Schumpeter's New Combinations

Revisiting his *Theorie der wirtschaftlichen Entwicklung* on the Occasion of its Centenary[*]

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1. Introduction

Joseph Alois Schumpeter's *Theorie der wirtschaftlichen Entwicklung* (*Theory of Economic Development*) – henceforth *Theorie* – has rightly been praised as a major contribution to economic theory. One hundred years after its first publication in 1911 (in the impressum: 1912) it is still worth reading, as I discovered recently when preparing a volume together with Richard Sturn dedicated to Schumpeter's life, work and influence (Kurz and Sturn 2012a).[1] I was surprised to see that in earlier readings of the book or parts of it, some of Schumpeter's insights had escaped my attention. I also re-read carefully Eugen von Böhm-Bawerk's criticism of Schumpeter's 'dynamic theory of profits', Schumpeter's reply and Böhm-Bawerk's rejoinder. Their heated discussion, as well as Schumpeter's gradually weakening enthusiasm for Léon Walras's theory of general equilibrium, clearly show in which ways Schumpeter parted company with what was about to become the mainstream in economics and followed novel lines of thought. The latter were influenced by the contributions of other authors, most notably Karl Marx. They involved, in Schumpeter's words 'new combinations' of already existing ideas, which he then reconfigured and combined with some of his own novel ideas.

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[1] In the following all translations from the first edition of *Theorie* and of sources of which no German version exists are mine.

In this paper I focus attention on Schumpeter's main achievements in his book and how these relate to the contributions of other authors and to other economic doctrines. I also show how my interpretation concurs with, or deviates from, some received views on Schumpeter. Given the enormous amount of literature devoted to *Theorie* and Schumpeter's work more generally, I have had to be very selective. Section 2 recapitulates in 'desperate brevity' (one of Schumpeter's favourite expressions) the essence of his dynamic view of capitalism and the reasons for the system's restlessness; the section presents Schumpeter's doctrine in *Theorie* in a nutshell. The following sections deal with the relationship between Schumpeter's theory and the theories of Karl Marx (Section 3), Eugen von Böhm-Bawerk (Section 4) and John Maynard Keynes (Section 5). Schumpeter's position vis-à-vis Léon Walras's general equilibrium theory, about which a lot has been written, will be touched upon only in passing. It will be argued that while he was deeply indepted to Marx's vision of capitalism as a dynamic system, incessantly transforming itself from within, he was not, as has been contended, a 'Marxist'. He rather sought to ward off the Marxist and socialist assault on capitalism in terms, which interestingly enough consisted partly in a reinterpretation and recombination of concepts he had encountered in Marx. Indeed, some of the most famous concepts commonly associated with the name of Schumpeter, such as the one of 'new combinations', can be traced back to Marx. Interestingly, prior to Schumpeter Eugen von Böhm-Bawerk had been concerned with refuting the socialist attack on capitalism, and therefore it comes as a surprise how little the analyses of the two comrades in arms do have in common. In fact, setting aside lip service paid to his former peer, Schumpeter rejected basically all major ideas and concepts Böhm-Bawerk had elaborated and which gradually entered the marginalist 'tool box'. Whilst, as is well known, Schumpeter was very critical of Keynes's analysis in the *General Theory*, he agreed broadly with the Cantabrigian's explanation of the rate of interest. However, what appears to have been overlooked up until now is that Schumpeter had a much more sophisticated view of the relationship between the rate of interest and investment demand a quarter of a century before Keynes's magnum opus. Section 6 concludes.

Before I embark on my undertaking, two closely related observations are apposite. First, in recent times a host of contributions have shed new and occasionally much clearer light on aspects of Schumpeter's achievements and how these relate to the literature he consulted. Out of the huge and growing number of papers and books I should like to mention McCraw (2007) and Anderson (2009, 2011), which complement Swedberg's earlier study (1991), for comprehensive treatments of Schumpeter, the man and the scholar (see also Kurz and Sturn

2012a); Becker and Knudsen (2002) for a presentation and discussion of material contained only in the first German edition of *Theorie*, but then omitted from later German editions as well as from the 1934 English translation; Langlois (2002) and Knudsen and Swedberg (2009) for discussions of Schumpeter's concept of entrepreneurship and its change or rather constancy over time and the problematic idea of 'two Schumpeter's' in some of the literature; Michaelides and Milonis (2009) for an investigation of Schumpeter's relationship with the German Historical School, which became closer as time went by (see also Kesting 1997); and Rosenberg (2011) for a treatment of Marx's legacy in the work of Schumpeter. In the following I will refer to some of these works as the argument unfolds.

The second observation concerns the intention of this paper. Is it first and foremost an exercise in the history of economic thought concerning an important work in economic theory or is it a contribution to present-day Schumpeterian economics? With Schumpeter I am inclined to think that economic analysis and its history cannot easily be disentangled. The works of great authors contain treasure troves of ideas, many of which will often not be understood upon a first encounter, given the mind-set of the reader brought up in different traditions of economic analysis or concerned with different problems. Another important reason is that the works of major authors abound with ideas and novel perspectives on economic problems that transcend the authors' capabilities of expressing them clearly, constrained as they are by the limited possibilities of language and of the analytical tools at their disposal. Important works are destined to be ill understood upon a first reading, because of the rich potentialities they embody, which get explored only as time goes by. Therefore the history of economic thought is not a subject that will pass once and for all judgements on important authors. Each generation of readers rather have to form their own opinion on writers such as Adam Smith, David Ricardo, Marx, Keynes or Schumpeter. As Schumpeter (1954: 4) stressed, studying the history of economic thought exposes the student to 'new ideas' and 'insights into the working of the human mind'. The following will exemplify that ideas enunciated for the first time a century ago may look strikingly new and fascinating to the modern economist. This tells us that the 'Whig' point of view, according to which the history of our subject is a relentless march from darkness to light, from the wrong to the right, cannot generally be sustained, although progress there certainly is here and there. However, there may also be regress in some areas during some periods. A case in point is the almost complete neglect of Schumpeter's ideas until their revival in the 1980s thanks especially to the book by Nelson and Winter (1982). As one acute observer of the history of economic analysis famously put it: certain ideas and entire theories may be 'submerged and forgotten' for long periods of time.[2] In case they eventually happen to get retrieved from oblivion, they are received like true novelties.

2. Overcoming a 'sea of darkness': the *Theorie* in a nutshell

As the motto of his book the 28-year-old Schumpeter chooses Sir Isaac Newton's: 'Hypotheses non fingo.' That is to say: I do not put forward hypotheses, but well founded propositions. Possessed of a remarkable degree of self-confidence, Schumpeter informs the reader that the book is designed to complement Walras's theory of the circular flow by a dynamic theory of the developing economy and thus overcome the 'sea of darkness' (Schumpeter 1908: 626) that hides the law of motion of the capitalist economy from our eyes.

In *Theorie* Schumpeter presupposes generally free competition, interrupted by temporary monopolies due to innovations. Later in his work and especially in his *Business Cycles* (1939) he points out that the argument would have to be adapted to the case of trustified capitalism. However, he opines that the general thrust of his argument would not be changed fundamentally.[3] In the following we focus attention on the argument in *Theorie*.

Like the hero in his book, the entrepreneur, Schumpeter is an innovator whose intellectual activity involves 'creative destruction'. Without any timidity he demolishes received ideas and theories, including some of his Viennese teachers, and replaces them by new ones. Like the entrepreneur in his book Schumpeter is no hedonist, no rationalist, who adjusts as best as he can to given conditions in the economics discipline. He is rather a scholar full of energy, seeking to revolutionize his subject and establish a new approach to the theory of capitalist development. 'Half-pathological moments' are to be taken into account in explaining entrepreneurial behaviour, he informs the reader (1912: 137).

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2 Is the 'market' for economic ideas an efficient market in the sense that it eliminates whatever is wrong and worthless and preserves whatever is right and valuable? There can be little doubt that Schumpeter considered this particular market to be also prone to bubbles and thus comparable to some extent to financial markets.

3 Langlois (2002) and Knudsen and Swedberg (2009), among others, correctly maintain that there is no sharp break between Schumpeter's analysis in *Theorie* and in *Business Cycles* as regards his concept of entrepreneurship. There is only a 'single Schumpeter', who, however, constantly refined and revised the building blocks of his analysis. The apparent changes in the latter must not blind us to the fact that it is characterised by a remarkable continuity both in vision and content.

