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The Luxemburg Debate -

The Beginnings of Marxian Macro-Economics

Abstract: Before Rosa Luxemburg dared to criticize them, Marx' tableaux économique, his reproduction schemes, published for the first time in 1885 in volume II of Capital, edited by Friedrich Engels, nearly escaped the attention of the academic public. Tugan-Baranowsky referred to them, actually made use of them in his theory of crisis in 1899, but before Rosa Luxemburg there was no debate whatsoever with respect to the Marxian reproduction schemes. Luxemburg's critique triggered off a long lasting debate - mainly among Marxists and - after a while - quite a lot of Non-Marxists as well. The debate started in 1913, just after the publication of Rosa Luxemburg's "Accumulation of Capital, with a series of defences of Marx' theory of reproduction and accumulation - involving some harsh critiques of Rosa Luxemburg's treatment of the topic and her Marx-critique in particular (by Pannekoek, Eckstein, Otto Bauer and others). Rosa Luxemburg reacted with a lengthy Anti-Critique, published posthumously in 1921. The debate did not peter out, it actually continued during the 1920s when different authors (Bucharin, Sternberg and others) tried to clarify the points made by Rosa Luxemburg - and to improve the Marxian reproduction schemes and/or to extend the original Marxian theory of accumulation. Due to these various efforts, the reproduction schemes were enlarged and differentiated in various ways. In the 1930s, Rosa Luxemburg's old adversary Otto Bauer tried again to develop a much refined version of the Marxian reproduction schemes in order to analyse and better explain the Great Crisis of the 1930s. Despite the failure of her book and thanks to her untimely intervention, the reproduction schemes had become one of the cornerstones of Marxian macroeconomics.

0. The Debate on Imperialism in the German Social Democracy

Several years before World War I, the German social democratic party, the leading party of the II. International, had shifted its attention from mere colonial politics towards the rather new phenomenon of "imperialism", regarded as a revival of the "world politics" of the great powers. On several party congresses, for instance at Mainz in 1900, at Chemnitz at 1912, as well as on congresses held by the Socialist International, the politics of imperialism were clearly condemned. Since the early years of the 20th century, the leading party theorists in Germany and Austria were engaged in debates on the explanation of imperialist politics - Kautsky and the rising stars of Austro-Marxism, Otto Bauer and Rudolf Hilferding made the main contributions. Rosa Luxemburg was the first Marxist economist to devote a whole study at book-length to imperialism, joining the debate rather late, in 1913. Unlike her predecessors, and very much in the mood and style of her old adversary, Eduard Bernstein, she combined the explanation of imperialism with a harsh and thorough critique of Marx. In order to develop Marx' political economy further, one had to criticize its gaps and weaknesses with the same ruthlessness as he himself had criticized the classical political economists. So, in 1913, publishing the "great work" that everybody expected from her, Rosa Luxemburg became a Marxist revisionist of sorts.

1. Marx' tableaux économiques

From 1857 until 1881, Marx wrote several versions of what was to become one of his most famous achievements in

political economy: His own tableaux économiques, or reproduction schemes, in fact the second version of a macroeconomic analysis of the reproduction process in capitalist economies after Francois Quesnay had first designed and published a model depicting the circulation of the national product between the three great economic classes of society in 1758. He and his followers produced several versions of the much admired tableaux, but unfortunately, neither Quesnay nor the other members of the thriving Physiocratic school ever finished the job. After a short career, the tableau économique fell into oblivion.

In 1857/58, writing the large manuscripts today known as the Grundrisse, Marx ran for the first time into the problem of the reproduction of total social capital. He wanted to explain the phenomenon of reoccurring cyclical crises - or general gluts in the parlance of classical political economy. According to his original plan, the famous 6 - book plan of 1858, a book on crisis and the world market should provide the close and the culmination of his whole project called "critique of political economy". The manuscript of 1857/58 is a research manuscript, not written for publication.¹ It is not a philosophical tract at all but a first effort to bring together Marx' various efforts to criticize classical political economy from 1843/44 in a coherent, systematic way. Accordingly, Marx, the political economist, tries to solve the problems that classical political economy had left unsettled. Among them, the problem of the

¹ I have explained the status of the Grundrisse and its real place in the long story of the making of Marx's Capital elsewhere (cf. Krätke 2008). The now prevailing view, which turns it into an exercise of applied Hegelianism, is completely misguided. The abuse of the text (its very poor translation into English notwithstanding) as a quarry for citations serving as starting points for all sorts of lofty "philosophical" exercises, is rather a disgrace and aloof from serious scholarship, Marxist or not.

reproduction and accumulation of capital on a national or world scale - a problem that had troubled the classical economists and intrigued their first socialist critics.

In this manuscript, Marx starts with a series of examples - subdividing total social capital in no less than five different and particular capitals or industries - and struggles on with a lot of arithmetic illustrations. However, he arrives at a conclusion: The "inner structure" of capital, any (industrial) capital, should somehow determine the differentiation of total social capital as well as the proportions in which the different parts of social capital would exchange with each other (cf. MEGA II / 1.2, p. 353, 354).²

In the next larger manuscript, the manuscript of 1861 - 63, Marx made a decisive step forward. It is here that he came up with his own version of a tableau économique for the first time. He sketched a graph - very much like the tableau of Francois Quesnay - based upon his own analytical categories, and divided the picture between three departments or poles - consumption goods, production goods and the total social production. Confining himself to "simple reproduction", he spent a lot of time analysing the intermediary movements of money and commodities (no less than seven intermediary flows of either money or commodities) and drafting various plans for the treatise of this topic - the analysis of the total process of the reproduction of capital - in his future work (cf. MEGA II / 3.6, pp. 2270 e.s., 2337 e.s.)

During the first half of the year 1865, Marx wrote the

² There is no reliable English translation of the Grundrisse text, another reason not

first full version of what he intended to become volume II of Capital.³ In this manuscript, he outlined a rather ambitious program: He would present a full analysis of the circulation and reproduction of total social capital in chapter 3 of this volume which would comprise the examination of the process of expanded reproduction or accumulation, including money capital accumulation (or "savings") and provide the necessary clues for the later analysis of crises or "disturbances of the reproduction process" (cf. MEGA II / 4.1, pp. 321 e.s., 381). This is still a research manuscript, in which the author is experimenting with various devices. He has not yet made up his mind as to the right distinction of departments or fractions of total social capital, he dropped the original graph but had not yet found a way to replace it by another form of presentation. But the general direction of the investigation is already clear.

