

Disproportionality and Business Cycle from Tugan-Baranovskij to Spiethoff

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Abstract: In the second half of the 19th century, German-speaking countries developed a very intense economic debate about crises. Mikhail Ivanovich Tugan-Baranovskij's analysis may be considered as the point of transition between different crisis theories and the development of organic thinking about the business cycle. It was an integral part of the German debate and had a decisive influence on Arthur Spiethoff's elaboration – perhaps the most organic analysis of the cycle developed within the German historical school.

Arthurs Spiethoff's influence was recognized by important authors such as Friedrich A. von Hayek and Joseph A. Schumpeter. Both the Austrian economists admitted their debt toward the German scholar in elaborating their business cycle theories. The present paper aims to illustrate one of the important roots in Spiethoff's approach, an approach that in turn became a crucial reference for other important economists.

Keywords: German historical school, business cycles, Spiethoff, Tugan-Baranovskij, disproportionality, Marxism.

I. INTRODUCTION

As it is well known, in the second half of the 19th century, German-speaking countries developed a very intense economic debate about crises. Mikhail Ivanovich Tugan-Baranovskij's analysis to some extent may be considered as the point of transition between different crises theories and the development of an organic thinking about the business cycle. It was an integral part of the German debate and had a decisive influence, as we shall see, on Arthur Spiethoff's elaboration – perhaps the most organic analysis of the cycle developed within the German historical school.

In this paper we wish to focus on the comparison between Spiethoff and Tugan-Baranovskij from three perspectives:

- business cycle theory;
- Spiethoff's criticism toward Tugan's approach limitations;
- the emergence of methodological similarities.

II. TUGAN BARANOVSKIJ'S VISION

The ideas that Tugan-Baranovskij (1865-1919)¹ offers scholars are truly varied. From the standpoint of

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economic analysis, the central element is the study of the capitalist system and the cyclical trend². The publication (in Russia in 1894) of his doctoral dissertation on economic crises in England³ and especially its German edition (1901) reached as a bolt from the blue the intellectual Marxist scene. In fact, although taking up the reproduction schemes of the second book of Marx's *Capital*, Tugan contests its fundamental conclusions.

Marx believed, contrary to many Marxists who adopted an under-consumption approach, that the crisis of capitalism is linked with the tendency of the profit rate to fall. Although Marx did not explicitly outline a theory of collapse, he insisted on the unsustainable nature of capitalism from a strictly economic point of view. Tugan-Baranovskij criticised the very roots of this setting, emphasising the disproportionality theory of

²It is worth mentioning other lines of thought where studies by the Russian economist have had a significant impact. Firstly, the acceptance of Kantian ethics saw Tugan-Baranovskij achieve a far from negligible analytical result. Nove (1972:114 and 119-120), Makasheva (2008:2) and Barnett (2000:116) emphasised Tugan-Baranovskij's attempt to elaborate a new theory of value, based on combining the theory of value-labour and the new principles of marginal utility. In Tugan-Baranovskij (1890) and Tugan-Baranovskij (1918), there are explicit references to Menger precisely as regards marginal utility; see Barnett (2000: 118); whereas Tugan-Baranovskij ([1905] 1970:311) argued that Böhm-Bawerk «for the sharpness and originality of his thought, takes one of the leading places among the modern theorists of political economy».

A second element that can be mentioned here in order to better contextualize Tugan-Baranovskij's thinking as regards the business cycle, is his role as a forerunner of the long-wave analysis, which was latter associated with Kondratiev. His thinking here is not articulate but his remarks in this regard certainly influenced later analysis. See Makasheva (1993) and Reijnders (1993).

Lastly, one should note the bridging role played by Tugan-Baranovskij in the debate on the circular concept of the economy between Russian and German economists. See Gilibert (1990).

³Tugan-Baranovskij (1894).

¹For an acknowledgement of the life of Tugan-Baranovskij see Nove (1972) and Kondratiev ([1923] 1998).

crises, the «first accomplished and definitive criticism of every under-consumption explanation of economic crises and, more generally, of the dynamics of the capitalist economy» (Colacchio 1998:4).

II.1. Marx's Reproduction Schemes and Crises

Let's proceed in orderly fashion. A brief review of Marx's thinking will be necessary in order to grasp the continuity between Tugan-Baranovskij and Spiethoff. For Marx, crises are not 'accidents: «the general conditions of crises, since they are independent of price fluctuations [...] must be explained by the general conditions of capitalist production» (Marx [1905] 1955:566). They are the synthesis of all the systemic contradictions.

This is why it is not possible to find in Marx a systematic discussion of business cycles, which appears instead with many insights throughout the Marx's work⁴, in the general analysis of capitalist dynamics. The German economist identified several reasons capable of leading the system to a crisis⁵.

- 1) In a monetary economy, sale and purchase are independent acts. For the system to continue functioning, the exchange circuit must not be interrupted, since the expenditure of one capitalist is the condition whereby another capitalist can sell products, and so on. The interruption of the process can lead to a crisis.
- 2) The nature of money. It is not only an intermediary for exchange but also a means of payment, value reserve and basis of credit.
- 3) The separation of the production process from the circulation process that no longer intersect in linear fashion.
- 4) Capitalism embodies a tendency to expand production through continual technological innovation. Consequently, supply and demand of goods both grow, but do so independently. Moreover, there is nothing to ensure that the accumulation grows in a manner that meets the sectorial proportions needed for reproduction. The crisis, in this case, is a process of adjustment in an effort to find balanced proportions.