Innovations, the ‘realisation of new combinations’ – are ‘the overwhelming fact in the economic history of the capitalist society’ (1912: 159). However, this is said to be largely neglected in received economic theories. There is only a single exception to the rule, Karl Marx’s, to whom we turn in Section 3. ‘How does the economic system continually generate the power that incessantly transforms it’ – and together with it society and culture? Nothing remains as it is. The only constant in the modern world is its permanent change. Schumpeter sees capitalism as a ‘cultural phenomenon’ and wishes to unravel its endogenous dynamism and long-run destiny, like Adam Smith and Marx before him. This necessitates the elaboration of a ‘universal social science’, which cannot be narrowly economic, but has to incorporate sociological, historical and political aspects. The upshot of Schumpeter’s multidisciplinary work is his *Capitalism, Socialism and Democracy* (1942). Traces of this broad perspective are, however, already present in *Theorie,* especially in chapter 7, which – alas! – Schumpeter deleted in later editions together with some other sections in the book.[4] In *Theorie* the economic aspect dominates for the obvious reason that, according to Schumpeter, the changes under consideration are first and foremost triggered by economic evolution and because in his view the explanatory potential of economic analysis in this regard has not yet been fully exploited.

Schumpeter conceives of economic development as processes of transition between states of ‘circular flows’, that is, stationary economic conditions. He insists that in the circular flow there are neither entrepreneurs nor capital nor profits nor interest. There are only static firms and the only incomes paid are wages of labour and rents of land. It is the entrepreneur who awakens Sleeping Beauty from its slumber in terms of new goods, new methods of production, new forms of organisation, new markets for his products and raw materials etc. The innovator typically enters the scene without the means to realise his projects. The entrepreneurial function, Schumpeter insists, ‘as a matter of principle is not tied to the ownership of wealth’ (1912: 206). The entrepreneur needs credit, which he gets from the banker, who can be said ‘to create additional money’ (1912: 197). In this way he opens ‘the gateway to the productive resources of the economy and provides the entrepreneur with a mandate to execute his plans.’ (1912: 198) In order to become an entrepreneur the innovator has first to become a debtor. The risk, however, is to be borne by bankers, whom Schumpeter calls ‘ephors of markets’ (alluding to the five major civil servants in ancient Sparta who were

4 To readers with no command of German the scope of these omissions was bound to be unclear. Becker and Knudsen (2002) deserve the credit for having overcome this lacuna.

elected for a period of one year) (1912: 198). The banker is therefore well advised to scrutinize carefully the investment projects submitted to him: he must combine expert knowledge with a long-run orientation.

Credit is the lever of a withdrawal of resources on behalf of the innovator. In an economy in which all productive resources are fully employed, an increase in the overall demand in monetary terms leads to an increase in the prices of productive resources. The inflation induced by credit expansion can be compared to a tax on static firms, and channels into the hands of the entrepreneur the resources he needs. It is only now that 'capital', 'profits' and 'interest' enter the stage. Capital consists exclusively of the purchasing power handed over to innovators: it is 'a third *agens* needed in production in a market economy'. It is not itself productive, but a precondition to be met in order for productivity increases to obtain. Neither produced means of production nor accumulated savings are capital, as received theory contends, capital is rather credit given to new producers. Schumpeter therefore speaks of his 'purchasing power theory of capital' (1912: 255). For a process of development to take off, he maintains, *no prior savings are needed*. It suffices to give credit to the innovator. Only as a consequence of innovations will savings result from realised profits and increases in other kinds of income (rising wages and rents triggered by the increase in monetary demand of productive resources).

The money or credit market Schumpeter calls the 'main quarter of the capitalist economy' (1912: 276). Interest is a deduction from profits and is paid for the provision of liquidity.[5] Capital, profits and interest exist only in a dynamic economy, not in the circular flow – a view with which he challenges basically all existing theories, classical, Marxist, marginalist (neoclassical) or Austrian.

Profits (and interest) are transitory: 'They are both the child and the victim of development.' (1912: 322) The typical diffusion process of new economic knowledge illustrates this. Schumpeter's argument revolves around the concepts of invention, innovation and imitation. The entrepreneur is typically not also the inventor, but someone who has the talent to select from the stream of inventions those that can be marketed profitably. Inventors commonly are

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[5] The idea that interest is a deduction from profits was, of course, famously advocated in Adam Smith's *The Wealth of Nations*, an oeuvre Schumpeter held in low esteem. Close scrutiny shows, however, that the analyses of the two economists share some common elements and that Schumpeter's criticism of Smith is not always well founded. See on this Kurz (2008) and Kurz and Sturn (2012a: part II, chapter 7).

not possessed of this capacity. They focus too much on technical aspects to the detriment of economic ones. An invention is without (almost) any economic relevance, as long as it does not pass the test of the market, that is become an innovation. It is only then that the ‘first act of the drama’ unfolds – its introduction into the economic system. The successful entrepreneur is an agent of change, who breaks the ‘static spell’, opens up new economic spaces and paves the way to followers. He may at first reap high ‘monopoly profits’.

But the diffusion process is considerably accelerated only in the ‘second act of the drama’, which has two phases. In the first phase firms, following ‘the impulse of enticing profits’, try to imitate the innovator and copy his new device. This leads to an increase in the level of output of the commodity under consideration and an intensification of competition among the firms producing it. Sooner or later the price of it will be bid down towards the lower production costs. This ushers in the second phase, since now all static firms are getting into trouble. Producing so far without profits, they are now incurring losses.[6] In ‘fear of total annihilation’ they are forced to modernise their firms, production techniques and work routines. A growing swarm of firms tries to resist their extinction by imitation. Not all will survive. The drama resounds with ‘the cries of the crushed over which the wheels of the new go.’ (1912: 503)

With the diffusion and generalisation of the new, competitors will gradually catch up with the pioneering firm and undermine its monopoly position. As a consequence, ‘the profits of the entrepreneur and also his entrepreneurial function as such perish in the whirlpool of the competitors that are at his heels.’ (1912: 286) The system moves in the direction of a new circular flow, in which the ‘law of cost’ is reinstated again and the prices of commodities are again equal to their cost of production. Because of the increase in productivity entailed by innovations, in the new stationary state the incomes of the broad masses are higher than in the old state. This is Schumpeter’s version of the doctrine of the unintended consequences of self-interested and selfish behaviour, which is typically associated with the name of Adam Smith. The selfish behaviour and need for achievement of the few causes, behind their backs so to speak, an increase in the wealth of the many.

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[6] Schumpeter’s rigid zero profits assumption regarding the circular flow implies that firms that do not imitate or innovate themselves will quickly risk being driven out of the market, because they will swiftly face losses and not just shrinking profit margins as, for example, in the classical economists’ approach to the theory of innovation and technical change; see Kurz (2008).

This does not mean, as has already been indicated, that economic development has only winners and no losers. New economically useful knowledge is frequently the enemy of old knowledge. The new does not simply grow out of the old, but replaces it and 'eliminates it in competition': it is a process of 'creative destruction', as Schumpeter (1942) was to call it. The process is 'evolutionary' and will 'be enforced without and even against the will of the hedonic majority.' (1912: 184)[7] Economic development and equilibrium exclude one another. Technological and organisational change revolutionise incessantly the economic system, with far-reaching effects on the lives and thinking of people. They give birth to new products and professions and eliminate established ones. They enforce far-reaching societal and cultural changes. Harmonious advance is not the business of capitalism.

The process is necessarily cyclical: it proceeds in leaps and bounds – in 'waves of prosperity and depression'. Crises are but recurrent moments of the process. The idea that there could be economic development without ups and downs Schumpeter would have relegated to the realm of economic fiction.[8] Such cycles may be aggravated and prolonged by crises in the monetary and financial sphere, which is particularly prone to instability and might require the use of regulatory and process economic policies.[9]

Does development imply 'progress'? Schumpeter refrains from a definitive judgement: 'Whether development leads to social wellbeing or social misery is decided by its concrete content.' (1912: 492) The 'deepest sense' of development consists in providing new kinds and amounts of goods, and this it accomplishes impressively. However, the unintended

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7 On the question of how 'evolutionary' is Schumpeter's theory, see Witt (2002) and Andersen (2009, 2011).

8 Such fictions were advocated not long ago by authors such as Robert E. Lucas and Ben Bernanke – before the world experienced a period of 'great immoderation'.