The decisive step forward was made later, in 1868 - 70, when Marx wrote the second full version of volume II of Capital (known as manuscript II).⁴ Although he was still experimenting a lot, he had now found the algebraic form of presentation of his "schemes of reproduction". In writing, he followed his usual practice of drafting a variety of numerical examples, entangling himself in the arithmetic. But the basic concepts are present and quite clear. As the manuscript shows clearly enough, Marx had not given up his ambitious plan to include all the intermediary movements of money and commodities in his analysis

to trust the philosopher's tales about it.

³ These manuscripts were published for the first time in the second MEGA, more than a hundred years after the actual time of writing. Until today, there is no English translation of this very first draft of Capital, volume II.

⁴ This manuscript has been published for the first time, in MEGA II / 11. In print, it is more than 500 pages long.

which he still conceived of as an analysis of the total process of reproduction and circulation in terms of flows. Pondering on his invention, he experimented with various divisions and subdivisions - no less than 5 different departments - and he treated the problems of accumulation, including the accumulation of money capital, at length. Nonetheless, the manuscript was broken off and remained unfinished.

In 1877, Marx wrote a piece for Engels who was involved in a lengthy polemic against a then famous critique, Eugen Dühring. Marx supported him by criticizing Dühring's History of Economic Thought. The centrepiece of Marx' contribution was a rather detailed exposition and explanation of Francois Quesnay's Tableaux économiques. As we can see now from his drafts, published for the first time in the MEGA, volume I / 27, he grasped the opportunity to engage himself in another intense study of Quesnay's work. The results of these renewed studies are included in his later manuscripts for Capital, volume II.

In 1878 - 1881, in his last manuscript for Capital, volume II (among Marxologists better known as manuscript VIII), Marx tried again to find the adequate form to present his results.⁵ But, as the manuscript clearly shows, Marx was not yet done with his research. The bulk of the manuscript is dedicated to the analysis of the reproduction and circulation of total social capital (the third part or chapter of what was later to become volume II) and in particular to the analysis of the accumulation process. Although his manner of presentation is rather clumsy, he analyses not only the impact of accumulation on the structure

⁵ This manuscript has been published for the first time, in MEGA II / 11.

In print, it is a text of more than 300 pages.

of the surplus product but also the interrelation between money accumulation and what he calls "real accumulation".⁶ As in the earlier manuscripts, and still according to his plan of 1863, he deals with the production of gold as a source of additional money as well as with the hoarding of money by capitalists in both departments.⁷ One can even find an analysis of the famous "third persons" and their specific role in the total process of reproduction and circulation. Even if the manner of presentation is far from finished, the elements for the solution of all the salient problems of the accumulation process are clearly present in this last manuscript by Marx hand. He left it unfinished due to another illness in the summer of 1881.

2. Rosa Luxemburg's critique

Volume II of *Capital*, first published in 1885, had passed rather unnoticed. Only in the debate among Russian radicals on the future capitalist development of Russia towards industrial capitalism some use was made of the Marxian schemes of reproduction.⁸ Tugan-Baranowsky was the first to use them in

⁶ Capitalists' savings and capitalists' investments (real or direct, not financial or portfolio) in today's economists' parlance. In the second section of *Capital*, volume II, Marx shows in much detail, why (not always how) capitalists are bound to save money, that is to say to "hoard", to build up reserve funds of various kinds serving different functions, due to the very "mechanics" of capital turnover.

⁷ Marx sticks to the abstraction from credit in all his manuscripts for this volume. So, the only sources of "money" are either gold production or hoards. As his analysis of the turnover of capital shows, hoarding is a necessity for every industrial capital.

⁸ For a history of this debate see Rosdolsky 1978. Luxemburg devoted two chapters of the second section of her book, the section dealing with the history of economic thought on the problem of capital accumulation, to the debates between various kinds of radical economists in Russia, including the Marxists.

order to prove the possibility of industrial growth without limits - and independent of foreign markets (cf. Tugan - Baranowsky 1901). Danielson, well known as the first translator of Marx' Capital, volume I, to Russian, as well as an interlocutor whom both Marx and Engels held in high respect, was the first to argue at length that the development of capitalism in Russia, without colonies, without surrounding "non-capitalist" environments, was doomed to fail (cf. Danielson 1893)⁹, while the Marxists, legal or not, tried to prove the opposite. There were a few, brief reactions, rather hostile to Tugan's first book (on the theory and history of crises in Britain)(Tugan-Baranowsky 1901) as well as to his later (on the theoretical foundations of Marxism)(Tugan-Baranowsky 1905)in the leading German socialist journals "Die Neue Zeit" and "Sozialistische Monatshefte"(cf. Schmidt 1901, Kautsky 1902, Otto Bauer 1904, Boudin 1907, Pannekoek 1907, Otto Bauer 1906), but no extended debate on the matter.

Kautsky was the first to mix up the issues of an explanation of the recent phenomena of "imperialism" and the Great Depression, which had since 1895 turned into a long prosperity. His critique of Tugan's work triggered a debate, the first real debate on crisis theory in the history of Marxism (cf. Krätke 2014). Louis Boudin, Anton Pannekoek, Conrad Schmidt, Otto Bauer, Heinrich Cunow, even Eduard Bernstein contributed to it, but Rosa Luxemburg stayed out of the fray.¹⁰ The debate lingered on for several years, but ended without any settlement. Some of the protagonists had become aware of the

⁹ Marx had read Danielson's articles on the development of capitalism in Russia, "Our Post-Reform economy", and had encouraged him to publish them as a book.

¹⁰ During the debate on revisionism, when preparing her critique of Bernstein, he had already admitted in private correspondence that she found the issues of crisis and growth

difficulties that the unsettled questions of the critique of political economy that Marx had bequeathed to them were more serious than they had presumed.¹¹ So, the ground was well prepared for another "revision" of Marx.