In Book II of *Capital*, Marx built the hypothesis of an economic circuit described through schemes of simple reproduction⁶ and expanded reproduction⁷. Firstly, Marx divided the production system into two macro-sectors⁸: means of production and consumption goods⁹. In the simple reproduction scheme, profits are not re-invested but spent entirely on consumption goods. The value of production in each sector is given by the sum of the relative share of value obtained from the means of production used (constant capital, c), wages (variable capital, v) and capital gains (profit, s). Therefore, if we call the means of production sector '1' and the consumer goods sector '2', we can express the value of production V in each sector as follows:

$$V1 = c1 + v1 + s1 \quad (a)$$

$$V2 = c2 + v2 + s2 \quad (b)$$

This can be used to infer that the total of consumer goods required by the economic system is given by sum of wages and profits in the two sectors ($v1 + s1 + v2 + s2$). Demand for capital goods, on the other hand, is given by $c1 + c2$.

Each branch also produces some of its own needs, while excess production is needed for inter-sector exchange. The system is obviously balanced if the surplus production in each sector finds an outlet in the needs of the other. The condition of equilibrium is therefore the following:

$$c2 = v1 + s1 \quad (c)$$

This is the condition of equilibrium, except that nothing in the system ensures that the exchange will take place in precisely these proportions.

In the expanded reproduction scheme, capitalists do not consume all profits but use a part of them to expand production, i.e. re-investment; q is the share of the accumulated surplus that will be re-used for additional investments in constant capital ($\delta c1 + \delta c2$) and variable capital ($\delta v1 + \delta v2$). The share of the surplus intended for consumption goods will therefore

⁴For a clear analysis of the concept of crisis in Marx's thought see especially Sweezy ([1942] 1951:179-242).

⁵See Besomi (2006:150-152) and Marx ([1905] 1955:543-590).

⁶Marx ([1885] 2006:474-584).

⁷Marx ([1885] 2006:585-623).

⁸This division was the basis for many subsequent theories of the cycle. In particular, the explanations based on over-investment, be they monetary or non-monetary, refer to the existence of a systematic difference between the production trends for consumer goods and investment goods. This basic assumption is firmly criticised by Tinbergen (1942:144), since – in his opinion – it would be belied by empirical evidence.

⁹For the explanation of schemes we refer to the summary in Besomi (2006:153-154).

be $(1 - q) \cdot V2$, i.e. the total consumer goods ($c2 + v2 + s2$), will be requested in part by workers and in part by capitalists; the firsts will demand a share equivalent to the sum of the former wages plus the related variation ($v1 + v2 + \delta v1 + \delta v2$); capitalists, on the other hand, will demand a portion of the surplus value equal to $(1 - q)$, i.e. $(1 - q)(s1 + s2)$.

$V1$, i.e. $(c1 + v1 + s1)$, must settle at a value capable of reproducing constant capital ($c1 + c2$) as well as broader production ($\delta c1 + \delta c2$); the part of the means of production dedicated to the latter purpose will be $q(s1 + s2)$.

The condition of equilibrium for the simple reproduction scheme, (c), will change as follows:

$$v1 + \delta v1 + (1 - q)s1 = c2 + \delta c2 \quad (d)$$

(d), in expressing the condition of equilibrium, declares that capitalists and workers in the production sector must spend on consumer goods a value equal to the constant capital required by the consumer goods sector. It is only in this way that excess production can be turned into profit.

However, maintaining such conditions of equilibrium

is not straightforward: besides the obstacles to simple reproduction mentioned above, the accumulation of capital brings additional difficulties, as maintaining proportions also requires that the accumulation rates in the two departments are consistent with the material requirements of production, especially the changes brought about by technological progress (Besomi 2006:154).

Yet Marxian analysis, whereby the disproportion in production sectors creates the possibility of crises¹⁰, goes further to define crises as an intrinsic and necessary characteristic of the system¹¹, in view of the tendency of profit rate to fall¹². According to Marx, while maintaining exploitation levels, if constant capital increases in relation to the work of workers, i.e. if c/v increases, then the rate of profit cannot but go down¹³. The use of constant capital, then, is a consequence of capitalist dynamics. This situation leads to lower prices.

For in Marxian terms, the rate of surplus value is given by the ratio between the absolute value of the surplus and variable capital or work (s/v) and that the rate of profit is given by the ratio between the surplus and total capital (s/C , where $C = c + v$), then, if workers' salaries remain fixed and consequently v does not change, with advances in technology, even if the added value remains unchanged, the rate of profit tends to fall because what actually increases is C . The only way to deal with this situation is to do without v in the same proportion as the increase in c , or attempt to increase added value drastically, i.e. the rate of exploitation.

Then, if the wage level remains constant, the rate of profit will fall, opening up the possibility of a crisis, since an insufficient rate of profit discourages investments. Naturally, the crisis may start in only one area, where the rate of profit is insufficient. Yet concatenations between sectors and the need for continuous exchange seen above mean that the crisis spreads to the entire economic system. It initially appears as over-production and then as destruction of capital. This in turn creates the condition for the elimination of the cause of the crisis, i.e. excess accumulated capital. The crisis therefore becomes the temporary solution for disequilibrium in the economic system, which could not be solved within the framework of the former inter-sectoral reports. Given the particular character of capitalist accumulation, crises as the recurrence of fluctuations and their periodicity are inevitable¹⁴.