9 It is perhaps interesting to note that with regard to the monetary and financial sector Adam Smith had already warned his readers that it need to be regulated because of the enormous damage it can cause (Smith 1976: II.ii.94; see also Kurz and Sturn 2012b: section 2.6.6). Smith compared the invention of paper money to 'technical progress' and significantly spoke of the 'Dædalian wings of paper money' (Smith 1976: II.ii.86). Schumpeter and his colleague at the University of Bonn and friend Arthur Spiethoff were both convinced that the instability of the financial sector typically tends to prolong depressions (see Kurz 2011b). Schumpeter (1912: 462) also opined that the system of providing credit to entrepreneurs in order to carry out new combinations can be changed without affecting the 'essential features' of capitalism. He was thus convinced that there were degrees of freedom as to the institutional organisation of the 'main quarter of the capitalist economy', and he indicated that it would be good, if the change were to be such that the sector's destabilising role would be mitigated.

consequences of this success must not be underrated: they do have the power of pushing the system socially and culturally in new and possibly not very agreeable directions.

3. Schumpeter and Marx

The relationship between the works of Schumpeter and of Marx appears still to be a matter of controversy, as a recent debate triggered by a paper by Rosenberg (2011) exemplifies (see also Elliot 1980). In the following I provide a brief account of the most important similarities and differences between the analyses of the two authors, focussing attention on aspects, which, in my view, have either been overlooked or misinterpreted in much of the existing literature. In this context I comment also on Adam Smith's contribution, because he, Marx and Schumpeter all insisted on the importance of the non-intended consequences of self-seeking behaviour, some of which may be advantageous to society at large, whereas others may be detrimental to it and, in the case of Marx and Schumpeter, question the survival of capitalism.

Economic dynamics

In *Theorie* Schumpeter identifies Léon Walras as the main representative of the 'static point of view'. Interestingly, he attributes an essentially static perspective also to his Austrian peers (Schumpeter 1912: 100). Adam Smith is credited with having undertaken probing steps into the as yet uncharted territory of economic dynamics, which, alas, did not get him very far, because he allegedly lacked imagination and analytical rigour. Whenever Smith talks of economic progress he is said not to explain it in terms of the economic process itself, that is, *endogenously,* an assessment that is difficult to sustain *vis-à-vis* Smith's concept of the 'division of labour', which turns around dynamically increasing returns to scale, as Allyn Young stressed (Young 1928), and in which cumulative and circular causation, to use Ragnar Frisch's concept, is at work. In the English version of his *magnum opus*, based on its second edition published in 1926, Schumpeter (1934: 60) insists boldly that 'economic theory in the traditional sense contributes next to nothing' to an explanation of the all-important phenomenon of economic and social development. Only a single exception is taken to be worth mentioning. About it he writes in the first edition: 'Only Marx ... has tried to deal with the development of economic life by means of economic theory ... and his attention always focuses on the aim of understanding the development of economic life as such and not only of its circular flow' (1912: 98).[10] Also in subsequent editions of the book, Marx is praised for his various achievements. Schumpeter (1934: 60 n) actually writes about his own novel conception of the economic process, that it 'overcomes a series of fundamental difficulties and thus justifies the new statement of the problem.' Interestingly he adds (1934: 60 n): 'This statement of the problem is more nearly parallel to that of Marx. For according to him there is an *internal* economic development and no mere adaptation of economic life to changing data.' Then follows the remarkable admission: 'But my structure covers only a small part of his ground' (ibid.). Schumpeter was not exactly known for his modesty, but here, at least, he displays a fair amount of it.

In his essay 'Epochen der Methoden- und Dogmengeschichte', published in 1914, Schumpeter devotes a footnote of two and a half pages to the achievements of Marx.[11] Marx's *oeuvre* is said to be 'unique' in that he tried 'to grasp the life and growth of the social body in its entirety' and wanted to develop a 'universal social science' (1914: 60). Underneath a polemical exterior there is 'thorough scientific work' (1914: 81 fn.). Marx is said 'to have not only had originality, but also scientific talent of the highest order. … When his first volume [the reference is to *Das Kapital*, 1863] appeared, there was no one who measured up to him, neither in power nor in theoretical knowledge'. And so Marx 'has become also the teacher of many non-socialists' (ibid.), including, of course, Schumpeter himself. And in the *History of Economic Analysis,* published in 1954, we read: 'Marx was one of the first to try to work out an explicit model of the capitalist process. … Marx's theory is *evolutionary* in a sense in which no other economic theory was: it tries to uncover the mechanism that, by its mere working and without the aid of external factors, turns any given state of society into another' (1954: 391; emphasis added). Schumpeter speaks also of 'Marx's social evolutionism' and adds that in Marx's view 'historical evolution is propelled by economic evolution; history is the history of class struggles' (1954: 439).

While Schumpeter's assessment of Marx's contribution appears to me to be faithful to what Marx had written, his assessment of Smith's contribution does not. *The Wealth of Nations* is essentially a book about endogenous economic, social and cultural change, in which the partly unintended consequences of self-seeking behaviour play an important role: they may retard the process of economic development and growth and may even make it go in a retrograde

10 Contrast this with John Maynard Keynes's jaundiced view of Marx.

11 Schumpeter's essay reflects the influence of Marx's *Theories of Surplus Value*, which had been edited and published for the first time by Karl Kautsky in 1905-1910, on virtually every page.

direction. As Smith famously put it: ‘A revolution of the greatest importance to the public happiness, was ... brought about by two different orders of people, who had not the least intention to serve the public’ (Smith: III.iv.17). The analyses of both Marx and Schumpeter may be seen as variations on Smith’s theme. In accordance with the Scotsman they stress the remarkable capacity of capitalism to generate wealth, but different from him both think that the unintended consequences will subvert and eventually overthrow the capitalist order and give rise to socialism.

Competition and the entrepreneur

Marx, and before him the classical economists from Adam Smith to David Ricardo and then Charles Babbage, had identified a systemic feature of capitalism as mainly responsible for the permanent revolution in the types and qualities of goods produced, in the methods of production used and in the ways in which firms and markets are organized: *competition* (see also Kurz 2010, 2011a). Marx spoke of the ‘coercive law of competition’, which keeps forcing producers to introduce new methods of production in order to gain an advantage over their competitors in given markets or new types or qualities of goods in order to escape them in newly emerging markets.[12] Competition means dynamic rivalry, and in it only the successful innovator and cunning imitator prevail. In this perspective innovations are first and foremost the result of the behaviour of agents shaped and enforced by competitive pressures. They are not so much the result of a particular inclination of a group of people characterized by exceptional capabilities – Schumpeter’s ‘entrepreneurs’. While exceptional skills and capabilities are typically advantageous in the competitive struggle, they are not the prime mover of development.[13] The impulse comes from the institutional characteristics of the capitalist economy and translates into the aspirations and actions of people. In the struggle with their ‘inimical brothers’, their competitors, capitalists are bound to innovate (or imitate) on penalty of their own ruin.

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12 Adam Smith had already insisted that ‘universal competition … *forces* every body to have recourse to [good management] for the sake of self-defence’ (1976: I.xi.b.5; emphasis added).

13 Smith stressed: ‘The difference of natural talents in different men is, in reality, much less than we are aware of; and ... is not upon many occasions so much the cause, as the effect of the division of labour. The difference between the most dissimilar characters ... seems to arise not so much from nature, as from habit, custom, and education’ (1976: I.ii.4). Smith’s view gets some support, for example, from Howe (1999), who argues that geniuses do not form a breed apart but are first and foremost the result of a unique set of circumstances and opportunities.

Marx observes that a capitalist who introduces a new and superior method of production can sell the commodities 'above their individual, but under their social value ... This augmentation of surplus-value is pocketed by him'; therefore there is *always* 'a motive for each individual capitalist to cheapen his commodities, by increasing the productiveness of labour' (Marx 1967: 317). For fear of rivals gaining a competitive advantage that endangers the existence of a capitalist as capitalist, to innovate or imitate is an existential must, enforced by competition. Modifying a famous dictum of Marx, we might say: 'Innovate, innovate! This is Moses and the prophets.'