In 1913, after about fifteen years of preparations, Rosa Luxemburg published her only major treatise on political economy, the "Accumulation of Capital".¹² The book was meant to provide an explanation of Imperialism, as she announced in the subtitle (A contribution to an economic explanation of Imperialism). Implicitly, she launched an all out attack against the prevailing Marxist orthodoxy in the German social democratic party. The boldness with which she criticized Marx himself and introduced a far-reaching revision to one of the core parts of his economic theory, even dismissing the usually untouchable "method" of Marx' economic analysis, stunned friends and foes alike. Rosa Luxemburg, the stalwart defender of Marxist orthodoxy against "revisionist" heresies, did not hesitate to note and deplore Marx's "glaring inconsistencies", the "defects" of his reasoning, his "wrong approach" and "long winded detours", and to dismiss his rather "misleading formulation of the problem" (Luxemburg 1990a, pp. ; 2003, pp.). As she emphasized time and again, Capital, volume II had remained unfinished, crucial parts of Marx's analyses were left "most incomplete" and simply broken off.

Since 1907, she had worked as a lecturer in political

rather daunting.

¹¹ Richard Day and Daniel Gaido have recently published two volumes which make the main contributions to these debates available to an English speaking audience for the first time (see Richard D. Day / Daniel Gaido 2011, 2012).

¹² It was followed by a response to her critics, at book length, the "Anti-critique", written in 1915, and published only after her death, in 1921 (cf. Rosa Luxemburg 1990c).

economy and economic history at the party school of the German social democratic party, based in Berlin. Her lectures, covering a vast array of topics from the early ages of mankind until the tendencies of modern, industrial capitalism, were quite a success. So she started working on them and transforming them into a full-scale introductory textbook of Political Economy. The text was never finished, crucial chapters were never written or never large parts of the manuscripts have been lost, some of the remaining parts were only published in 1925, six years after Rosa Luxemburg's death.¹³ However, the fragments provide some hints as to her general conception of political economy and its critique. In the study of political economy, we look for explanations for the possibility of modern capitalism: How is an anarchic market economy on a world scale possible? How is continuous growth of such an economy sustainable in the long run? Eventually, as the development of capitalism has its distinct limits, the task is changed: From the investigation of the preconditions of capitalism - how is capitalism possible, how is capitalist development possible? - to the investigation of the conditions that render capitalism impossible and will bring capitalist development to its end. As Rosa Luxemburg saw it, the fine point of Marx' critique was just the determination of capitalism's historical limits - in historical space and time. An investigation that went clearly further than the identification of "inner" contradictions or the conditions of disequilibrium and crisis inherent to capitalism as such (cf. Luxemburg 1990c, pp. 443,445; vgl. 1990a, p. 411).

When she wrote her critique of Marx' reproduction schemes,

¹³ Several lecture notes and further manuscripts by Rosa Luxemburg have been published recently or are about to be published soon. Until very recently, most of the text of Luxemburg's introduction to political economy was not available in English.

she had no idea of the variety of Marx' manuscripts dedicated to the matter at hand. In fact, in May 1900 she had refused to participate in the editing work on Marx' many unpublished papers and manuscripts when Kautsky invited her to help him with what he was later to publish as "Theories of Surplus Value" in 1905 - 1910 (cf. Krätke 2010),¹⁴ So she missed the opportunity to study Marx' unpublished manuscripts for Capital, volume II and to become familiar with Marx' workshop.

In 1911, while she was working on her book, she gave some comments on the topic - in private letters where she did not restrict her language: To her close friend Kostja Zetkin she wrote in November of that year, that the Marxian reproduction schemes had already given her the creeps for a long time; now, at closer examination, she found them full of unreliabilities ("Windbeuteleien" in German, which is much harsher) (cf. Laschitza 2000, p. 411). In other words, Marx did not only not finish the job of analysing the process of (expanded) reproduction of total social capital, he did a lousy job altogether.

Her book starts with an examination of Marx' theory of the reproduction process of capital - as expounded in section III of Capital, volume II. In several chapters - chapter 4 to 9 of the first section - she examines first Marx' schemes of simple reproduction of total social capital - raising just a few objections of minor importance, like the way in which the reproduction of fixed capital - a difficulty that Marx avoided - or the way in which he deals with the production of gold - where Rosa Luxemburg proposes to put gold production into a separate,

¹⁴ In a private letter, Rosa Luxemburg commented upon Kautsky's proposal - which

third department of social production (cf. Luxemburg 1990a, pp. ; Luxemburg 2003, p.). Next she presents and discusses Marx' schemes of expanded reproduction. What bothers her is the apparent smoothness of the accumulation process which - in accordance with the rules of proportionality between the two departments as expounded by Marx - could go on for ever without any limits. That looks like an easy, "fool-proof mathematical exercise" to her and she wants to know whether Marx' scheme does fit in the real world of capitalism (cf. Luxemburg 1990a, p. ; Luxemburg 2003, p. 91). Obviously, she thinks not. In her view, Marx' schemes are valid for a socialist plan economy, but not for a capitalist economy. What Marx does not explain in the last chapter of volume II (largely drawn from his unfinished last manuscript, manuscript VIII of 1880/81) where the increasing additional demand comes from that would induce capitalists in department I and II to invest and expand their production? Who will buy the additional goods emanating from the expanded production apparatus of a continuously accumulating industrial capital? (cf. Luxemburg 1990a, pp. 102, 108; Luxemburg 2003, pp. 104, 110). Upon closer examination of Marx' argument, she concludes that the abstraction from money, money circulation and hoarding is at the core of the matter. As Marx does lift this abstraction in the very same manuscript, she scrutinizes his "attempt to resolve the difficulty" (in chapters 8 and 9) and rejects it. In her view, Marx' solution - the additional amount of effective demand coming from the continuous hoarding of many capitalists in both departments, a solution which is clearly in line with all of Marx's analyses of the turnover process of capital in the previous section II of volume II - can only be valid for one, highly specific and exceptional

was actually quite an honour to her -

case: For the transition from simple to expanded reproduction (cf. Luxemburg 1990a, pp. 114, 115; Luxemburg 2003, pp. 117, 118). But it cannot serve as an explanation for the continued process of accumulation in the longer run and under "normal" circumstances.