Obviously, this does not exclude that a component of the crisis may consist of what Sweezy ([1942] 1951: 207) defines as 'revenue crises', associated with the impossibility for capitalists to sell their products at a suitable price. They may be caused by a disproportion¹⁵ between production sectors or under-consumption by the masses¹⁶.

In conclusion, Marx was «clearly aware of the existence of the business cycle. He was perhaps the first economist who developed a crisis theory. Not only; but he was evidently aware of the uniqueness of the cycle problem and the development problem: the cycle, for Marx, is the form that accumulation – development – effectively takes in capitalist society» (Sylos Labini [1954] 1977: 35).

¹⁰Mises ([1948 & 1950] 2000: 158) himself admits the possibility of partial over-production, precisely because of the disproportion between sectors.

¹¹Marx ([1905] 1955: 590): «All the contradictions of bourgeois production collectively manifest themselves in general world crises».

¹²Marx ([1894] 2006: 271-340).

¹³Marx ([1894] 2006: 272).

¹⁴Besomi (2006:157).

¹⁵De Vecchi (1993:39).

¹⁶For the relationship between Marx and under-consumption theories see Schumpeter ([1954] 2006:716-719) and De Vecchi (1993:42).

II.2. Heterodox Marxism in Tugan-Baranovskij

In the Marxist sphere, Tugan-Baranovskij was the main architect of the spread of a business cycle theory based on the concept of disproportion, denying that crises are produced by the tendency of the profit rate to fall or by under-consumption by the masses¹⁷. His analysis undoubtedly found its basis in Marxist theory and used Marxian tools, but also included significant elements of heterodoxy. Tugan-Baranovskij¹⁸ saw no technical reason imposing limits on the development and harmonious functioning of the capitalist system. In addition, while not denying the role of poverty of the masses¹⁹, he did not attribute a decisive role to it for the onset of crises. In his opinion, the level of social consumption, so dear to Marxists²⁰, is entirely irrelevant in relation to the possibility of profit and accumulation. His fundamental conclusions, briefly, are:

- a. capitalism can develop indefinitely, producing more and more capital goods;
- b. it is pointless to speak of crises arising from under-consumption or (which is the same thing) insufficient purchasing power;
- c. a crisis is generated in a production sector because of the disproportional distribution of the social work inherent in capitalist anarchy²¹; it can be resolved through planning;
- d. the crisis, by allowing the accumulation of idle capital and determining the fall in the interest rate, creates the conditions for a new boom, activated by investing this capital in new economic initiatives;
- e. the consequent acceleration of investments, by generating higher prices and interest rates,

means that the availability of capital runs out and an over-production crisis arises and then degenerates into a general crisis.

Tugan-Baranovskij's theoretical system is based on the use of reproduction schemes²², yet his analysis of them led him to the conclusion that capitalism will never fall, while society is transformed into a growing group of parasites living on the producers' backs²³. In any case, Tugan-Baranovskij shared an essential point of view with Marx: the logic of capitalism is production for production's sake and not that of consumer-related production. In this clear distinction between production and consumption, he was certainly more Marxist than his critics, who on the contrary were much more inclined to claim that all production must be linked to consumption²⁴.

Tugan-Baranovskij's analysis unfolds on two levels: a market theory, based on the disproportionality concept, and a business cycle theory. However, these aspects are linked and cannot be considered separately. It is no coincidence that Tugan complained about the poor reception in academic circles only of the first part of his construct²⁵.

Let's take a more detailed look. Tugan-Baranovskij focused on investments in capital goods, technology and production assets. They feed capitalist dynamics. Using Marxist reproduction schemes, the Ukrainian economist demonstrated how such investments are always possible and how they exclude the level of consumption²⁶. Inasmuch, through the progressive replacement of men by machines we can witness – only in appearance paradoxically – a decline in social consumption at the same time as an increase in products²⁷: machines are continually produced to build more machines to the ultimate extent that a single worker, the only wage earner and consequently consumer, controls all production. It is only a disproportion between the various branches of production, i.e. an erroneous distribution of social work among production sectors, which can generate sectorial over-production which in turn causes general

¹⁷Sweezy ([1942] 1951:210-211).

¹⁸For useful summaries of Tugan-Baranovskij's theories refer to Besomi (2006), Kowal (1973), Colacchio (1998; 2005). For an overview of works by and about Tugan-Baranovskij, on the other hand, see Amato (1980; 1981).

¹⁹Tugan-Baranovskij ([1901b] 2002:26).

²⁰The reaction by the Marxist environment to Tugan-Baranovskij's work about crises was one of general condemnation. Moreover, the Ukrainian economist «undermined the under-consumption foundations sustained by Marx's followers, positions that foreshadowed the coming decline of industrial production, in that capitalism was already launched towards an inevitable phase of chronic depression or stagnation in productive activity»; Colacchio (1998:3). Orthodox Marxists could only perceive Tugan's work as a revisionist attack and hurried to review it with caustic criticism. This is especially evident in Kautsky ([1901-02], 1970) and Schmidt ([1901] 1970) but even Luxemburg ([1913] 1974) criticism is particularly lively.