Therefore Marx saw capitalism as a restless economic system – a hotbed incessantly in travail, where accumulation takes in embodied innovations – whose historical function was to increase labour productivity 'geometrically'. It is essentially this view of capitalism that fascinated Schumpeter and which differed significantly from the views advocated by the majority of economists then (and, we might add, today), whose main concern was with the static problem of the allocation of scarce resources to given ends and the properties of partial or general *equilibrium*.[14]

In order to get a clearer picture of the difference between the classical economists and Marx on the one hand and Schumpeter on the other regarding the issue at hand in this subsection, we may distinguish between two sides of competition. One refers to the centripetal forces competition activates, bringing order to the system and equilibrating it in a specific sense. This aspect was discussed by the classical authors in terms of the 'gravitation' of actual prices to their 'natural' or normal levels, featuring, in conditions of free competition, a uniform rate of return on capital across all industries. In Schumpeter, essentially the same centripetal forces are invoked in what he calls a 'process of statication' (*Statisierung*) (1912: 437), that is, the movement by which an innovation is absorbed into the economic system, leading towards a new circular flow, in which the 'law of cost' (1912: 309) holds again, the rate of return on capital is uniform and, unlike in the classical authors, equal to zero. The other side refers to the centrifugal forces of competition, which destabilise the economic system and force it to leave established paths and routines by revolutionising its technology and labour process, the needs and wants of people etc. This side reflects the role of entrepreneurs, which consists in creating something new and at the same time destroying something old. Their innovations

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[14] There were, of course, notable exceptions to this, such as Alfred Marshall, who was well aware of capitalism's evolutionary nature.

then re-activate the centripetal forces mentioned, which have fallen into a slumber in the circular flow.

Interpreting the classical and Schumpeterian view, one might say without too great a stretch of the imagination that the competitive capitalist economic system 'breeds' a particular brand of leaders, entrepreneurs. Or, as Schumpeter put it: the capitalist economy activates entrepreneurial dispositions and inclinations of people.[15] While Schumpeter does not deny the importance of competitive pressures in the process of economic development and growth, he relegates it essentially to the phase in which the process of the diffusion of the novelty is speeded up by firms, which imitate the successful innovator in fear of being driven out of the market. The act of innovation is instead not seen through the lens of the systemic force of competition, but through that of 'methodological individualism', a term Schumpeter (1908) had coined. In his view the prime mover of the economic system is 'a second type of economic action' (1912: 105): in addition to the genotype of 'hedonic' or 'static' men there is the genotype of 'energetic' or 'dynamic' men, who are said to be much fewer in number and to constitute an 'elite'. The latter genotype is considered the *agens* of economic development. However, later in his book he stresses that what we may call the 'entrepreneurial gene' is present in many people, to a smaller or larger degree, and as the economic system develops and innovations become a permanent part of the economic process and obstacles to them dwindle, entrepreneurship becomes ever more widespread in society. As Schumpeter insists in his debate with Böhm-Bawerk, his severest critic: 'The entrepreneurial type is separated from the static type no more sharply than the Goethe type is separated from the type of pathological idiocy: in both cases there is a gradual transition from the one to the other' (1913: 632). In the limit all agents are entrepreneurs of sorts: at first the originators of the centrifugal forces of competition, they are later subjected to its centripetal forces. One is reminded of Adam Smith's concept of 'commercial society', where everyone is to some degree a merchant or shopkeeper and a bearer of risk (Smith 1976: I.iv.1).

New combinations

Entrepreneurs carry out innovations or 'new combinations'. The latter concept is generally considered to belong to Schumpeter. However, the basic idea underlying it is, of course, much

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15 In this context it is perhaps worth recalling that according to some economic historians the usury rule helped to nourish a spirit of entrepreneurship by discriminating against certain legal forms in which financial transactions were clothed. In particular, instead of arranging for a loan the provider and user of a loan might form a partnership, which would put the burden of entrepreneurship also on the financier.

older, and even the combinatory metaphor as an abstract description of the process of invention and innovation can be traced far back in history. Adam Smith saw the emergence of the 'business of a peculiar trade … and occupation of a particular class of citizens' – that is, what we nowadays call Research, Development and Innovation (*R&D&I*) – as part and parcel of an ever deeper social division of labour. The people engaged in this business he called 'philosophers or men of speculation, whose trade it is, not to do anything, but to observe every thing; and who, upon that account, are often capable of *combining together the powers of the most distant and dissimilar objects*' (Smith 1976: I.i.9; emphasis added).

Up until now it seems to have escaped the attention of commentators that Marx explicitly used the expression 'new combinations'. He did so in the context of a discussion of the role of technical progress in capitalist development and the law of the falling tendency of the rate of profit in volume III of *Das Kapital*, edited and published posthumously by Frederick Engels in 1894 (Marx 1959: 255). Schumpeter was very well read in Marx; he may well have picked up the term from him.[16] What matters most is, of course, that the meaning they appear to attach to the term is largely the same: the systematic production of new, economically useful knowledge out of existing knowledge.

Up until now our interpretation of the relationship between the analyses of Schumpeter and Marx largely coincides with Rosenberg's (2011) admirably clear and succinct account. In terms of the two authors' common vision of capitalism as a socio-economic system that is possessed of its own internal logic and that is subjected to a process of self-transformation from within, Rosenberg (2011: 1221-22) concludes that 'Schumpeter was a Marxist' or can at least be called 'a quasi-Marxist'. However, Rosenberg's characterisation cannot be carried over to the realm of income distribution, that is, how the two authors conceive of the sharing out of the product amongst different claimants – workers, land owners, industrial capitalists, finance capitalists and innovators. In this regard Schumpeter parts company with Marx.[17] The litmus test of Schumpeter's alleged Marxism is whether he sees profits, like Marx, as resulting from the 'exploitation' of workers. He clearly does not. In fact, he is intent on positively and definitively refuting Marx's claim – a refutation, which in his view his former

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16 The concept has recently been revived in Martin Weitzman's model of 'recombinant growth' (Weitzman 1998). In his paper Weitzman refers to Schumpeter (but not to Marx or Smith).

17 It is to be regretted that Rosenberg sidesteps the problem of distribution. Had he dealt with it, he would have conceded, I suspect, that there are fundamental differences between Schumpeter and Marx that defy any characterisation of the former as a Marxist.

teacher Eugen von Böhm-Bawerk had failed to elaborate. Like Böhm-Bawerk he feels that capitalism has to be defended by removing the odious smell of exploitation from profits.

Capital and profits

Schumpeter's strategy is straightforward. As we shall see in the following section, he rejected Böhm-Bawerk's explanation of profits and interest in stationary economic conditions in terms of his *agio* theory of profits, which essentially consists in a temporally sophisticated Austrian variant of marginal productivity theory. Hence Böhm-Bawerk's alternative construction designed to counter Marx's interpretation of profits as based on exploitation could not bear the brunt of the intended refutation. Schumpeter's way out of the impasse in which Böhm-Bawerk had left the issue at hand is to argue that in the circular flow there can be no exploitation of workers, simply because there are no profits. Only wages and rents are paid, and their levels are determined by marginal productivity theory. This is the first step Schumpeter takes to finally accomplish what Böhm-Bawerk could not.

The second step has to deal with a dynamic economic system, because according to Schumpeter only in such a system are there profits. Is their source the exploitation of workers? Certainly not! Profits are the fruit of innovations, and innovations increase the productivity of the economic system. Out of this increase profits are paid. There is no way whatsoever to trace the existence of profits to a situation in which workers are paid less than what they contribute to the social product. In fact, workers are taken to benefit from the innovative activities of entrepreneurs, as we see in the following subsection. Without such innovations there would be no such productivity increases and therefore no profits. Hence profits are not based on exploitation. Böhm-Bawerk was right, but for the wrong reasons, and Marx was wrong.

The following observations are apposite. First, there appears to be agreement across all different orientations in economics that Schumpeter's argument with respect to stationary conditions does not stand up to close scrutiny (see recently Knudsen and Swedberg 2009: 22; see also Anderson 2011). In none of the other approaches to the problem of value and distribution is it claimed that in the circular flow profits and interest are necessarily absent. As Spiethoff and Böhm-Bawerk pointed out, an even casual observation of facts suggests that profits typically never disappear in capitalist economies, not even in slumps and prolonged depressions. Without profits capitalism would cease to exist. But also from a theoretical point of view Schumpeter's construction is not convincing. In Marx's 'schemes of simple reproduction', which portray stationary economic conditions and in which, Schumpeter knew, there is positive surplus value and therefore there are profits. Simple reproduction was an analytical device Marx had developed in order to analyse the properties an economic system has to satisfy in order to just reproduce itself (with profits being equal to capitalists' consumption). Marx never presumed that any actual capitalist economy could ever be, and remain for some time, in such a state, whereas Schumpeter actually thought that profitless circular flows are recurring states of affairs, at least approximately. From a marginalist perspective Schumpeter's conceptualisation of the circular flow presupposes, as Samuelson (1943) stressed, that the system is fully saturated with capital, a situation that can hardly be said to mimic in theory what can be observed in fact. Therefore we are back to the question, whether the marginal productivity approach to an explanation of profits stands up to close examination, an issue that transcends the confines of this paper.

