and to a great extent also from the second, as Juglar himself proudly claimed, Moore and Spiethoff immediately recognised, and modern commentators emphasise. Moreover, the time-series considered in the first edition scarcely contain any reference to prices, contrary to what Schumpetr indicates (which suggests that Schumpeter only looked at the second edition).[120] As to the morphology of the cycle, Juglar did indeed suggest a more useful characterization than did Overstone and Longfield, but a three-phases cycle[121] reflects the theoretical gap in his

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[119] Pelleissier 2000 reaches instead the opposite conclusion: he admits that, taken one by one, the statistical and historical methods have considerable shortcomings and that the theory is insufficient, but highly evaluates the novelty of their combination.

[120] On p. 51 of the first edition there is a comparison of the prices of various imported goods before and after the 1816 crisis, and a table with prices of corn, 6 data in the period 1800–1818; a handful of data for imported goods for 1824, 1825 and 1826 is given on p. 59, and again on p. 75 data are added for 1845–7, commented in 7 lines on p. 77 and again on p. 80; for more data for 1836 and 1836 are on p. 228. More extensive the tables on pp. 141 and 217, comparing crises years and the price of corn and other cereals. The bulk of data concerns banking statistics ov various kinds. Also in 1889 banking statistics provide the main part of the data presented by Juglar, but are compemented with graphics detailing the maxima and minima of prices of a dozen goods from 1858 to 1887 (1889, pp. 78–79).

[121] Which, as seen in Section 3.2., was not a novelty (see in particular **footnote 50**).

construction (as Schumpeter recognised) and needed to be completed by later writers (the more useful 4-phases cycle was suggested by Mills in 1867). The morphological characterization is not yet fully coupled, in Juglar's writings, with a precise analytical counterpart, as the prosperity remained fully unexplained in Juglar 1862, and still largely unexplained in 1889; in 1862 even the increasing tension on which the whole mechanism of crises relies is not rendered analytrically but is only based on the public's "fureure". Schumpeter also recognises that previous to Juglar there were other endogenous (or at least, semi-endogenous) interpretations of the cycle; and Juglar's own attempt (fully explicit only in the second edition) did not deliver the promise. Finally, the idea that crises are the by-product of prosperity was rather common at the time, and can hardly be seen as a novelty. Indeed, in Juglar's construction there are scarcely any ideas that were new when he was writing. Although this is not to say that he knew of them, or should have known, the elevation of Juglar to the role assigned to him by Schumpeter is surely hyperbolic. It has been conjectured that when Schumpeter synthetized Juglar's contribution in the dictum 'the only cause of depression is prosperity' he was projecting his own view into the man he elected as the first of his forerunners (Niehans, pp. 554–5); I add the further conjecture that Schumpeter based his reading on the second edition, and he projected it back another 27 years as if the first edition already carriede all the ingredients of the second. But it was not, and in these three decades, numerous articles contributed to fill the gaps left by Juglar, in all the countries subject to business fluctuations.

Juglar's original contribution marked nevertheless an advancement with respect to previous writers. Apart from having "very much excited" his contemporaries (as Ferrara remarked: 1864, p. 274), apparently for the weigh of the evidence he supplied, Juglar compiled in a single book a weath of arguments that were previously scattered in publications of a temporary nature (pamphlets, which probably circulated widely at the time but are now difficult to find even in important libraries) or in non-professional journals devoted to a number of arguments, or in financial and commercial publications. And he contributed (before Jevons, but less effectively than him, and at any rate after Evans and Wirth) to promote the use of statistical and historical methods in business cycle analysis. I see, however, his most important contribution in the explicit setting of some of the *problems* of business cycle theory: in particular, the necessity of identifying causal links between successive phases. The same problems were indeed discussed by others before him, and some had even provided better articulated and more complete answers than he did, but had not always expounded the problem as cleary as Juglar.

Juglar's influence, however, did not very much extend beyond France, and even there Juglar was only paid a formal tribute by true theorists, who tackled the problem in the terms of the requirements of current theory.[122] This is precisely the limit of Juglar's contribution: by lacking a specific theoretical perspective and having renounced to deal with the main theoretical problem concerning crises, namely their relationship to equilibrium, he could not be influential except on some marginal points (such as the definition of 'crisis', which for a while was discussed) and by further spreading, refining and supporting the very broad—but already commonplace— picture.

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[122] Niehans also maintains that Juglar's theoretical influence was limited, because the attention of economists was focussing on the stock of capital goods already at the time of Juglar's writing (1992, p. 563), while he believes the influence on empirical business-cycle research to have been decisive (p. 565). See also Hutchison's considerations cited at the end of Section 5.2.

The fact that a few of the analytical ingredients that can be found in his writings seem to reappear in the literature does not disprove the judgement that his influence was, in practice, scarce: business cycles is indeed one of the fields where ideas, especially so far as specific analytical ingredients are concerned, circulate widely and keep returning, sometimes picked up from more or less obscure sources and sometimes reinvented anew.

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