# Capitalism's Contradictions

## Studies in Economic Theory before and after Marx

*Henryk Grossman*

*Translated by Ian Birchall, Rick Kuhn and Einde O'Callaghan*

*Edited and Introduced by Rick Kuhn*

Haymarket Books
Chicago, Illinois

Chapter Four, "The Evolutionist Revolt against Classical Economics" originally appeared in two parts as "The Evolutionist Revolt Against Classical Economics: I. In France—Condorcet, Saint-Simon, Simonde de Sismondi" and "The Evolutionist Revolt Against Classical Economics: II. In England—James Steuart, Richard Jones, Karl Marx," by Henryk Grossman in *Journal of American History* 51, no. 5 and 6, University of Chicago Press. © 1943, *Journal of Political Economy* The University of Chicago Press

Published in 2017 by
Haymarket Books
P.O. Box 180165
Chicago, IL 60618
773-583-7884
www.haymarketbooks.org
info@haymarketbooks.org

ISBN: 978-1-60846-779-2

Trade distribution:
In the US, Consortium Book Sales and Distribution, www.cbsd.com
In Canada, Publishers Group Canada, www.pgcbooks.ca
In the UK, Turnaround Publisher Services, www.turnaround-uk.com
All other countries, Ingram Publisher Services International,
IPS_Intlsales@ingramcontent.com

This book was published with the generous support of Lannan Foundation and Wallace Action Fund.

Cover design by Viktoria Ivanovna.

Printed in Canada by union labor.

Library of Congress Cataloging-in-Publication data is available.

10 9 8 7 6 5 4 3 2 1




# Contents

# Marx, Classical Political Economy and the Problem of Dynamics[1]

*Translated from the German by Rick Kuhn*

## 1.

In the dominant view, Marx is merely a student of the classical political economists, someone who completed their work, or their successor.[2] A precisely delineated conception is thus erected: the labor theory of value developed by [Adam] Smith and

1. Originally published as Grossman, *Marx, die Klassische Nationaloekonomie und das Problem der Dynamik*.
2. Pareto, *Les systèmes socialistes*, 340; Croce, *Historical Materialism*, 138; Schumpeter, *Economic Doctrine and Method*, 15; Wilbrandt, *Karl Marx*, 101; Engländer, "Böhm-Bawerk und Marx," 380. "It was Karl Marx . . . who, as a value theorist, was indeed the last great figure in the classical school." Douglas, "Smith's Theory of Value," 65. The socialists Franz Mehring, Conrad Schmidt, and above all Rudolf Hilferding, however, are no different. See Mehring, *Geschichte der deutschen Sozialdemokratie*, vol. 2, 250; Mehring, *Aus dem literarischen Nachlass*, 557; Schmidt, *Die Durchschnittsprofitrate auf Grundlage*, 112. Hilferding not only regarded Marx as an opponent and conqueror of but also as perfecting "Classical Economy which begins with William Petty and finds its supreme expression in Marx." Hilferding, *Finance Capital*, 21. Maurice Dobb does not go beyond this traditional view in his new *book*. If Marx offered no adequate "proof" of his theory of value, this was because he was not dealing with a new or unknown theory. "Marx was adopting a principle." "The essential difference between Marx and classical political economy lay, therefore, in the theory of surplus value." Dobb, *Political Economy and Capitalism*, 67–8, 75. [Grossman indicated that the author of Croce's book was Antonio Labriola, who, however, fell into the category of Marxist proponents of the notion that Marx's economics were essentially Ricardian. Labriola, *Karl Marx, l'économiste, le socialiste*, 79.]

[David] Ricardo, in its innermost essence, leads to socialism. This consequence was not, however, articulated by its founders. Marx was the first to think Ricardo's theory through to its end, as it were, providing its previously unarticulated final word.[3] This conception must certainly already appear to be extremely questionable from the general position of the *critique* of political economy, if "the development of political economy and of the opposition to which it gives rise keeps pace with the *real* development of the social contradictions and class conflicts inherent in capitalist production."[4]

Marx distinguishes four phases in the development of political economy: the first embraces the period of "classical economics" and the remaining three the various stages of "vulgar economics." According to Marx, the identity of the historical situation combines the representatives of classical political economy into one consistent intellectual school, despite their sometimes great individual differences (for example between [William] Petty, [David] Hume, and the physiocrats, and between these and Smith or Ricardo).[5] This was the period during which modern capitalism and consequently the modern working class emerged, thus the "period in which the class struggle" between the proletariat and the bourgeoisie "was as yet undeveloped."[6] Classical economics is the expression of rising industrial capitalism, wrestling for power. Its theoretical and practical thrust is not directed against the proletariat, which is still weak, but against the representatives of the old society, the feudal landowners and old-fashioned usurers. The feudal forms of ground rent and "antediluvian" interest-bearing capital have "yet to be subordinated to industrial capital and to acquire the dependent position which [they] must assume."[7]