The second observation concerns the fact that in important instances Marx and Schumpeter use the same words, but attribute entirely different meanings to them. To Marx 'capital' is on the one hand a set of quantities of produced means of production; on the other it denotes the relationship between two classes: capitalists and workers. Schumpeter instead wishes to confine the words 'capital' and 'capitalism' exclusively to situations in which new combinations are carried out by means of credit provided to innovators by banks. 'Capital', he insists boldly, 'is a notion of economic dynamics, which has no counterpart in statics' (1912: 235). In stationary conditions, he contends, there are means of production, but there is no capital, a view that Marx (in this probably not very different from Böhm-Bawerk) would not have accepted. Only the credit given to innovators *is* capital. Therefore, capital and capitalism cease to exist whenever the system enters a circular flow, and they are absent as long as the system remains in such a state.

This is a rather idiosyncratic definition of capitalism, and it comes as no surprise that Schumpeter finds it difficult, nay: impossible, to adhere to it throughout his book. He has to admit, at least implicitly, that what matters are the structural and institutional characteristics of capitalism, which do not disappear when the economy enters a phase of stagnation.[18] As

[18] Schumpeter called Eugen von Böhm-Bawerk the 'bourgeois Marx', a title he, Schumpeter, would have deserved as well. Interestingly, Böhm-Bawerk too put forward a definition of capitalism, which, by construction, was meant to be innocuous and devoid of any ideological contamination. He defined as 'capitalist' economic systems that use produced means of production, whereas systems that do not he called 'non-capitalist'. In this way he implicitly, but deliberately, reduced the set of non-capitalist economies to the empty set. Hence both Böhm-Bawerk and Schumpeter defined

regards these characteristics, he refers to ‘a commercially organised state, one in which private property, division of labor, and free competition prevail’ (1934: 5). Looking at the history of capitalism, he stresses in accordance with Marx: ‘Not inventions have created capitalism, but capitalism has created the necessary inventions’ (1912: 479). In *Capitalism, Socialism and Democracy* (1942) as well as in many of his other writings he entertains a concept of capitalism that is closer to the usual one, focusing attention on those characteristic institutional and proprietary features of capitalism (wage labour, private property in the means of production, a monetary economy, etc.) that remain largely untouched by the restlessness of the system, at least for long periods of time.

Social classes

According to Schumpeter the concept of social class and that of class antagonism, which play prominent roles in the classical economists and in Marx, are difficult to grasp and often based on prejudices. However, he is not of the opinion that the concepts are misleading and superfluous. Frequently the lines of conflict of interest are said to be different from what people believe they are. According to Schumpeter there is no antagonistic relationship between entrepreneurs-innovators on the one hand and workers on the other. The opposite view he traces back to Adam Smith, who is said to have lumped together different economic and social roles: entrepreneurs, capitalists and monied men.[19] This implied a gross distortion of actual facts and blinkered generations of economists, Schumpeter objects. Thanks to entrepreneurs' new combinations, productivity in the economy will increase and the higher real social product will also trickle down to workers in terms of rising real wages. In Schumpeter's view both workers and entrepreneurs ‘are typical enemies of the given distribution of property as regards available goods. In many cases both gain and lose together. Entrepreneurs are the best customers of workers. Any improvement in the conditions of workers starts from them.’ (1912: 533) This is once again Schumpeter's version of the

capitalism in terms of characteristic features of the system that are entirely disconnected from the problem of income distribution.

[19] This interpretation is not faithful to what Smith had written. While Smith's ‘projector’ is a relatively anaemic figure compared with Schumpeter's energetic ‘entrepreneur’, Smith told a story that is remarkably similar to Schumpeter's in the following respects: First, economic development and growth of income per capita is the result of ‘improvements’ carried out by ‘tenants’ in agriculture, ‘masters’ in industry and ‘merchants’ in commerce. Secondly, an important non-intended consequence of their self-seeking behaviour consists in rising standards of living of workers and landowners. Third, there are conflicts over the distribution of income both between and within ‘classes’, viz. the conflict between creditors (‘monied men’) and debtors over the rate of interest. (See Kurz and Sturn 2012b: especially section 2.6.1.)

doctrine of the unintended consequences of self-seeking human actions. The similarity with Smith's doctrine can hardly be overlooked.

Hence, in Schumpeter's view there is no antagonism between entrepreneurs and workers, but there is one between them on the one hand and capitalists and bankers on the other.[20] With regard to the entrepreneur Schumpeter emphasizes: 'To him private property becomes an obstacle. … Interest is tied to an *agens*, whose function is to remove the obstacles that result from the development of the institution of private property'. He adds: 'Rubbing the plans of the entrepreneur against the rugged surface of the existing distribution of property, which has to be overcome, scours off interest' (1912: 319).

These considerations throw light on Schumpeter's and Marx's views of the nature and role of social classes in the economy. Schumpeter does not agree with Marx's concept of history as a history of class struggle, but he also rejects the opposite view of class harmony entertained by economists such as Henry Charles Carey or Frédéric Bastiat. In the *History of Economic Analysis* he praises Marx's respective achievements despite their ideological bent: 'we nevertheless get something worth having, namely, a perfectly adequate idea of the importance of the class phenomenon.' Interestingly he adds: 'If in this field there existed anything like unbiased research, Marx's suggestion would have led long ago to a satisfactory theory of it' (1954: 440).

Do entrepreneurs form a class? Schumpeter answer is a resounding no: 'The entrepreneur employs his personality and nothing else than his personality. His position as entrepreneur is tied to his accomplishment and does not survive his vigour. It is essentially only temporary and cannot be bequeathed. The social position slips away from his follower that has not inherited with the prey also the lion's claw' (1912: 529).

Crises and cycles

Schumpeter agrees with Marx that economic development comes in leaps and bounds. As he puts it in *Business Cycles*: 'Evolution is by nature asymmetrical, discontinuous, unharmonious.' (1939: 102) He also supports vividly Marx's claim that the main source of wealth and riches is not savings. Marx had dubbed the latter view a 'children's fairy tale'

[20] Schumpeter's idea may be said to be foreshadowed in Richard Cantillon with his classification of entrepreneurs and workers on a fixed income. In Cantillon there is also no antagonism between the two, because workers on fixed incomes can very easily move to become entrepreneurs and vice versa.

(*Kinderfibel*), and Schumpeter fully agrees (1939: 106 fn.). The source of wealth and riches is the enormous increase in labour productivity, caused by innovations.

Both Marx and Schumpeter distinguish between the essence and the form of a phenomenon. Most importantly, perhaps, while a 'liquidation crises' (to use Schumpeter's term) around the upper inflection point of the cycle typically goes hand in hand with stock exchange panics, bankruptcies, credit contractions etc., these phenomena, Schumpeter warns, are 'purely superficial moments, … they are only forms of deeper and more essential events' (1912: 459). The 'deeper and more essential events' he refers to are, of course, the dwindling profit prospects due to the exhaustion of the innovative potential of the latest vintage of new combinations that triggered the upswing.[21] Similarly, in Marx we encounter the idea of crises triggered by a falling tendency of the general rate of profit.

In short, there are some remarkable similarities but also some significant differences between the analyses of Schumpeter and Marx. While his analysis exhibits several Marxian traits, he was keen to establish the 'law of motion' of capitalism and its 'perpetuum mobile', profits, in an affirmative rather than a critical way: he wished to defend capitalism, not to attack it. Yet, as a firm advocate of the doctrine of unintended consequences he felt that capitalism was a socio-economic system, which, like other systems in history, was bound to undergo, over time, a process of self-transformation: eventually it would be replaced by socialism – not necessarily as the result of a revolution, as some Marxists maintained, but more or less smoothly and peacefully, as others like Rudolf Hilferding, whom Schumpeter knew well, speculated.

We now come to Schumpeter's relationship with Böhm-Bawerk, the towering figure in economics in Austria at the beginning of the 20th century and a leading international expert in the theory of capital and interest (i.e. profits). Whatever was written in those days on the origin of profits was measured against Böhm-Bawerk's contribution. How could one be an innovator in the field under consideration without challenging his doctrine? One could not, of course. Since Böhm-Bawerk's criticism of Schumpeter and Schumpeter's response, all in German, are hardly known in the English speaking world, I provide a brief critical account of them.