After a long detour through the history of political economy and the many debates on the role of "third persons" in the reproduction process, she comes back to the examination of Marx' schemes (in chapter 25), now taking issue with the core of Marx' argument: What Marx regards as an adequate solution to her problem, is insufficient, because the amounts of hoarded money capital will be too small to provide a sufficient amount of efficient demand for the growing production in the context of expanded capitalist reproduction (cf. Luxemburg 2003, p. 321). This assertion - it is not more than that - is sufficient for her to reject Marx' schemes outright. Whatever their merits, they cannot "explain the actual and historical process of accumulation" (cf. Luxemburg 2003, p. 328). Jumping from a theoretical argument into historical explanation, she spends the bulk of section III of her book (chapters 26 - 32) on an outline of a correct historical explanation of the accumulation process in the European countries. To overcome the unsettled problem she had identified in Marx' theory of accumulation, she proposes a solution which should take into account another set of "third persons", this time the large non- or pre-capitalist world as part of the real context of capitalist expansion and part of the capitalist world economy. From the logic and context of her argument it is not self-evident that these "non-capitalist" environments have to be found "outside" of the capitalist world in spatial terms. But that is the turn that she takes without further ado. In these last chapters of her book, she presents

her famous explanation of the historical phenomenon of imperialism and inter-imperialist rivalry between the advanced capitalist countries in particular. She makes no effort whatsoever to meet Marx on his own ground and, continuing and expanding the analysis on his terms, to provide an improved version of a scheme of expanded reproduction and accumulation.

3. The Luxemburg - debate: Round One

Luxemburg's Marx-critique was as harsh, even harsher than most of the criticism that the protagonists of "revisionism" had ever expounded. But in striking contrast with Bernstein, for instance, she went straight into the opposite direction - arguing in favour of the hypothesis of an inevitable "breakdown" of the capitalist world economy. In the longer run, capitalist accumulation on a world scale would no longer be possible and come to a grinding halt or end up in a worldwide stagnation and permanent crisis.

She had the great merit to trigger off an international debate which lasted until the 1930s and was never formally concluded. Because the leading Marxist theorists of her day were provoked by her attack to defend Marx' theory, they started reworking and reformulating it. No one denied, as Engels had already stated frankly enough that Marx had left the job unfinished and that something could and should be done about the incomplete theory of accumulation which clearly belonged to a fully-fledged analysis of the dynamics of modern capitalism.¹⁵

¹⁵ Account of this debate by professed Marxists of some kind or the other have been distorted by the fatal habit of reading everybody's contributions as open or clandestine statements of political views - right, centrist, harmonist, reformist, revolutionary. That is, of

In the end, the outcome of the debate was something Rosa Luxemburg never wanted: A much more sophisticated and formalized version of Marxian macroeconomic analysis, the beginnings of the systematic study of capitalist macrodynamics which had its effects - mostly through the work of Michal Kalecki - upon the Keynesian macro theory and modern growth theory.

Only a few reviews of Luxemburg's book in the socialist press were friendly - so the reviews by Franz Mehring and Julian Marchlewski in the "Leipziger Volkszeitung": Both hailed her book as a true enlargement of Marxian economic theory (cf. Marchlewski 1913, Mehring 1913). Both reviewers, however, had no expertise and certainly no reputation as political economists. Some reviews were quite hostile, like the one written by Max Schippel for the "Sozialistische Monatshefte". Schippel treated her very unfairly indeed, mocking her as a quack doctor who was inventing an "imaginary disease" cf. Schippel 1913, p.148).

Most of the reviewers of her book in the socialist press were not convinced at all by her effort to demonstrate the impossibility of equilibrium growth and the necessity of a breakdown of capitalism. Gustav Eckstein, in his very detailed and polite review in "Vorwärts", accused her of simply misunderstanding the reproduction schemes and their purpose, of missing the logic of Marx' argument.¹⁶ As he pointed out, Rosa Luxemburg had created an insuperable difficulty by tacitly introducing additional conditions into the reproduction schemes, assuming - instead of proving - a kind of "law" of equal

course, nonsense.

¹⁶ A logic that was not unfamiliar to Rosa Luxemburg, as her lectures on Capital, volume II clearly show.

accumulation in both departments or an equal rate of accumulation (cf. Eckstein 1913, p. 702ff, 707f). He was of course right. And he was also right in refuting her argument that European or American surplus production was being sold to the peasant populations of non-capitalist countries on a large scale. Rosa Luxemburg's own insights into the ways in which these countries and their populations were actually exploited by the imperialist powers were incompatible with that assumption (Eckstein 1913, p. 711 -112). Accordingly, Eckstein rejected her explanation of the limits of capitalism.

Another protagonist of the social democratic left in Europe, the Dutch astronomer Anton Pannekoek, a man quite close to Rosa Luxemburg as far as the actual policies of the social democratic party were concerned, criticized and refuted the central thesis of her book in his review, published in the "Bremer Bürgerzeitung" the very same year. He rejected her criticism of Marx' reproduction schemes outright, showing that the conditions of growth and increasing productivity of labour, hence rising organic composition of capital, could be met within the confines of Marx' schemes. Marx' models could be enlarged and differentiated, completely in accordance with his own method (cf. Pannekoek 1913, p. 685ff). What was more, Pannekoek did not even accept her explanation of imperialism, although he saw some value in her detailed description of the praxis of capitalist expansion in the last chapters of her book. But Luxemburg had failed to grasp the peculiarities of contemporary imperialist policies, for "imperialism is a modern phenomenon" and not identical with the colonialism of the 17th and 18th century or with the capitalist world policy of the first half of the 19th century. In particular, Rosa Luxemburg had misunderstood the economic reasons for the new world politics of the great

capitalist powers - which lay not in the search for new markets for selling surplus commodities but in the necessity of capital exports. Hilferding had done an excellent job, and Rosa Luxemburg had missed the points - both in her critique of Marx and in her economic explanation of imperialism (cf. Pannekoek 1913, p. 691 - 3).¹⁷ Rosa Luxemburg was apparently stunned by the lack of understanding for the problem and the solution that she had put forward in her book, as she admitted in a private letter to Franz Mehring (cf. Laschitza 2000, p. 420). Lenin, for his part, was quite pleased with Pannekoek's review. When he had read Luxemburg's book, he drafted an article against it, in which he again rejected her interpretation of Marx as completely wrong and her addition to his theory as an outright failure (cf. Lenin 1933, pp. 337 e.s.).