Ricardo's theory of ground rent, like Hume's critique before it,[8] is directed against feudal landownership. Ricardo's theory of value does, at the same time, articulate the struggle between the capitalist class and the waged proletariat, in theory. But the industrial bourgeoisie and its theory are still "naïve," that is, can afford to engage in the pursuit of truth without regard for possible dangers and implications, as yet unsuspected and in fact not yet present, that follow from their own principles. So the labor theory of value is developed without fear of emphasizing in theory the contradictions between the working class and the propertied class that can be derived from it, or of highlighting the distinction between productive and unproductive labor.[9] For it was

3. "Smith's formulation of the problems of exchange value and of the distribution of the national product . . . was such as almost inevitably gave rise to the doctrines of post-Ricardian socialists and to the labour theory of value and the exploitation theory of Karl Marx." Douglas, "Smith's Theory of Value," 53. Similarly, Frank H. Knight (Chicago): "[Marx] is certainly the thinker who above all others worked out the classical (Ricardian) theory to its logical conclusions." Review of *A History of Economic Thought*, by Erich Roll, 105.
4. Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 500.
5. Ibid., 275.
6. Marx, *Capital*, vol. 1, 96.
7. Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 463. [Editor's interpolation.]
8. Hume, *Essays, Moral, Political, and Literary*, chapter 4, 320–30; Marx, "Economic Manuscript of 1861–63 [Notebooks XX to XXIII]," 390–91.
9. For example, Adam Smith, *Wealth of Nations*, vol. 2, 63, where he states that ground rent and profit eat away the wage.



the representatives of the feudal occupations who were particularly ranked into the category of unproductive labor.

Those authors are "classical," according to Marx, to the extent that they express this front-line position; for example, John Locke, in his polemic against "unproductive" feudal landownership and ground rent, which according to him "is in no way different from usury."[10] This front-line position is particularly apparent in their theory of "productive" and "unproductive" labor, in which the relationship of the rising bourgeoisie to preceding classes and outlooks is entirely clear. This theory starkly contradicts both the perspective of the ancient world, "when material[ly] productive labor bore the stigma of slavery and was regarded merely as a pedestal for the idle citizen," and that of the social classes and occupations carried over from the feudal period, declared to be unproductive.[11]

The language of classical political economy is, Marx thinks,

> the language of the still revolutionary bourgeoisie which has not yet subjected to itself the whole of society, the state etc. All these illustrious and time-honored occupations—sovereign, judge, priest, officer etc.—with all the old ideological castes to which they give rise, their men of letters, their teachers and priests, are *from an economic standpoint* put on the same level as the swarm of their [i.e., the bourgeoisie's] own lackeys and jesters maintained by the bourgeoisie and by idle wealth—the landed nobility and idle capitalists. . . . They live on the produce of other people's industry, therefore they must be reduced to the smallest possible number.[12]

So long as the bourgeoisie has not yet confronted the "real productive laborers" in conscious, openly hostile antagonism—laborers who "moreover tell it that it [the bourgeoisie] lives on *other* people's industry"—it can still confront the "unproductive classes" of the feudal period as "the representative of productive labor."[13]

When the bourgeoisie has consolidated its position of social power in the course of economic development, in part taken possession of the state and in part concluded a compromise with the feudal classes and "ideological castes," and, in addition, once the proletariat and its theoretical representatives arrive on the scene and draw egalitarian and socialist conclusions from the classical economists' labor theory of value (the right of the working class to the full fruits of its labor), "things take a new turn." Political economy "tries to justify 'economically,' from its own standpoint, what at an earlier stage it had criticized and fought against."[14] At this point classical political economy disappears from the historical stage, and the hour of vulgar economics ([Thomas] Chalmers, John Ramsay McCulloch, Jean-Baptiste Say, and Germain Gar-

10. [Marx, "Economic Manuscript of 1861–63 [Notebooks XX to XXIII]," 89, summarizing Locke, *Some Considerations on the Lowering of Interest*, 36.
11. Marx, "Economic Manuscript of 1861–63 [Notebooks VII to XII]," 197. [Editor's interpolation.]
12. Ibid. [Marx also emphasized "industry" and "other."]
13. [Ibid., 32, 197.]
14. Ibid., 198.