²¹On disproportionality in the distribution of labour also see Hayek ([1939] 1975:25-26). However, the Austrian economist attributed disproportionalities to inflationary policies distorting the allocation of capital and labour. In this regard, Hayek mentioned the Ricardo effect.

²²The German translation of Tugan's work prompted, in German spheres, a broad debate about Marx's reproduction schemes; Gilbert (1990:388). Tugan-Baranovskij added luxury goods to the two traditional areas identified by Marx (consumer goods and means of production); see Reijnders (2007:5).

²³See Perrotta (1974:25-26).

²⁴On Marxist criticisms of Tugan as regards this point see Sweezy ([1942] 1951:226-227).

²⁵See Besomi (2006:148).

²⁶Colacchio (2005) implemented a formalisation of Tugan-Baranovskij's numeric representation.

²⁷Tugan-Baranovskij ([1901b] 2002:20-21; [1905] 1970:322-324).

over-production²⁸. The problem could be solved by economic organisation and planning – which are impossible under capitalism²⁹ since entrepreneurs make discretionary choices and the context only generates *ex post* regulations. Monetary mediation in transactions, then, does nothing but worsen the situation³⁰. Only a centralised organisation for the distribution can work around these problems by eliminating every limit to the technical functioning of capitalism.

This analysis, in Tugan-Baranovskij, is closely linked to the explanation of economic fluctuations. Initially, the Ukrainian economist denied that it is possible to identify a mathematical periodicity in fluctuations, although trends may be seen having a cycle duration of approximately 8-11 years³¹. During the crisis, arising through a lack of coordination, while investments and social consumption suffer from market dynamics, certain surpluses continue to accumulate uninterrupted, unaffected by the crisis. This gives rise to the formation of capital available in the banks (the reason why these savings are not progressively invested as they are formed is due to the disorganised nature of capitalist economy), while at the same time interest rates continue to fall. It is during the depression that «enormous capital sums accumulate in the banks, looking in vain for an investment outlet» (Tugan-Baranovskij [1901b] 2002:4).

Yet as soon as investors become willing to invest their funds for profitable purposes, once the rate of interest they accept comes down sufficiently, the dam behind which loan funds have been accumulated will collapse and the money will be invested. When this happens, purchases made using borrowed money bring about prosperity (Kowal 1973:333).

Economic activity, driven by investments in production goods, finds new vigour and the ascending

phase of the cycle begins again. However, over time, not invested loan funds come to an end. This is because the high prices set off by expansion stimulate profit expectations but equally set off an expansion in credit and speculation, thereby accelerating the depletion of available capital³². Once it runs out, available capital becomes scarce and further expansion cannot be financed. Interest rates begin to rise again, bank reserves fall to the point of alarm and prosperity ends in depression, driven by the collapse of credit and general panic. Depression cyclically creates the conditions for a new start and a new cycle.

Panic is the death of credit. However, credit has the ability to return to life, and its life cycle is the modern industrial cycle. The first period of a credit cycle (the post-panic period) immediately follows the end of a panic. At this time, the discount rate becomes low and the supply of loan capital on the money market exceeds demand (Tugan-Baranovskij [1901a] 2002:39-40).

In short, disproportionality is the actual cause of the crisis³³, while credit generates cyclic alternation and makes difficult situations even worse³⁴.

Given this vision, Tugan-Baranovskij suggested that political economy can only «predict that capitalism will certainly not collapse because of a lack of markets» (Tugan-Baranovskij, [1905] 1970:329). However, he – like all Marxists – was convinced that socialism will replace capitalism. This will not happen because of the economic unsustainability of the system but for ethical reasons. Mention can be made briefly here of Tugan's vision of the destiny of capitalism, without entering into the 'collapse' debate³⁵ of the times. As explained by Makasheva (2008), the Russian economist embodied a firm commitment to Kantian ethics, which saw him insisting that the limit of capitalism is the inversion of the means/end ratio that it determines³⁶. Such an economic system has a tendency to exploit people, turning them from an end into a means, thereby contradicting the supreme norm of Kantian ethics³⁷, whereby man must never be viewed as a means. In capitalism, capital turns against man but this state of

²⁸Tugan-Baranovskij ([1901b] 2002:10): «We have seen how general overproduction of goods arises in the money economy. The basis for general overproduction lies in a partial overproduction. Some goods are produced in quantities that exceed normal demand. Their prices fall. The fall in money income reduces the purchasing power of the owners of these goods. There ensues a fall in the prices of all those goods in whose purchase this purchasing power is exercised, so that as a result of the excessive production of some goods, all goods turn out to be present in excess».

²⁹For Tugan-Baranovskij, the following two intrinsic contradictions of capitalism are precisely the basis of crisis: 1) the fact that means of production belong to those who are not directly involved in production, and 2) the lack of planning in social production, while production is well-organised in personal business. Tugan-Baranovskij ([1901a] 2002:30).

³⁰Tugan-Baranovskij ([1901b] 2002:9-10).

³¹Tugan-Baranovskij ([1901a] 2002:29).

³²Tugan-Baranovskij ([1901a] 2002:39).