3.1 Round Two - Otto Bauer's critique

Rather quickly, the leading Marxist theorists of the time in the German speaking world responded to Luxemburg's Marx-critique.¹⁸ The most substantial critique came from Otto Bauer, in an article titled "The Accumulation of Capital", published in the leading theoretical journal of international socialism, the "Neue Zeit" in 1913.¹⁹ Politely but without any reservation, he attacked what he saw as just another version of the venerable "third-persons" theorem, now in a Marxist guise. He took up the

¹⁷ Anton Pannekoek was then a journalist working for German socialist newspapers. He had come to Germany to teach at the SPD's party school in Berlin. By training, he was an astronomer (he later wrote a very remarkable history of astronomy after he had become chair of astronomy at the university of Amsterdam) and a very well versed mathematician.

¹⁸ With the remarkable exception of Rudolf Hilferding.

¹⁹ Otto Bauer's article is one of the few contributions to the debate which has been translated to English by John E. King in 1985 (cf.).

challenge and set out to defend what he regarded as an essential part of Marx' economic theory: The analysis of the conditions under which an equilibrium growth of a purely capitalist economy was possible. Not beyond limits, but possible.

Bauer's critique of Luxemburg is different, as he dismisses her almost immediately and does not spend much space engaging with her argument and criticizing her mistakes. Instead, he develops a more sophisticated and more complex model of accumulation and capitalist growth, including population growth - although at a steady rate - and technical progress, that is to say a rising organic composition of capital in both departments. Initially, he keeps the rate of exploitation / surplus value constant, but does not relax this assumption later on. Nonetheless, he demonstrates the possibility of equilibrium accumulation and growth in a purely capitalist economy in terms of a time sequence - over four periods / years. In Bauer's model, the capitalists' rate of savings increases steadily from one period to the next. Unfortunately, he does not follow Marx' example and neglects the distinction between money accumulation and real accumulation (or direct investment) which Marx actually makes.²⁰ Explicitly, Bauer allows for the possibility of capital transfer between the two departments. In his model, capitalists can and do invest their savings, the saved and not consumed parts of surplus value that they have appropriated, outside their own or home department, shifting investments from one department to the other so that accumulation and growth remains possible and on a path of equilibrium. Bauer rejects Luxemburg's

²⁰ He did so in his later writings on the theory of crisis (cf. Bauer 2007). Actually, the preceding section II of Capital, volume II, dealing with the turnover of capital, had already shown the sources of an ever increasing "accumulation funds" for capital - while still maintaining the abstraction from credit.

solution to her problem - which he denies, as the accumulated part of surplus value can be realized - as outright false: Selling surplus products in the guise of means of production abroad, exporting them to the non-capitalist world would not solve the problem. On the contrary, it would impair accumulation and make it impossible in the long run. Moreover, Luxemburg does not explain, nor could she, how the people in non-capitalist areas of the world would be able to provide for a rising amount of additional effective demand, providing an ever expanding market for the capitalist industries in the core countries of capitalism. That is - without a constant flow of capital export from the capitalist countries to the non-capitalist parts of the world, upon which the historical imperialism highly depended.

Otto Bauer understood Marx' intention to provide for an additional ingredient for his theory of crisis perfectly well. So he did what Rosa Luxemburg had completely forgotten and avoided - he engaged in a discussion of the cyclical movement of the capitalist accumulation process. A process, that was characterized by a periodical change between overaccumulation and underaccumulation and did allow for a long term growth of capitalist economies, all the crises notwithstanding. He did not argue against the concept of "limits to the accumulation of capital", on the contrary. But in his view Luxemburg had failed to determine those limits. However, her theory of imperialism carried a kernel of truth in Bauer's view, as imperialism served to extend the limits of accumulation and to alleviate the crises that periodic overaccumulation entailed.

Bauer's growth model was "the most sophisticated piece of macrodynamic analysis attempted by any Marxian economist before

1914" (Howard / King 1989, p. 120).²¹ It has close affinities with the modern Harrod-Domar growth model. Of course, it has its weaknesses as well. The largest being its reliance upon the growth of population as the one and only independent variable which rules the movements of capital accumulation. In the Bauer model, full employment of the working class appears like an "iron law" of capitalist development.

3.2 Round Three - Rosa Luxemburg's Anti-critique

When Luxemburg found herself in jail again, during World War I, she had time to respond to her critiques. She did so, writing a large Anti-critique, mostly during the year 1915. After the end of the war and her untimely death in January 1919, her papers were partly lost, but the manuscript of her Anti-critique was saved. In 1921 her book was published. It was no great success, either. It is a highly polemical text. Rosa Luxemburg attacks her critiques on political grounds: They are all reformists, adhering to a flawed, "harmonist" view of the capitalist world system, denying the possibility of a "breakdown" of capitalism (cf. Luxemburg 1990b).

In her Anti-Critique, she focussed upon Otto Bauer: Most of the space in the book was devoted to ridicule and refute his elaborated version of a Marxist model of accumulation and growth - but avoiding any engagement with the finer points of model

²¹ Perhaps with the exception of Charasoffs study of 1910 which Otto Bauer had reviewed in the theoretical journal of the Austrian social democratic party, the "Kampf" (cf. Bauer 1911). Bauer's first contribution to the debate, his article on "Marx's theory of economic crises" (Marx' Theorie der Wirtschaftskrisen) of 1904, already

building. Gustav Eckstein was attacked viciously and very unfairly; obviously, Rosa Luxemburg was not aware of his fine work as a Marxist historian and political analyst.²² Of course, Anton Pannekoek, her political ally, could not be dismissed in this way; so she preferred to just ignore him. As she was in jail, she had no knowledge of two further critiques of her book, published in the same year of 1915: One by Conrad Schmidt, in the German journal "Sozialistische Monatshefte", the other by Sam de Wolff, in the Dutch socialist journal "De nieuwe tijd". Again, two of the most able Marxist economists of the time dismissed her argument outright.

She refuses to enter the terrain of theoretical debate and does not engage in any further mathematical exercises. Any effort to improve or enlarge the Marxian schemes is futile. In her view, the Marxian reproduction schemes were fundamentally flawed and no reformulation could save them. There are only two substantial points she makes in her polemic against Otto Bauer: The assumption of a constant rate of exploitation is not compatible with a rising organic composition of capital, it should be dropped in order to get a complete view of the capitalist accumulation process. The idea that capital accumulation would follow the growth of (working class) population is rather strange. However, her assertions against Otto Bauer's demonstration of a possible proportionate exchange between the two departments and hence the possibility of equilibrium accumulation and growth are simply wrong. Of course, she is right when she stresses the double nature of accumulation as both a political and an economic process in historical time (cf. Luxemburg 1990b, p. 519). But her belief that she had

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Her extremely unfair attacks on the Austro-Marxists, the group of young scholars

provided a scientific proof for the inevitability of an overall breakdown of the capitalist world economy is simply wrong and completely misguided.