nier) has struck (the second phase of political economy). The vulgar economics of the 1820s and 1830s, the "metaphysical period" of political economy,[15] is the expression of the existence of the victorious and now conservative bourgeoisie, which therefore apologetically obfuscated the prevailing order, and whose theoretical representative in England was [Thomas] Malthus. He combated any tendency in Ricardo's work that was "revolutionary in relation to the old society."[16] Like Ricardo, Malthus did indeed wish to have "bourgeois production," but only so long as "it is not revolutionary . . . but merely creates a broader and more comfortable material basis for the 'old society,'" a society with which the bourgeoisie had just struck a compromise.[17]

Now the classical theory of the distinction between productive and unproductive labor was abandoned (as in Say and Malthus)—out of fear of the proletarian critique that had already registered its demands—and replaced by the conception that all labor is equally productive. Malthus likewise turned the real meaning of Ricardo's theory of ground rent, aimed against the landowners, into its direct opposite, by introducing capitalism's problem of sales. Malthus does emphasize the inevitability of generalized overproduction, affecting all branches of production. He only does so, however, in order to prove the necessity of unproductive consumers and classes, that is, "buyers who are not sellers," so that the sellers can find a market in which they can dispose of what they supply. Hence the necessity of waste (including war).[18] Finally, Ricardo's labor theory of value is now also abandoned. By regarding the wage as a proportion of the total social product (relative wage), Ricardo articulated the class relation that is inherent in the capitalist economy.[19] With the development of the real antagonisms of capitalist production, the embryonic theoretical class antagonism contained in Ricardo's labor theory of value began to polarize. The (theoretical) opposition "to political economy has [already] come into being in more or less economic, utopian, critical and revolutionary forms."[20]

[William] Thompson (1824), Percy Ravenstone (1824), and [Thomas] Hodgskin (1825, 1827),[21] the theoretical representatives of the working class in England, draw egalitarian conclusions and demands from Ricardo's labor theory of value.[22] In the face of such demands, as an 1832 text by Malthus openly admits, the classical labor theory of value was abandoned through successive small changes and transformed into a meaningless theory of costs of production: the specific value-creating role of labor was

15. Ibid., 217. Compare also the postface to the second edition of *Capital*, in which Marx states that 1830 "sounded the knell of scientific bourgeois economics." *Capital*, vol. 1, 97.
16. Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 245.
17. Ibid., 244.
18. Ibid., 216–43.
19. Ibid., 226–27.
20. Ibid., 500.
21. [See Thompson, *Inquiry into the Principles*; Ravenstone, *Thoughts on the Funding System*; Hodgskin, *Popular Political Economy*, and Hodgskin, *Labour Defended*.]
22. See "Opposition to the Economists (Based on the Ricardian Theory)" in Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 373–449.



obliterated.[23] A particular productivity—a creation of value!—was now attributed to land and capital in and of themselves, and labor was now only acknowledged as another factor of production, alongside capital and land. In this way Ricardo's conception of the wage as a relation of the working class's share in total production that it has itself created was likewise overturned, justifying capitalists' profits as the result of the "productivity" of their capital (not of labor). In similar fashion, ground rent was justified as the fruit of the productivity of the land, which meant that antagonism toward landownership that characterized classical theory now lapsed and became meaningless.

The third phase of political economy, the period in the 1830s and 1840s following the July revolution, was a period of sharpening class antagonisms and cumulative proletarian critique of the prevailing social order in England (John Gray and [John Francis] Bray) and France ([Constantin] Pecqueur).[24] It also saw the first attempts to organize the workers' movement politically: the Saint-Simonians, [Philippe] Buchez, Louis Blanc, and [Pierre-Joseph] Proudhon's struggle against interest-bearing capital.[25] The result is an intensified phase of vulgarization and transformation of classical economics.[26] The last remnants of the original content of the theory were eradicated: those real contradictions of capital that were still admitted and highlighted by Malthus and Say (Say's disproportionality theory of crisis; Malthus's theory of generalized crisis) were now denied and disappear from economic theory. In Frédéric Bastiat's work (1848) capitalism is transformed into a harmonious system.[27]