³³See also Huerta de Soto ([1998] 2006:468-469).

³⁴Besomi (2006:162).

³⁵A very broad overview of the debate about the collapse of capitalism in the Marxist environment is provided in Sweezy ([1942] 1951:247-304).

³⁶As for Tugan-Baranovskij's ethical position, associated in particular with the thinking of Kant, see also remarks by Barnett (2004:82-83).

³⁷Tugan-Baranovskij ([1905] 1970:330).

affairs becomes an awareness that forges a general moral conscience capable of combating capitalism itself: «humanity will never achieve socialism as a gift of blind, elementary economic forces. Quite the opposite: the new social order will arise from a conscious effort of humanity; it will have to be a conquest» (Tugan-Baranovskij, [1905] 1970:332).

III. SPIETHOFF'S REPRISÉ OF TUGAN-BARANOVSKIJ'S RESEARCH PROGRAM

Keynes, Schumpeter and Hayek clearly acknowledged a theoretical continuity between Tugan-Baranovskij and Arthur Spiethoff. Several contemporary historians of economic thought had also focused on such continuity. In particular, Hagemann (1999:97) highlighted that the German economist «was [...] strongly influenced by Tugan-Baranovsky's seminal work, emphasizing over-investment in the means of production as the dominant cause of modern fluctuations». In addition, Stanca (2001:32-33) identified in Tugan-Baranovskij's publication discussing the commercial crises in England (1894) as the crucial moment in the birth of the business cycle theory, since this work had «the merit of having clearly stated for the first time the fact that the causes of fluctuations must be sought in the relationship between investment and savings», and especially in the factors that generate over-investment; this, Stanca added, set in motion a series of non-monetary theories of over-investment, and particularly contributions by Spiethoff, Cassel and Robertson.

More than anything else, however, a remark by Tugan-Baranovskij himself becomes significant, who saw Spiethoff as the only economist capable of following, without separating them, his market and cycle theories. In fact, the Ukrainian scholar, in highlighting how his analysis of the cycle had been well-received in scientific spheres and used as a basis for investigations by many economists (especially Spiethoff, Pohle and Eulenburg), also added that his market theory, in contrast, had been followed by only a few authors, and Spiethoff in particular³⁸.

Tugan-Baranovskij's influence on Spiethoff³⁹ emerges with reference to the following points:

1. dichotomy between the production goods and consumer goods;
2. centrality of the former over the latter in capitalist dynamics;
3. generation of over-production, because of the acceleration in investments, in capital goods production sectors.

The German edition of the Ukrainian economist's work was published in 1901; it was reviewed by Spiethoff in 1903⁴⁰, but the echoes of those reflections are already identifiable in the lecture by the German professor in Berlin at a meeting sponsored by the Association for Political Science on 17 December 1901⁴¹. This marked the beginning of Spiethoff's crises and cycles analysis.

The German economist's assessment of the work of Tugan in his review was ambivalent: Spiethoff appreciated the section dealing with commercial crises in England but also had several points of criticism. The main merit of the work, according to Spiethoff (1903:332), is the combination of an excellent theoretical analysis with a great wealth of historical examples. However, the Ukrainian economist's willingness to refer to Marx, despite not sharing the essential points of his thought, means that his work is not balanced⁴². Spiethoff's second criticism concerns the possibility, mentioned by Tugan-Baranovskij as regards England in the first half of the nineteenth century, that over-production may occur in the consumer goods sector: this point is meticulously analysed and questioned in the review⁴³. Spiethoff felt it necessary to distinguish between the concepts of over-production and crisis, which Tugan on the other hand used interchangeably⁴⁴. In addition, he strongly criticised Tugan's denial of the possibility of the depletion or lack of capital in the expanded production process⁴⁵. In any case, Spiethoff – while emphasising the shortcomings in Tugan-Baranovskij's study, concluded his assessment with an appreciation of the attempt to combine theoretical analysis and empirical historical exploration.

Verlangt man von einer wissenschaftlichen Krisenmonographie, dass sie einerseits ihre

³⁸See Besomi (2006:148).

³⁹Mention can be briefly made of the fact that, as pointed out by Gioia (1996:362), it is impossible to find even a single influence in Spiethoff's work; similarly, it is not possible to identify his theory of the cycle merely as a theory of over-investment. This would not take account of the confrontation he experienced with many other economists and the complexity of his methodological approach.

⁴⁰See Spiethoff (1903:331-335).

⁴¹See Spiethoff ([1902] 2002).

⁴²Spiethoff (1903:333).

⁴³Spiethoff (1903:343-344).

⁴⁴Spiethoff (1903:354).

⁴⁵Spiethoff (1903:345-349).

Theorie durch realistische Beobachtungen zu fundamentieren suche, dass sie andererseits aber auch das empirische Tatsachenmaterial theoretische meistert und fruktifiziert, so ist das Buch von Tugan die erste wissenschaftliche Krisenmonographie (Spiethoff 1903:355).

As is well known, Spiethoff made this relationship between theory and historical review the central element of his scientific-methodological approach⁴⁶.

Spiethoff also took up the Marxian distinction between sectors that produce means of production and those dedicated to consumer goods. Nevertheless, while Spiethoff on the one hand, following Marx, insisted on the motivation of profit and the thirst for profit of entrepreneurs, he turned to Tugan when emphasising the centrality of the disproportions between the production sectors and the genesis of partial over-productions (in capital-intensive sectors), that then extend into the entire economic system.