Unfortunately, her defence only impressed her followers who felt encouraged to refuse any serious debate of anything that a "reformist" or "centrist" like Otto Bauer might have to say. Perhaps with the exception of Henryk Grossmann who was the only Marxist economist who provided a substantial criticism of Otto Bauer's model during the next round. Even Roman Rosdolsky, trying to reassess the whole debate in the 1950s, was impressed by the political attack against the so called "neo-harmonists". As Luxemburg did, he simply ignored the effort made by Otto Bauer to extend and develop the Marxian reproduction schemes into a fully-fledged theory of (cyclical) crisis (cf. Rosdolsky 1978,).

3.3 Round Four

During the 1920s, the debate went on, although in the shadow of a political struggle within the communist movement against a strand called "Luxemburgism". Only few Marxists dared to take Luxemburg's theory of imperialism as a frame of reference for their own work - only people outside of the world of the Communist parties and the Social democratic parties as well could dare to do so. Fritz Sternberg provides the most prominent example.

Inside the heartland of the communist movement, Nikolai

and intellectuals to which also Gustav Eckstein belonged, is a rather weird phenomenon indeed.

Bucharin wrote another critique of Luxemburg in the early 1920s, a critique that was inspired by his wish to come to grips with the phenomenon of imperialism after World War I. Eventually, he enlarged his original article and transformed it into a small book, published in 1925 (cf. Bucharin 1925). Here, Bucharin gave another highly sophisticated example of a Marxian model of accumulation and growth, taking into account most variables that had been discussed until then and redressing the proportionalities between the departments in order to come to a fully dynamized growth model. In Bucharin's version, we find rising rates of exploitation as well as rising organic compositions of capital in both departments, we deal with variable rates of accumulation (savings and investment) and (output) growth. Bucharin defends Marx' models on methodological grounds: To demonstrate the sheer possibility of limitless equilibrium growth is just a device designed in order to pinpoint the many possibilities of disequilibrium and unbalanced growth in capitalist development; the modelling of such a growth is not to be confused with assertions as to the likelihood that it will occur. What is more, he took Luxemburg's explanation of imperialism seriously and found it deeply flawed. Luxemburg fails to understand the implications of commodity exports to pre-capitalist markets. An export surplus can indeed provide a net increase in effective demand - but it will inevitably involve the export of capital to the pre-capitalist regions of the world. An element that Luxemburg fails to grasp and explain and which is firmly rooted in the historical experience and practice of European colonialism / imperialism.

One of the few defences of Luxemburg came from Fritz Sternberg who set out in the 1920s to give a new and comprehensive explanation of the phenomenon of imperialism (cf.

Sternberg 1926). Sternberg followed Rosa Luxemburg's lead with respect to her Marx-critique (some reservations notwithstanding). Her criticism was correct and completely justified, although she had missed some important points. In order to come to grips with imperialism, Marxist economists had to integrate the rise of the organic composition of capital in both departments as well as the difference of the organic composition of capital between them. Moreover, he tried to historicize most of the Marxian "laws of movement" of modern capital in a radical manner. In his view, they were only valid for certain periods in the history of modern capitalism and had to be specified accordingly. Following Luxemburg, he was the first to try to ingrate the non- or pre-capitalist areas into a long term periodization of capitalist development; he distinguishes different era's and different stages of imperialism (early and late imperialism): Depending upon the principal source of surplus labour / surplus population, one could distinguish different and subsequent periods of capitalist development - some of which, like his famous "honeymoon period", were much more favourable to the working class than others. Recently, this "honeymoon period" had come to an end, and the prospects of further capitalist development as well as the very nature of "imperialism" were changing accordingly. So Sternberg's work could be read as a defence as well as an extension of Luxemburg's original theory.

Curiously enough, Sternberg was most grimly attacked by Henryk Grossmann who, for his part, tried to reformulate and defend Rosa Luxemburg's original theory about the inevitable breakdown of capitalism in a more rigorous and radical manner (cf. Grossmann 1929). Grossmann, in his scathing review, ridiculed the lack of Marxist scholarship in Sternberg's

approach.²³ In Sternberg's book there is no scheme of expanded reproduction, just a numerical example which he does not analyse. So Grossmann and Helene Bauer, Otto Bauer's wife, had no difficulty to demonstrate the inherent weakness of his theory of crisis which rested upon assertions and some historical illustrations rather than upon an extension of macroeconomic analysis. Helene Bauer in her review just repeated the main arguments from her husband's article against Luxemburg - and she was right (cf. Bauer 1927).

The last big effort to buttress Rosa Luxemburg's original argument in favour of an inevitable limit to accumulation and eventual breakdown of capitalism was made by Henryk Grossmann just three years later (cf. Grossmann 1929). His starting point was not Luxemburg's but Otto Bauer's scheme of expanded reproduction, the very model that had been constructed in order to refute Rosa Luxemburg. Now Grossmann used it without changes; he just extended it - from the original four period sequence to a sequence of thirty-six periods. Even under the original assumptions made by Otto Bauer, the model - or better numerical example - ended up in a severe crisis because the path of accumulation could not be sustained in the longer run: Both capitalist consumption and accumulation would slow down and peter out because of an increasing lack of surplus value. A continuous rise of the rate of accumulation is only possible within certain time limits. In view of this central argument of the book, it is rather surprising that its author hardly mentions and never incorporates any rise of the rate of exploitation in his model, following the original assumption by

²³ Actually, the polemic between Sternberg and Grossmann raged on. When Grossmann's book on the "Law of Accumulation" was published in 1929, Sternberg replied with a critique in book-length (cf. Sternberg 1930).

Otto Bauer, instead of lifting it.