The fourth phase of political economy, after 1848, falls into the period during which fully developed class antagonisms became unmistakably visible during the June days in Paris, as the working class first struggled for its own goals.[28] The result was the complete dissolution of the Ricardian school and a departure from all genuine theory. Economic theory was abandoned and replaced by the historical description of phenomena (the older historical school, with Wilhelm Roscher at its head).[29] Or economic theory was degraded to a pseudotheory, as it departed entirely from the terrain of economic reality and took flight to the higher regions of psychology (first attempts at a subjective theory of value by Nassau Senior and Hermann Heinrich Gossen, 1854). This likewise achieved the desired end: the turn away from real class antagonisms and granting equal rank to capital and labor in the creation of value. The theory of costs of

23. Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 253–46.
24. [The French Revolution of July 1830 overturned the monarchy of the House of Bourbon, which represented the power of landowners, and replaced it with the reign of Louis Philippe of the House of Orléans, who served broader, bourgeois interests, though not those of industrial capital.]
25. [See Gray, *The Social System*; Bray, *Labour's Wrongs and Labour's Remedy*; Blanc, *The Organization of Labour*. The Saint-Simonians followed the teachings of the pioneering French utopian socialist Henri Saint-Simon.]
26. See Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 499–503.
27. [See Bastiat, *Economic Sophisms*. But perhaps of greater relevance here is Bastiat, *Harmonies of Political Economy*.]
28. [In June 1848 the French government, brought to power by the revolution in February, brutally suppressed a workers' uprising provoked by its attack on state support for the unemployed.]
29. Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 502.

production—the equation of labor, land, and capital as factors in the creation of value—was unsatisfactory, as it represented a trivial, circular argument. In attempting to explain the process of the creation of value, the value of products was reduced to the value of the factors jointly acting to produce the product, such that value is explained by value. (There is no such circle in Marx's labor theory of value, as labor creates value, but is not itself a value: it is the use value of the commodity labor power). Under the pressure of the left Ricardians' critique, the theory of costs of production had to be abandoned. But since a return to the labor theory of value was undesirable, a way out was found by transforming economics into psychology. In principle, Senior had already accomplished this change.[30] Basing himself on one of the two interpretations of labor provided by Smith, according to which labor is not seen as an objective expenditure of energy (measured by time) but rather as the subjective effort employed in producing an article, Senior treats labor as a psychological sacrifice. In order for capital to be granted equal status with labor as a parallel factor in the creation of value, it must also be turned into a psychological variable. If the wage is the reward for the effort of labor, then the interest on capital is the reward for the subjective sacrifice of saving, renunciation of immediate consumption of capital.

The "development" of the individual phases of political economy, as sketched above, imposes the formulation of the following question: can Marx, the theoretician of the proletariat at an advanced stage of capitalist development, take over and "complete" the theories and categories of classical economics— in particular those of Ricardo—as the dominant conception maintains, if Ricardo, like classical economists in general, expressed bourgeois interests at a much lower stage of capitalist development, a stage of undeveloped class antagonisms? And the thesis that Marx's original achievement in his "socialist critique" of capitalism is that he drew socialist conclusions inherent in Ricardo's labor theory of value—in short, that he was a "Ricardo turned socialist"—is just as much to be rejected. As pre-Marxist socialists also offered a socialist critique of capitalism, such a critique cannot be regarded as the specific essence of Marx's theory. But Marx reproaches the egalitarian left Ricardians for the "superficiality" of their critique, namely, that they base their critique on Ricardo's theory and only attack "particular results of the capitalist mode of production" instead of its "manifold presuppositions." An effective socialist critique could only be based on a specific, new theory, with the assistance of new economic categories.

In his critique, Marx proceeds from the mystifying character of the reified forms of value, that is, the fact that relations which people enter into in the process of production appear as relations between objects, things, and that these reified forms conceal true relations between people. Marx therefore speaks of the deceptive appearance of all forms of value. In contrast to transparent, precapitalist forms, the relation between exploiter and exploited in the modern capitalist form of value is opaque, because in the wage relation, which is a form of value that regulates the "exchange" between the wage



laborer and the entrepreneur, it appears that the worker's wage fully compensates all his labor and no unpaid labor is performed.[31]

According to classical theory, all exchange transactions correspond strictly to the law of value, that is, equal labor times always exchange for equal labor times. This principle also applies to the exchange relation between the workers and the entrepreneur. Now, according to Marx, it is quite evident that there is no exchange of equivalents between worker and entrepreneur. If workers were to receive as much in wages (measured in labor) from entrepreneurs as they give in labor, then profit—surplus accruing to entrepreneurs and hence also the capitalist economy, which is based on this profit—would be impossible.[32] Since both profit and capitalism do, however, exist, no exchange of equivalents can take place. Marx's entire effort is directed at showing that the transaction between capitalist and worker is as much an exchange of nonequivalents as of equivalents, depending on whether this transaction is regarded within the sphere of circulation (on the market) or during the process of production. The exchange of equivalents between worker and capitalist on the market is merely an appearance arising from the form of exchange. Despite the alleged exchange of equivalents,