According to Spiethoff, a preliminary distinction must be done between over-production that ends a boom period and is both part and cause of a general economic crisis and over-production which is the result of profound and chronic depression (this second type of over-production is a consequence of the crisis)⁴⁷. Among the various types of possible over-productions, despite all being the outcome of a disequilibrium between production and consumption, Spiethoff explicitly mentioned the case of *disproportional production*⁴⁸; the concept was still rather embryonic at the beginning of the century and was better clarified and defined by the German economist in 1925.

The means of production may be wrongly distributed, so that overproduction in one place corresponds to insufficient production in another (disproportionate production). Recent research has shown overinvestment to be the most important form. This kind of overproduction is concentrated in indirect consumption goods and is caused by an excess of investment for the construction of industrial plant and long-term public utilities (investment goods) over both demand and disposable savings (Spiethoff [1925] 2002:113-114).

This step evidently followed Tugan-Baranovskij, to whom Spiethoff referred explicitly when talking in general terms about the theoretical approach of disproportionality in order to link this phenomenon with excess investment in means of production sectors and release it from the Marxian (and Tuganian) concept of disproportionality as a necessary manifestation of capitalist dynamics and the private property system.

The doctrine of the misallocation of productive forces is given a different foundation when it is linked to the distribution of income, and an excessive increase in the means of production is regarded as a forced measure for recipients of surplus value if they want to realise the surplus value. It may well be that as a rule the main focus of overproduction is on goods for reproductive consumption, but I do not believe that it is correct to see excessive reproductive consumption and occasional overinvestment in production facilities as forced measures of the present system of ownership for the realisation of surplus value. Any impartial observation of the boom and over-speculation in which these over-investments occur shows that not only do they not arise from any predicament but, on the contrary, they take place with all of credit's tricks and exaggerations. This whole line of argument appears to take account only of that part of production which produces consumer goods and whose sales can indeed be reduced by capital formation (Spiethoff [1902] 2002:49-50).

However, Spiethoff added, it is precisely a lack of capital seeking investment in the other branch of production – the one producing means of production – which will create difficulties towards the end of the boom. Sales in this field may stagnate for two reasons: a lack of demand for new plants and a shortage of the capital needed to use means of production to create such plants. And, as regards Tugan's thinking, the German economist said:

Tugan-Baranovsky, the most recent advocate of this line of thought, has indeed abandoned the view that disproportionality is a necessary consequence of private property and the present distribution of income. He says: 'If social production were organised in a planned manner, if those directing production had complete knowledge of production and the power to shift labour of capital freely from one

⁴⁶See, in particular, Spiethoff ([1925] 2002:109-112; 1952; 1953; 1970). For an analysis of the history-theory relationship in the German economist, see Gioia (1996; 1997).

⁴⁷Spiethoff ([1902] 2002:47).

⁴⁸Spiethoff ([1902] 2002:48).

branch of production to another, then, no matter how low society's consumption might be, the supply of goods could not exceed the demand. But the accumulation of capital in conjunction with a complete planlessness of social production and the anarchy prevailing in the goods market, inevitably leads to crises' (Spiethoff [1902] 2002:50).

Spiethoff noted how in Tugan there had been a change in thinking: it was no longer the private property system that generated over-production but the social order that was apparently unable to allocate production forces proportionally. Yet Spiethoff added that the possibility of overcoming this gap by a socialist order is merely a matter of faith: «it is certain, however, that even its leaders will not have 'the power to shift labour and capital freely from one branch of production to another'. This achievement only occurs in logical deductions; in the real world, it will always impossible» (Spiethoff [1902] 2002:50).

Spiethoff therefore insisted on the centrality of over-production as a manifestation of the over-investment seen in means of production sector and the role of credit. However, he denied Tugan's assumption that the disproportion is generated by the capitalist system and, in particular, the conclusion that a planned economy could avoid disproportions and crises.

Spiethoff felt that the causes of overproduction should not be sought in the property system or in general economic characteristics; they will rather derive from the boom mechanism. It is here, therefore, that Spiethoff outlined the first draft of his cycle theory. Like Tugan, he based it on a preliminary theory of disproportions. The boom begins in particularly promising production sectors, where capital expects a higher profit rate than envisaged elsewhere; a general expansion starts off from here. The first effect of the boom on production goods is that existing means of production are fully used. There follows a second step, when new means of production are created; this is the period when there is an actual scarcity of goods. The new means absorb considerable investments but they still appear only on the demand side, i.e. they are in great demand but the rewards of the expanded reproduction process (increase in fixed capital) are not yet on the market, on the supply side. This occurs in a third stage, distinguished by a significant increase in prices precisely because of the previous increase in demand. In the final period, on the other hand, a situation arises that mirrors the second stage:

production has grown feverishly and floods the market looking for equivalent consumption. Yet the production rate was particularly sustained, driving prices up and thereby depressing demand for these goods. Consequently, Spiethoff concluded, the boom and subsequent over-production do not culminate in commodities and direct consumption but rather in the products of major industries serving indirect consumption⁴⁹. Like Tugan-Baranovskij, Spiethoff later believed that the capital needed for these investments is the result of the accumulation generated during the previous period of crisis⁵⁰. In short, the German economist identified four factors that cause over-production in the fourth stage of the boom:

- 1) the filling of the vacuum that has arisen through accumulated needs, and 2) the absorption of the stock of investment-seeking capital handed down from the depression, which inevitably considerably reduce reproductive consumption. This inevitable event is exacerbated by 3) a policy of price rigidity. Once these causes have undermined reproductive consumption, the resulting deterioration in income automatically disturbs direct consumption. When the whole boom has thus been mortally wounded, there are added 4) the falls in income which had already partially developed during the boom and whose depressive tendency has hitherto been suppressed, but is now triggered off (Spiethoff [1902] 2002:59-60).