Grossmann's book was immediately under heavy attack. Sternberg took his revenge on Grossmann (cf. Sternberg 1929). Helene Bauer joined the fray again and accused Grossmann of just playing with numbers (and words) (cf. Bauer 1929). The most substantial criticism at the time came from Otto Benedikt who published a long article in the leading theoretical journal of the Communist International "Unter dem Banner des Marxismus". In his view, Grossmann had fallen far back behind Otto Bauer, as he had dropped the distinction between two departments and ignored the effects of technical progress which would not only affect the organic composition of capital but also labour productivity, real wages and the rate of exploitation. In order to prove a "law" of a tendency towards breakdown, Benedikt argues, one has to develop a rigorous model of capitalist accumulation in algebraic terms, a model where all the strategic variables determining the structure of the total social product and the total social capital, are consequently treated as interdependent variables. That is exactly, what he tries to do in his article, presenting all the relevant magnitudes, constant capital, variable capital, surplus value, rate of exploitation, organic composition of capital, rate of saving and rate of accumulation varying over time in both departments (cf. Benedikt 1929). Despite of the clumsy notation, this is a big step beyond the model as sketched by Otto Bauer in 1913.²⁴

4. Round Five: Otto Bauer's Reformulation of Marxist Macro-

²⁴ Another scathing critique of Grossmann's book came from Anton Pannekoek, who started with a brief review of the Luxemburg debate so far, defending both Luxemburg and Bauer against Grossmann (cf. Pannekoek 1934).

Economics in the 1930s

Otto Bauer never responded to Luxemburg's Anti-critique. However, he continued his work on the theoretical core of the debate - the model of accumulation and growth which should, according to Marx's intentions give a systematic clue for the explanation of all major and regular crises in capitalism. From his various manuscripts, only two pieces have survived. One short text, only comprising a few pages, has been published in exile, as an annex to Bauer's book on the present and future of world socialism, published under the title "Zwischen zwei Weltkriegen" (Between two World Wars) in 1936. The much larger manuscript presenting a full-scale analysis of the Great Crisis of the 1930s and a diligent presentation of all the salient elements of Marx' theory of crisis, including some innovations made by Bauer himself, has remained unpublished until this very day (cf. Bauer 2006).²⁵

The first short text is a fragment. It shows that Bauer had started developing a dynamic growth model - perhaps following the example given by Otto Benedikt a few years ago. Bauer's intention is to specify in algebraic form the very conditions not of a breakdown but of a state of overproduction and overaccumulation following from capitalist expansion plus technological innovation - hence to determine the conditions of a state of crisis that must regularly occur and reoccur in the course of capitalist development. In this model, Bauer works with many variables, the growth rates of which vary in time - more often than not at an accelerated pace. It is this simple, abridged version, presented without the further differentiation

²⁵ It will be published this year in the original German version (cf. Bauer 2014).

between departments of social production and without any analysis of monetary circulation, changing amounts of money and credit (which can be found in the larger, unpublished manuscript).

In the early 1940s, Paul Sweezy has used the Bauer-scheme of 1936, the only one known to him, as a starting point for his analysis of growth and crisis. Sweezy built his model referring to most of his forerunners, including Bucharin and Bauer. In particular, Sweezy claimed to have improved Bauer's model of 1936 and hoped to have strengthened the case of the Marxist theory of accumulation leading to crisis by this amended version. Bauer's model had passed unnoticed - as his book was not read by academic economists and Marxists were no longer interested in such matters in the second half of the 1930s. Sweezy's slightly amended version, however, was seriously discussed by economists, as for instance by Evsey Domar in 1948 (cf. Domar 1948). During this brief exchange, main stream (neoclassical) economists discovered, much to their surprise, the importance of Marx (and the Marxian school) as pioneers of a theory of accumulation and growth. Responding to his critics in 1949, Sweezy admitted that his aggregate dynamic model was a failure, because he - following Otto Bauer's sketch from 1936 - had given up Marx' original two sectoral scheme. That is, however, not what Otto Bauer did in his manuscript of 1935, unpublished and hence unknown to Paul Sweezy.²⁶

His finest critique, Georgescu-Roegen made two concluding

²⁶ There is a whole array of unpublished theoretical and empirical works on the crisis by Marxist economists that were stimulated by the Great Crisis of the 1930s, among them the doctoral dissertation by Richard Löwenthal of 1935, still unpublished, and a large study on the crisis by Louis B. Boudin, written 1937, and still unpublished as well. For details see my

remarks in a paper published in 1960: First, in his view, the original Marxist scheme of expanded reproduction could not be cast into "a mathematical correct model". If one took all the elements of capitalist dynamics as considered by Marx (and Bauer and Sweezy) into account, one ended up with no less than ten unknown functions (including their first derivatives with respect to t , as already specified by Bauer and Sweezy). The second difficulty is related to the confusion between stocks and flows, variables and their increments in time pertinent to these early efforts to construct a dynamic model in the Marxist tradition. What is more, the proof for the inevitability of crisis (and even more so with respect to an alleged breakdown) is not convincing as a capitalist economy can grow at a decreasing rate for a very long time, even unlimited. The strongest critical counterargument by Georgescu-Roegen, however, is geared at the principal aim of all such efforts - to predict the future of capitalism. In his view, this is just too complicated for mathematics. When we come to the problem of capitalism's change, its evolution or mutation into another form in historical time, "mathematics proves to be too rigid and hence too simple a tool for handling it" (Georgescu-Roegen 1960, p. 415). Rosa Luxemburg tried to explain a historical phenomenon, imperialism in its heydays, and she failed to bridge the gap between Marx' general analysis of capitalism and historical changes in the real worlds of markets, states and capitalisms. Her critics as well as her followers did not fare much better. The biggest problem for them was to disentangle the maze of theoretical problems that had become mixed up since the times of Tugan-Baranowsky and Kautsky, the problems of an analysis of capital accumulation, the problems of an explanation

of the general conditions of cyclical crises and the problems of an analysis of the long-term, secular development of capitalism as a world system - towards a state of enduring stagnation. Marx' great project still remains unfinished today, although thanks to the debate triggered by Rosa Luxemburg's ill-fated revision of Marx we understand some of the peculiar features of capitalist dynamics better.