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21 Thus Schumpeter (1939: chapter XIV) explained the Great Depression as the result of the concurrence of troughs of three types of economic cycles: the so-called Kitchins, Juglars and Kondratieffs; see also Kurz (2011b).

4. Schumpeter and Böhm-Bawerk

Schumpeter did not join in the criticism of Marx put forward by his Austrian peers. A case in point is Böhm-Bawerk's frontal assault on Marx in his essay 'Zum Abschluß des Marxschen Systems' (Böhm-Bawerk 1896) following the publication of volume III of *Das Kapital* in 1894. Böhm-Bawerk accused Marx of a 'fundamental contradiction' between the first and the third volume: while in the first volume Marx argues that commodities exchange according to the amounts of abstract labour needed directly and indirectly in their production, in the third volume he abandons this idea because a competitive rate of profit is incompatible with the labour theory of value and switches to the concept of 'prices of production'. Interestingly, in his 'Epochen' (1914: 82) and elsewhere Schumpeter defends Marx against this criticism by (correctly) pointing out that already in the first volume Marx had directed the reader's attention to the fact that in conditions of free competition relative prices will necessarily deviate from relative labour values.[22] More implicitly than explicitly, Schumpeter also found Böhm-Bawerk's alternative explanation of profits unconvincing and thus felt that the project of refuting the doctrines of Marx and the socialists inconclusive. All things considered, there is reason to presume that Schumpeter held Marx's contribution to economics in higher esteem than Böhm-Bawerk's, although ideologically he was much closer to the latter. It was only a question of time for the fundamental differences between the two Austrians to come into the open.

This time is in 1913, when Böhm-Bawerk publishes an uncompromising criticism of what he calls Schumpeter's 'dynamic' theory of interest (Böhm-Bawerk 1913a). Schumpeter answers in the same year (Schumpeter 1913), followed by a rejoinder by Böhm-Bawerk (1913b). Böhm-Bawerk's criticism of Schumpeter is even harsher than his criticism of Marx. He calls Schumpeter's construction 'totally failed', a 'crooked theory' and even a 'heresy' (1913a: 2 and 61). 'Wherever one touches upon his doctrine, it yawns and wavers' (1913a: 12). In his reply Schumpeter is keen to pour oil on troubled waters by contending somewhat surprisingly that his argument is nothing but a 'development' of Böhm-Bawerk's and that there is 'a fundamental unity of thought' between them (1913: 610-11). Böhm-Bawerk (1913b) in his rejoinder brushes aside Schumpeter's attempt at appeasement and makes it clear that Schumpeter's claim is not credible.

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[22] This does not mean, of course, that Marx's suggested 'transformation' of labour values into prices of production can be sustained, as the debate about the transformation problem showed.

In his criticism Böhm-Bawerk proceeds in two steps: he first asks whether Schumpeter's construction is logically consistent and then whether it conforms to the facts it purports to explain. On both counts his answer is a strict no. Schumpeter's contention that interest is a transitory phenomenon, limited to 'dynamical' economic phases, is said to be neither theoretically convincing nor empirically verifiable. Böhm-Bawerk concludes: 'Capital interest is and remains what the world for good reasons has always thought it was: a static branch of income. The existence of interest does not presuppose the appearance of geniuses, but is at home also in a world of mediocrity', and therefore interest 'cannot be an essentially dynamic phenomenon!' (1913a: 2 and 57). Schumpeter 'has got high on a spirited idea', but has refrained from subjecting it to 'a sober and wary cross-examination' (1913a: 2).

We need not be concerned with all the details of Böhm-Bawerk's criticism, but turn directly to four pillars upon which his and, more generally, marginalist theory rests, and which Schumpeter rejects.

Is interest ubiquitous?

According to Böhm-Bawerk interest is a ubiquitous phenomenon that exists across time and space in all economic systems, irrespective of whether people are aware of it or not.[23] In his view Schumpeter's circular flow is purely fictitious, because there is no state of the economy in which there is no profit and interest.

Schumpeter disagrees: Böhm-Bawerk's contention is based on the assumed validity of the famous 'Three Grounds', and stands or falls with them. In particular, in order for the contention to be correct, especially the Second Ground – the alleged 'higher estimation of present goods over future goods of the same kind and amount' – and his Third Ground – the alleged 'superiority of more roundabout processes of production' – have to be universally valid. Yet there is strong evidence, both theoretical and empirical, Schumpeter maintains, that they are not. In the interest of a strong empirical verification of his doctrine, Schumpeter advises Böhm-Bawerk to demonstrate conclusively that in the 'economy of the Australian negroes [*Australneger*, that is Aborigines]' there is a positive rate of interest (1913: 604). This Böhm-Bawerk will not be able to prove. Schumpeter therefore turns to the two grounds mentioned.

Time preference

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[23] Recall Böhm-Bawerk's concept of capitalism (see footnote 18).

Böhm-Bawerk argued that all people are indiscriminately estimating presently available goods higher than the same qualities and quantities of goods tomorrow, those goods tomorrow higher than the day after tomorrow, and so on. In modern terminology, people are possessed of a *positive rate of time preference* as a part of their natural endowment as human beings. This proposition has been accepted in some parts of economic theory and is now typically considered a primitive fact with which economic theory has to reckon. For example, in so-called New Classical Macroeconomics and in large parts of neoclassical Endogenous Growth Theory a positive rate of time preference of the so-called 'representative agent' is typically assumed at the outset without any further justification. Böhm-Bawerk's concept (which was foreshadowed in some earlier authors, such as Jeremy Bentham) therefore has been admitted into the 'tool box' of marginalist theory.

At the time when Böhm-Bawerk wrote his *Kapital und Kapitalzins*, the concept was not generally and not even widely used in economics. In fact, Böhm-Bawerk's brother in law, Friedrich von Wieser, rejected the concept on the ground that it confuses cause and effect: a positive rate of time preference is a consequence rather than a cause of a positive rate of interest. In his *Theorie* and elsewhere Schumpeter sides with his teacher Wieser and rejects Böhm-Bawerk's Second Ground. In his reply to Böhm-Bawerk's attack he insists that time preference is not 'an independent and primary cause of interest' (1913: 604). Schumpeter's opposition to the concept recurs time and again in his writings and there is no need to enter into a discussion of the different shades in which his respective criticism is presented. Here it suffices to point out what is perhaps obvious, namely that there is no time preference in the circular flow, whereas there is one in a dynamic state of affairs. Characterized *inter alia* by a positive rate of interest, in such a state rational behaviour of agents requires them discounting the future. In Schumpeter's view, time preference is not an exogenous anthropological given, but the endogenous result of particular social and economic circumstances.

Superiority of more roundabout processes of production

According to Böhm-Bawerk more time-consuming, that is, more 'roundabout' processes of production are more productive in the sense that total output of the final good divided by the sum total of labour expended on the different stages of the time-phased production process is higher than with processes that take less time. Böhm-Bawerk was actually of the opinion that all alternative processes of production available at a given moment of time to produce a particular good can be ordered monotonically in terms of their roundaboutness with respect to the rate of interest: the more roundabout and thus the more capital-intensive a process is, the smaller is the rate of interest it yields. This is the Austrian variant of the conventional marginalist concept of substitution in production, according to which the capital-labour ratio is inversely related to the rate of interest relative to the real wage rate.

This may well be the case, Schumpeter responds, but it need not be the case. New inventions may be more productive without being more roundabout. Böhm-Bawerk is accused of having elevated a mere, though not improbable, possibility to the status of a general truth. Böhm-Bawerk apparently has strong faith in the premises of his analysis, but little compelling evidence in their support.

The idea that factor intensities in production are related inversely to the ratios of the corresponding factor prices is another concept that has been admitted into the tool box of contemporary marginalist theory and is actually one of its centrepieces. It conveys a widespread opinion regarding the law of *substitution* in production, to which Schumpeter himself refers repeatedly in his writings. However, he has doubts that it is generally valid and therefore does not accept it as an unobtrusive element on which economic theory could or should rely. In particular, there is no presumption whatsoever that new knowledge in production obeys Böhm-Bawerk's preconception.

Savings

Böhm-Bawerk adopts the received view that savings are the key to economic development and growth. We have already seen in Section 3 that Schumpeter is strongly opposed to this doctrine, which Adam Smith had forcefully advocated in *The Wealth of Nations*. (This is one of the reasons why Schumpeter in the *History of Economic Analysis* and elsewhere passed very negative judgements on Smith.) The true story, as Schumpeter sees it, revolves around innovators and thus investors and not savers; around bankers and capitalists and not agents abstaining from consumption; around technological breakthroughs and not incremental increases in the capital stock; around the 'setting up of a new production function'(1939: 87), and not the movement along a given one.