Lastly, in view of the inter-relationships between economic sectors, over-production, initially referred only to the branch that produces means of production, floods into the rest of the market, leading to generalised over-production⁵¹. This, in Spiethoff's vision, is joined by certain difficulties linked with the nature of the free market, namely the difficulty of forecasting and coordination inherent in a complex system. Prices and the rate of profit are base indicators but their future trend cannot be predicted. Everything, then, can be exacerbated by speculation pushing prices and profit expectations away from the correct path⁵².

The 1901 *lecture* included all the essential elements of Spiethoff's theoretical elaboration. However, his

⁴⁹Spiethoff ([1902] 2002:53-54).

⁵⁰Spiethoff ([1902] 2002:54-55).

⁵¹Spiethoff ([1902] 2002:60).

⁵²Spiethoff ([1902] 2002:68).

Table 1: Spiethoff's Cyclic Scheme

Phase	Stage	Characteristics
Downswing or depression	Recession or slump	Decline in investments, consumption and production of steel and the interest rate
Downswing or depression	1 st revival	The production and consumption of steel and investments will stop declining and begin moving slowly upwards
Upswing	2 nd revival	Significant increases in investments. Steel consumption approaches the peak for the previous boom
Upswing	Boom	The interest rate increases; steel consumption exceeds the previous peak
Upswing	Scarcity of capital	Raising capital becomes difficult. Investments decline, interest rates are too high, steel consumption and housing shrink
Crisis		Credit collapse, suspension of numerous payments

Source: Spiethoff ([1925] 2002:157).

theory of over-production was organically integrated into an analysis of the business cycle only in 1925. After more than twenty years, the German economist's thinking certainly became more organic and reflected several influences, but he insisted that the expansion of investments is the mark and effective cause of the upswing. On the commodity markets, these investments manifest themselves in the purchase of indirect consumption goods (iron, coal, building materials), which are used in the construction of industrial plants and public utilities⁵³.

Like Tugan-Baranovskij, Spiethoff observed that at the onset of expansion, as a legacy of the previous crisis, there is a great deal of idle capital, in the presence of low interest rates. The scarcity of investment opportunities and excess funds are therefore characteristic of the first part of growth⁵⁴. In line with the Ukrainian economist, he derived the boom from the previous crisis, outlining a scheme whose essential elements are those already seen so far and that we can summarise as in Table 1.

As can be seen, therefore, Spiethoff's analysis presents strong continuity with that of Tugan-Baranovskij; however, one element, which the German author emphatically referred to in the conclusion of his 1901 lecture and 1925 essay, and which distinguishes him decisively from Tugan, is the centrality of the human-psychological factor as the cause which allows the boom mechanism to commence. For Spiethoff,

while «[t]he essence of an upswing is rising investment», it must be specified that «[t]he ultimate cause of the upward movement is of a psychological rather than an economic nature» (Spiethoff [1925] 2002:181).

Inasmuch, it is true that profit expectations generate growth in investments but it happens so because of a positive expectation emerging among people more inclined to risk, stimulating their instinct for purchasing and spirit of enterprise. These people then influence all these others. The rapid growth of wealth turns instinct into passion, generating the over-speculation⁵⁵. Similarly, a recession is first and foremost a psychological reaction to growth, over-speculation and crisis. The overheated spirit of enterprise is followed, as a psychological reaction, by its prostration⁵⁶.

Credit undoubtedly plays its part in providing entrepreneurs with the means to get going again at the end of a period of depression⁵⁷. But, to create a lodestar for capital investment, brave, enterprising men are needed, willing to risk a large part of their fortune, and often their very fate, in order to carry out an idea. They can, however, set the pace for investment and for the upswing only to the extent to which they are blessed with a success which will be as visible as a beacon (Spiethoff [1925] 2002:182-183).

The most significant element of difference between Tugan-Baranovskij and Spiethoff should probably be

⁵³Spiethoff ([1925] 2002:119).

⁵⁴Spiethoff ([1925] 2002:136).

⁵⁵Spiethoff ([1925] 2002:182).

⁵⁶Spiethoff ([1925] 2002:195).

⁵⁷Spiethoff ([1925] 2002:187).

sought in this echo of Schumpeter. The German economist, who had begun dealing with the crisis especially by measuring up to Marx's legacy and Tugan-Baranovskij's contribution, in 1925 seemed to include in his overall thinking of the business cycle a key element of all German economic literature in the 1800-1900s: the driving force of the entrepreneurial figure⁵⁸.