5. An unexpected impact: Rosa Luxemburg and the (Post)Keynesians

The first English translation of Rosa Luxemburg's *Accumulation of Capital* was published after WWII, in 1951, with an introduction of Joan Robinson, already then a well-known votary of "Left" Keynesianism (cf. Robinson 1951). Joan Robinson was bound to publish her own *magnus opus* under the same title as Rosa Luxemburg's, the "*Accumulation of Capital*", a few years later (cf. Robinson 1958). In this later book, Robinson tried to do for the Keynesians what Rosa Luxemburg had tried to do for the Marxists in 1913: To combine the analysis of effective demand with the analysis of the overall development of capitalism as a whole in the long run. Robinson saw Luxemburg's effort to establish a better version of Marx's unfinished modelling of the accumulation process as a pioneer's work. All her praise notwithstanding, she raised very much the same objections that had already been raised by Rosa Luxemburg's various Marxist critiques, in particular by Otto Bauer. Unfortunately, she was unaware of the Luxemburg debate as it had unfolded from 1913 onwards. If she had known this body of Marxist scholarship, she would have been aware of the reasonably well advanced level of dynamic analysis that had already been

attained by Marxist economists - more or less at the same time as Keynes was struggling with the same problems.²⁷

Joan Robinson's perception, perhaps even her awareness of Luxemburg's book was due to the influence of Michal Kalecki whom she first met in 1936.²⁸ Kalecki, although lacking formal training as an economist, had been fascinated by the problem of the business cycles - or the theory of crisis, as Marxists would have it - for a long time. As a young socialist, he had become acquainted with the Marxist debates on imperialism and world crisis, and was familiar with Luxemburg's work. Trying to understand the causes of the great world economic and financial crisis as it unfolded since 1929, Kalecki started to work on a general theory of the capitalist business cycle since the early 1930s. Searching for the key determinants of this cyclical movement he ran into earlier efforts to deal with the "laws of motion" of the capital accumulation process, like Tugan-Baranowsky's and Rosa Luxemburg's . While accepting her basic idea about the importance of aggregate demand and its increase for a sustainable rate of capital accumulation, he rejected her solution to the problem: That capitalist economies could only overcome insufficient aggregate demand by forcing the creation of new markets and new consumer demand in noncapitalist regions of the world. Accordingly, he did not share her perspective that the exhaustion of such newly created markets in noncapitalist territories would usher in the final critical phase of capitalist development on a world scale. Governments in capitalist countries had more choices than that, and some of them were clearly linked to imperialist policies - as, for

²⁷ Otto Bauer was, of course, well aware of Keynes' work and made several references to it in his book on the great crisis.

²⁸ For the relationship between Robinson and Kalecki see Asimakopulos 1989.

instance, the growth of the arms sector and increased public spending to buy arms and build armies and navies. Rosa Luxemburg herself had devoted a whole chapter of her book on the economic effects of "militarism", that is increased government spending on the military, although she did not even try to spell out the consequences of this new element for the process of capital accumulation at large. In the context of her analysis, this failure to analyse public sector demand and increased military expenditure by the government in particular is explicable. Unlike at least some of her critics, Luxemburg did not even envisage the possibilities of credit and debt finance. Kalecki, well versed in monetary analysis, could easily imagine external export markets and debt-financed domestic government spending as alternatives and functional equivalents (cf. Kalecki 1971).

The link between Rosa Luxemburg and Michal Kalecki has been rarely discussed and rather avoided by Marxists. The exception that confirms the rule was provided by the work of the late Tadeusz Kowalik who devoted a whole book to the topic: It is a great book, explaining in much detail how Rosa Luxemburg, if she had allowed herself to be enlightened by her critics, and how some later Marxists, allowing themselves to be enlightened by the Luxemburg debate, might have rethought and reformulated the basic ideas of the "Accumulation of Capital" and saved it from oblivion(cf. Kowalik 1971).²⁹

6. The Legacy of Rosa Luxemburg

Except for the polemics it had stirred up, Rosa

²⁹ Kowalik's work on Luxemburg has been translated to Italian and Spanish, but not

Luxemburg's great book was soon forgotten. When confronted with serious criticism, she, as well as her few followers, had refused to engage in a strictly theoretical debate geared at solving the analytical problems that Marx had left unsolved. Nonetheless, and despite of a lot of repetition of older arguments, some progress had been made, although it was largely unrecognized by the majority of Marxists at the time. So one could give her a lot of credit for opening up new vistas on Marx' theory of accumulation and crisis - just by boldly attacking it and exposing some of its defects. The fruits, however, were only reaped after a long and winded detour, in a series of debates which were, more often than not, clearly determined by merely political preoccupations. The Luxemburg debate suffered as so many debates on the unsettled questions of Marx's critique of political economy from the ancient vice of overpoliticisation.

Her theory of imperialism, ill founded in economic analysis and stricken by inconsistencies as it was, had the strongest impact. Some of this impact was due to the popularity of any theory that would allow to restore and maintain the old "Marxist" idea of a causal link or "trigger-effect" between great economic crises and political revolutions. When the III. International established the concept of a "general crisis" of capitalism in the late 1920s as its official doctrine, "Luxemburgism" was created as a new deviation, associated with all sorts of dangerous thoughts. Even the leading economist of the Comintern, Eugen Varga, was again and again accused of "Luxemburgist" thinking by his adversaries. In the guise of "Luxemburgism", Rosa Luxemburg's economic and political thought

to English.

became completely distorted, and the official reading of her work was dominated by enumerations of her alleged "mistakes". Good Leninists, however, believing in the value of Lenin's pamphlet on "imperialism" as part of the official gospel, could not dismiss her completely. After all, Rosa Luxemburg had tried to show that imperialism was inherent in the very basic fabrics of capitalism and could not be regarded as a variety of policies the great powers might or might not pursue. Imperialism, invading and pervading non-capitalist territories, was fundamental, a "law" like feature of capitalist development. Even if Marxists disagreed about the details, Luxemburg's approach had an undisputable merit. Mainly in political terms, as it turned the attention towards the colonial world outside of the heartlands of a few advanced capitalist countries. If these regions of the world were vital for the viability of capitalism as a world system, as Luxemburg had maintained, it was worth the while of the socialist / communist movements in those heartlands to engage in and support struggles there - even if it was for the wrong theoretical reasons.

On the other hand, however, Luxemburg's analysis did not contribute much to the understanding of the transformations of the capitalist world economy triggered and / or accelerated by WWI and the Great Crisis of the 1930s. Most Marxists, including her most able critics, were caught in the spatial metaphor of the "non-capitalist" areas or regions. They did not take into account the possibilities of further capitalist expansion that lay in the transformation of those areas of everyday life and, actually, the economy at large in the capitalist countries that were not yet fully subdued to and integrated into the logic of capitalist production, exchange, consumption and accumulation. Eduard Bernstein had told them so already in 1899. But who would

listen to Eduard Bernstein, anyway?

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