A dissenting economist

Dissenting from the economic mainstream, whether of the Walrasian or the Austrian variety, in such important respects, it is somewhat of a riddle, why Schumpeter on the one hand wished to be considered a major innovator in economics and yet at the same time was keen to portray his own doctrine as largely compatible with, and in fact a development of, the marginalist mainstream. He relegated the applicability of Walras's theory essentially to the circular flow of the economy, but since that case, if it has any counterpart in the real world, was evanescent anyway, the theory was of little use and relevance. He rejected the 'monotonic prejudice' (Piero Sraffa) regarding the ordering of methods of production according to roundaboutness in terms of the rate of interest, and thus threw into doubt the received principle of substitution in production. It therefore cannot come as a surprise that Schumpeter in another contribution advocated the 'heretic' view that an increase (a decrease) in the real wage rate will not of necessity lead to a decrease (an increase) in the demand for labour (Schumpeter 1916-1917: 85-6 fn.). This runs counter to the conventional 'wisdom' of marginalist theory that higher real wages are always bad for employment, and implicitly raises the problem of the stability or otherwise of the labour market.

Schumpeter was not able to express his unconventional if not heretical views in a clear and straightforward manner and also draw the right conclusions from them. We are not given detailed reasons why and when the relationship between relative factor intensities and relative factor prices contradicts the received marginalist viewpoint. But Schumpeter deserves the credit for having intuitively seen that the complexity of the economic world allows for phenomena that are not covered by the conventional marginalist doctrine. He saw more than he could establish clearly.

Next we turn to Schumpeter's relationship with Keynes and point out *inter alia* a striking fact concerning investment demand theory, which up until now appears to have escaped the attention of interpreters.

5. Schumpeter and Keynes

Schumpeter at the beginning of the twentieth century and Keynes in the 1930s were at odds with the received economic doctrine and, in Keynes's words, intent upon escaping from 'habitual modes of thought'. Both were intellectual entrepreneurs who embarked upon journeys into hitherto unchartered territory, and while both benefitted from existing ideas and concepts, they reconfigured them and combined them anew so that something truly novel emerged.

In this section I draw the attention to those aspects of Schumpeter's *Theorie*, which can be said to anticipate certain ideas in Keynes's *General Theory*. Schumpeter's highly critical assessment of Keynes's magnum opus in his review article (Schumpeter 1936) and elsewhere[24] must not distract the attention away from the fact that both scholars were dissenters from the marginalist mainstream and that their contributions had several elements in common. It hardly needs to be mentioned that Schumpeter rightly chastised Keynes for having given short shrift to what he, Schumpeter, considered to be the main driving force of capitalism: innovations and thus technological and organisational change. As I see things, the elements that are common to the two economists' analyses are essentially the following.

Saving and investment

Perhaps most fundamental, both Schumpeter and Keynes dispute the conventionally held view of the primacy of saving over investment and therefore of consumers over producers or firms. According to the marginalist doctrine, savers decide the pace at which capital accumulates, and consumers' preferences decide the allocation of those savings in terms of actual investments in different branches of production. In this perspective, investors assume a purely vicarious role as executors of consumers' wants and wishes, or 'preferences'. Keynes's and especially Schumpeter's view is radically different. In contrast to the conventional marginalist doctrine, and especially that of his Austrian peers, Schumpeter stresses: 'innovations in the economic system do not as a rule take place in such a way that first new wants arise spontaneously in consumers and then the productive apparatus swings round through their pressure. … It is … the producer who as a rule initiates economic change, and consumers are educated by him if necessary; they are, as it were, taught to want new things' (1934: 65). In the first edition of *Theorie* he had been even more outspoken and had insisted that innovators 'force' upon consumers new goods and consumption patterns and prompt the 'hedonic majority' of the population to comply with their will. Entrepreneurs, not consumers, are the *agens* of the capitalist system. There is no pure and undiluted consumer sovereignty that would rule the roost in the world of economic change. One is reminded of John Maurice Clark's remark about what firms do:

> Economic wants for particular objects are manufactured out of this simple and elemental raw material [primitive instincts] just as truly as rubber heels, tennis balls, fountain pens, and automobile tires are manufactured out of the same crude rubber. *The wheels of industry grind out both kinds of products. In a single business establishment one department furnishes the desires which the other departments are to satisfy*. (Clark 1918: 8, emphasis added)

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[24] Smithies (1951: 163) drew the attention to the fact that 'Even in his memorial article [in the *American Economic Review* of 1946] Schumpeter did not credit Keynes with a single major improvement in the technique of economic analysis.'

In a similar vein Frank H. Knight deplored the ‘persuasive influence by sellers upon buyers and a general excessive tendency to produce wants for goods rather than goods for the satisfaction of wants’ (Knight [1934] 1982).

Hence consumers’ preferences are shifted by producers and therefore cannot be considered as autonomous and as primitive data of the analysis. On a more fundamental level, Schumpeter’s view is incompatible with the independence of demand and supply functions, which, however, is a necessary requirement of the conventional determination of prices and produced quantities in terms of the forces of ‘demand’ and ‘supply’. If one tears down one of the carrying pillars of the marginalist edifice, will the edifice collapse or can the damage be contained?

No dichotomy between the real and the monetary sphere

Both Schumpeter and Keynes question the received concept of a dichotomy of the economy in a real and a monetary sphere, where the monetary sphere influences the real sphere only in the short, but not in the long run. In this perspective money is best envisaged as a veil that covers the real economy, but can be removed without much effect. To both Schumpeter and Keynes this view is deeply misleading. The importance attributed to money and the intimate interdependence between the monetary and the real sphere are already emphasized in the title of Keynes’s magnum opus, *The General Theory of Employment, Interest and Money*, and in the subtitle of Schumpeter’s book on economic development, *An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*.

Investment leads to saving rather than the other way round

This brings us to a closely related issue that has been mentioned and discussed already at various stages in the above. According to Keynes investment demand plays a crucial role in deciding the activity level of the economic system and thus national income, and since saving is mainly governed by income, investment also determines the sum total of savings. Acts of investment induce acts of saving, rather than the other way round. In Schumpeter’s words, Keynes destroyed ‘the last pillar of the bourgeois argument’ (see Smithies 1951: 165). Schumpeter’s view, though similar in substance, was designed to provide a strong pillar in support of the bourgeois argument: the investment of innovators is financed not by savers, but by additional credit generated by the banking system. It is only as a consequence of the development triggered by this process and the increase in productivity and output that savings are forthcoming, which otherwise would not have happened at all. The difference between the views of Keynes and Schumpeter in this regard is the following. While Keynes typically starts from a situation of unemployment and margins of spare productive capacity, Schumpeter assumes the full utilization of productive resources. Therefore Keynes's process is fuelled by the use of hitherto idle resources, whereas Schumpeter's presupposes a redistribution of resources away from 'static firms' to 'dynamic' ones. As Schumpeter was to admit in his controversy with Böhm-Bawerk, this redistribution may be interpreted as 'forced saving' on the part of the static firms. And in his discussion with Arthur Spiethoff, a leading German business cycle theorist, he accepted the idea that when a recession turns into an upswing as a consequence of an increase in investment by innovators, initially underutilized resources will be used. He insisted, however, that the process typically goes beyond this point and requests the redirection of resources in the way he had contemplated (see Kurz 2011b).[25]

The determinants of investment

There is an important further similarity between the analyses of the two authors that deserves to be mentioned. This concerns their views on the determination of investment demand. As is well known, Keynes in his discussion of the concept of the *marginal efficiency of capital* suggests that the various investment projects be ordered according to their marginal efficiencies and then aggregated, 'so as to provide a schedule relating the rate of aggregate investment to the corresponding marginal efficiency of capital in general which that rate of investment will establish' (Keynes, *CW*, Vol. VII: 136). This schedule he calls the *investment demand-schedule*, which he confronts with the current money rate of interest. He concludes: 'the rate of investment will be pushed to the point on the investment demand-schedule where the marginal efficiency of capital in general is equal to the market rate of return' (*CW*, Vol. VII: 136-7).