IV. CONCLUSIONS

The foregoing allows us to conclude without doubt that Arthur Spiethoff's theory of the business cycle does deal reckons with the drawn up previously by Tugan-Baranovskij. Firstly, like Tugan, Spiethoff outlined a market theory primarily based on disproportion. Resorting to the division of the production system implemented by Marx, both authors note the dis-coordination between the means of production sector and the consumer goods sector. For the Ukrainian economist, this dichotomy is an intrinsic part of the free market system founded on private property; the contradiction, inasmuch, may be solved through planning. For Spiethoff, on the other hand, disproportionality is certainly inherent in the system but is due to its complexity, which makes it difficult to coordinate, over and above the impossibility of forecasting on the part of players which, for the German author, cannot even be overcome by a central authority.

The scheme that Spiethoff developed, starting from the Marx's expanded reproduction concept and by the theories of Tugan-Baranovskij, is without a doubt a peak in the sphere of non-monetary theories of the business cycle based on over-investment. However, this scheme – even if we cannot dwell on this point here – had significantly influenced the entire German theoretical setting⁵⁹. As mentioned, elements of Spiethoff can be found in Schumpeter. Yet, above all, very strong connections can be traced in the semi-monetary analysis of Friedrich A. von Hayek, who developed Mises's theoretical apparatus by integrating

it with what was learnt from Spiethoff⁶⁰. Consequently, there is a non-monetary approach to the business cycle that has had a major influence even on authors taking the monetary stance⁶¹.

This relationship between Tugan-Baranovskij and Spiethoff was encountered several times in the reconstruction of different approaches to the business cycle. Mitchell ([1927] 1954:52) noted that the two authors associated crises to the consumption, savings and investment process and the imbalances inherent in it. Keynes, on his part, in the *Treatise of Money*, «sympathizes strongly with the school of Tugan-Baranovski, Hull, Spiethoff and Schumpeter, in which Tugan-Baranovski was the first and the most original representative» (Keynes, [1930] 1971)⁶².

Schumpeter highlighted the link between the two authors from a logical point of view: Tugan-Baranovskij is attributed the merit of having been the first to identify the difference in amplitude of fluctuations in the field of capital goods compared to the consumer goods field; On the other hand, Spiethoff represents the refinement and the high-point in these non-monetary interpretations of the business cycle⁶³.

Finally, Hayek did not fail to observe a line of consequentiality between the two authors. Hayek ([1941] 1952:425) spoke of a series of authors who explained the crisis as «a scarcity of circulating capital caused by an excessive conversion of circulating capital into fixed capital»; this current of thought may be traced to 1839 with Condé Raguet and had considerable influence on the crisis theory «of Karl Marx, through him on M. v. Tugan Baranowski, and through the latter on such contemporary authors as G. Cassel, A. Spiethoff and D.H. Robertson» (Hayek [1941] 1952:426), as well as, to some extent, on Hayek himself, as evidenced by Karl Kühne⁶⁴. In turn, the Austrian economist himself stressed that the «phenomenon of a scarcity of capital making it impossible to use the existing capital equipment

⁵⁸In fact, it is well known that this emphasis was not exclusive to Schumpeter. Naturally, the intellectual relationship between the young Austrian and Spiethoff was very intense and rewarding; and it should be mentioned that Spiethoff himself made stern efforts to allow the Austrian to teach at the University of Bonn, in the face of very strong opposition based on prejudice, gossip and the legacy of the *methodenstreit*; Swedberg ([1991] 1998:81-83). Similarly, it cannot be denied that Schumpeter's last works are significantly influenced by Spiethoff's methodological setting. All the more, we cannot here overlook the important contribution to analysis of the entrepreneurial function of Sombart and Max Weber. On the relationship between Spiethoff's and Schumpeter's theories of the cycle, see especially Kurz (2010).

⁵⁹On this point, see in particular Beckmann (2005).

⁶⁰As pointed out, among others, by Boccaccio (1996:89).

⁶¹Hayek ([1929] 1966:41n). To stay within the scope of the Austrian school, mention need only to be made of Spiethoffian emphasis identifiable in Lachmann ([1956] 1978:100-112). Lachmann ([1956] 1978:112-113), discussing cycle theories based on the concept of strong boom, noted the precise analysis of Cassel and Spiethoff which was then developed by Mises and Hayek.

⁶²On the influence exerted by Tugan-Baranovskij on Keynes and Keynesian macroeconomics, see Reijnders (2007:8-10). Seligman (1962:95) remarked that Keynes's main ideas «can be traced to Tugan-Baranovsky, via Arthur Spiethoff and Knut Wicksell».

⁶³Schumpeter (2006:1092).

⁶⁴See Ebenstein ([2001] 2009:434).

appears to me the central point of the true explanation of crises» (Hayek [1933] 1975:149)⁶⁵.

Nevertheless, it seems to us that a significant aspect has been ignored as regards the methodological approach of the two authors. We highlighted above Spiethoff appreciation of Tugan-Baranovskij's attempt to build a historically focused cycle theory, with a wealth of references to actual historical situations. This is exactly what Spiethoff sought to achieve with *Krisen* – which can be considered as the most important element of continuity with the thought of Karl Marx.

Undoubtedly, it was a partly unfinished attempt: methodological statements are plentiful while the development of a full-scale *theory of economic Gestalt* based on such an approach is, it seems to us, rather sketchy.

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