Interestingly, Schumpeter in Chapter VI, 'Interest on Capital', of *Theorie* puts forward a similar view, but rejects (implicitly) the orthodox and also Keynesian view that the schedule is necessarily downward-sloping: investment demand, he surmises, need not rise (fall) with a fall (rise) in the money rate of interest over the entire range of relevant levels of the interest rate. Schumpeter transcends the narrow partial equilibrium framework within which the argument is typically couched and allows for the impact of changing levels of the money rate of interest on absolute (and relative) prices and costs. A higher rate of interest, Schumpeter argues, implies higher prices of a variety of goods. In order to realise a given innovation or investment project, the entrepreneur needs a larger liquid capital. This tends to increase the

25 I found no evidence in the writings of Keynes and Schumpeter in support of Smithies' (1951: 164) claim that the two 'admired abstinence and thrift' and attributed to them a major role in the process of economic development.

demand for credit and the overall volume of investment. On the other hand, a higher rate of interest implies that some projects can no longer be profitably undertaken. This tends to decrease the demand for credit and the overall volume of investment. As regards the combined effect, nothing can be said without additional information. There is at any rate no presumption that credit and investment demand on the one hand, and the money rate of interest on the other, are necessarily inversely related, as Keynes assumes in accordance with orthodox economics. There is the possibility that, at least for some interval of values of the money rate of interest, aggregate investment demand and the interest rate move in the same direction.

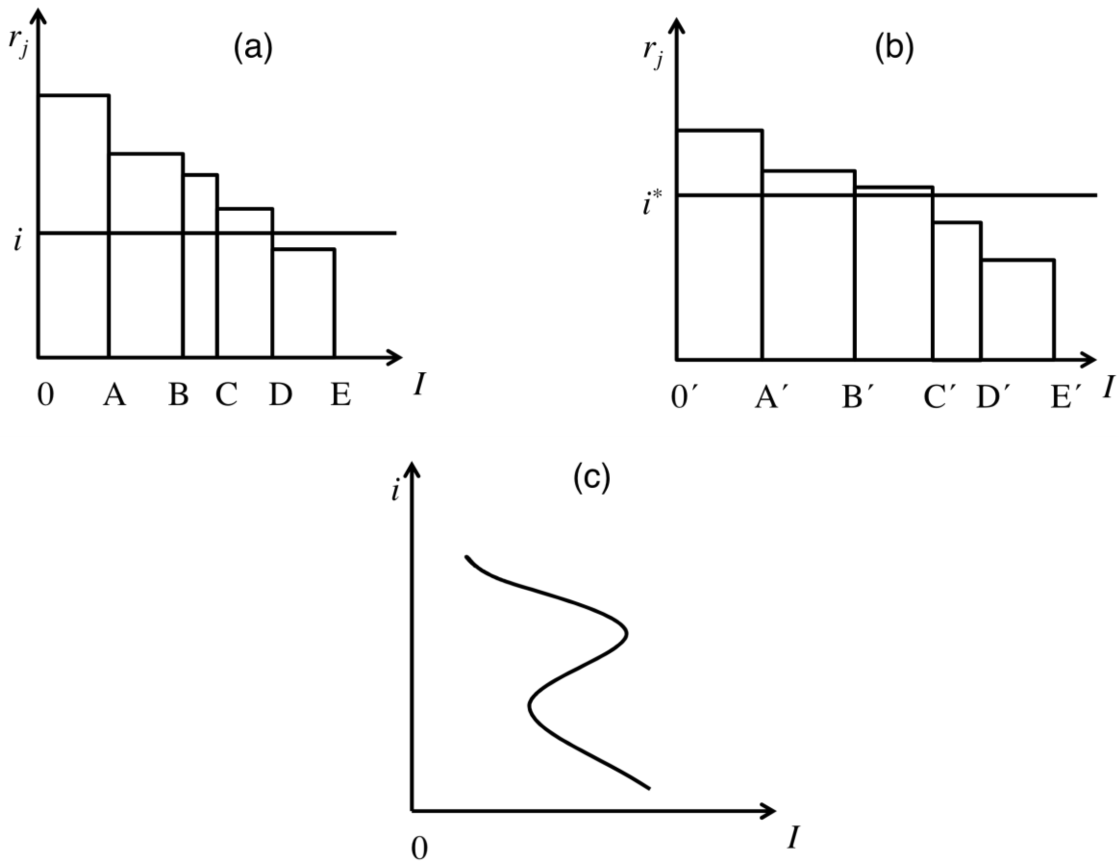

Fig. 1: Rate of interest and volume of investment.

This can be illustrated in terms of Figure 1. Figure 1(a) gives the ranking of five investment projects in terms the expected rates of return r_j (j = 1, 2, ..., 5) and the volumes of investment associated with them (0A, AB, BC etc.) when the money rate of interest equals i. In the situation depicted four projects will be realised and the volume of total investment (and credit) demand will be given by 0D. Figure 1(b) contemplates the case in which the rate of interest is higher, $i^* > i$. This involves, first, lower expected rates of return with regard to each project and, secondly, different prices and thus costs associated with the commodities needed in order to carry out the projects. In the case depicted, some projects are more expensive in the new situation than they were in the old, for example 0'A' > 0A and A'B' > AB. (Some projects might be less expensive: C'D' < CD.) At the higher rate of interest now not only the fifth project (DE and D'E' respectively) is eliminated, as it was already at the lower rate, but also the fourth project (CD and C'D', respectively). But since the increase in the value of the first three projects as a consequence of the movement from i to i^* is larger than the value of the eliminated fourth project, the volume of total investment demand will be larger: 0'C' > 0D. A non-monotonic relationship between investment demand and the rate of interest as depicted in Figure 1(c) cannot therefore be ruled out.

We may add that whilst in the illustration given the ranking of the five projects does not change with a change in the interest rate, this need not be the case. It is well possible that the projects cannot be ordered monotonically with the rate of interest across the entire interval of feasible interest rates.

The above possibility, which contradicts conventional 'wisdom', ought to be related to the other one we have already encountered: the possibility that the wage rate and employment of labour need not be inversely related over the whole range of feasible levels of the real wage rate. In fact, both possibilities are but different sides of the same coin. Since Schumpeter did not possess a comprehensive theory of value and distribution that would have allowed him to analyse the effects of a change in the money rate of interest on the other distributive variables and relative prices, he could not make his case in a straightforward and compelling manner. Therefore it also comes as no surprise that his respective remarks, in which he dissented from mainstream opinion, hardly received the attention they deserve. Most readers appear to have simply ignored them, since their mindset was not prepared for the unconventional possibilities that were only much later firmly established on the basis of Piero Sraffa's reformulation of the classical theory of value and distribution (Sraffa 1960).[26]

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[26] In the 1960s the possibility that the capital-labour ratio of the economic system as a whole rises (falls) with a rise (fall) in the rate of interest (and a corresponding fall (rise) in the real wage rate) became known as *capital reversing* or *reverse capital deepening*; for a discussion of this phenomenon, see Kurz and Salvadori (1995: chapter 14). As Mas-Colell (1989) stressed, the relationship between the capital-labour ratio and the rate of interest can have almost any shape whatsoever.

While Schumpeter was unable to provide a solid theoretical underpinning for the possibilities he boldly postulated, one may wonder why he showed so much alertness in this regard, whereas Keynes did not. One reason might be that someone who has studied Walras's *general* equilibrium theory has perhaps a deeper understanding of the complexities involved than someone like Keynes, who was brought up with Marshall's *partial* equilibrium theory.

6. Concluding remarks

In this paper I have tried to relate Schumpeter's *Theorie der wirtschaftlichen Entwicklung* to the works of major authors, in particular Karl Marx, Léon Walras, Eugen von Böhm-Bawerk and John Maynard Keynes. It has been shown that Schumpeter's break with the marginalist mainstream and what he called 'static' theory, represented by Walras and Böhm-Bawerk, was deeper than is widely held. He rejected important ideas, concepts and analytical instruments that were admitted into the marginalist 'toolbox' and advocated instead ideas, concepts etc., some of which had been forged by Marx. However, Schumpeter re-interpreted and integrated them into an overall analytical edifice from which profits emerge as a premium paid to innovators rather than as a reflection of the exploitation of workers. Interestingly, there are also surprising similarities between Schumpeter's analysis and that of Keynes, which are frequently overlooked because of Schumpeter's dismissive remarks on the *General Theory*. It is shown in particular that Schumpeter's view of the dependence of the volume of investment on the rate of interest was a good deal more sophisticated and subversive than Kenyes's. Marx, Schumpeter and Keynes can all be said to have rejected Say's law, the idea that wealth is the result of savings, the idea of undiluted consumer sovereignty and the idea that there is a dichotomy between the real and the monetary sphere. Marx, Keynes and Schumpeter saw capitalism as a restless, crisis-prone system.

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