> the laws based on the production . . . of commodities become changed into their direct opposite. . . . The relation of exchange between capitalist and worker becomes a mere semblance belonging only to the process of circulation, it becomes a mere form, which is alien to the content of the transaction itself, and merely mystifies it. The constant sale and purchase of labour power is the form; the content is the constant appropriation by the capitalist, without equivalent, of a portion of the labour of others, which has already been objectified, and his repeated exchange of this labour for a greater quantity of the living labour of others.[33]

Marx regards it as one of Smith's great merits that he at least sensed that the exchange between capital and wage labor is a flaw in the law of value. Although Smith could not clarify it, he could see "that in the actual result the law is suspended."[34] According to Marx, it is precisely the form of exchange value that mystifies the real content. "The wage form thus extinguishes every trace of the division of the working day into necessary labour and surplus labour, into paid labour and unpaid labour."[35] Just as the wage form does, so too all the other forms of value that emerge in the process of exchange mystify.[36] The reified forms of value (exchange value, ground rent, profit, interest, wages, prices, and so on) conceal and invert the real relations between people, by making them appear as the "fantastic form of a relation between things," "a social

31. "On the surface of bourgeois society the worker's wage appears as the price of labour." Marx, *Capital*, vol. 1, 675.
32. Ibid., 676.
33. Ibid., 729–30.
34. Marx, "Economic Manuscript of 1861–63 [Notebooks I to VII]," 393.
35. Marx, *Capital*, vol. 1, 680.
36. Ibid., 169, 173–4; and Marx, *Contribution to the Critique*, 289.

hieroglyphic," "something dark and mysterious."[37]

Classical economics did seek to dissolve the mystifying categories of value into "labor," and thought that in doing so it grasped the essence behind the deceptive appearance of phenomena. Marx wants to demonstrate that this attempted solution leads to contradictions that could not be overcome on the basis of classical political economy. Any glance back at earlier economic epochs shows that mystifying forms of value first arose in the period of commodity production and exchange.[38] Resolving these forms of value into "labor" turns their mystifying character into an eternal feature of all social processes, as labor itself is definitely a "nature-imposed necessity" of human existence.[39] Experience contradicts this view, however, and this contradiction is insoluble from the standpoint of the classical economists.

For Marx, who wants to grasp the "concrete" in thought, the mystifying categories of value cannot simply be eliminated or ignored, to be replaced by other, "true" categories. Even though the phenomena of exchange value are mystifying, they are still an important component of reality. The point is not to eliminate one mystifying factor and substitute another but rather to demonstrate the necessary connection between the two and to explain what is deceptive in the phenomena of value. Because capitalism has a dual reality, mystifying and nonmystifying sides, and binds them together in a concrete unity, any theory that reflects this reality must likewise be a unity of opposites.

It has become almost banal to assert that Marx taught that monetary processes should not be regarded as the primary elements in economic events but only as their characteristic reflexive determinations, and that real processes should be sought behind the veil of money, on the side of commodities, within the process of production. The acknowledged polar opposition between commodity and money is repeated within the world of commodities itself as the opposition between the commodity's value and its use value. For it is not the metallic existence of money that is deceptive but rather its character as value.[40] Marx sarcastically criticizes the "crude . . . vision" of political economy, which only perceives what is misleading in exchange value, in its "developed shape" *as money*, but not in its preexisting form of the *values of commodities*, to the extent that they occur as mutual equivalents for each other.[41] It is precisely this equivalent form that Marx sees as a puzzle: the "internal opposition between use value and value" within the individual commodity becomes visible in the "external opposition" of two commodities, in which one counts "only as a use value" and the other commodity—money—"only as exchange value."[42]

37. Marx, *Capital*, vol. 1, 165, 167; vol. 2, 430–31; "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 451.
38. Marx, *Capital*, vol. 1, 153–54.
39. Ibid., 175.
40. Marx, "Comments on James Mill," 213–14.
41. Marx, *Capital*, vol. 1, 147–49.
42. Ibid., 153.



The illusion is not due merely to the money form but to the value form in general. Consequently, real economic processes have to be sought not only behind the veil of money but behind the veil of value in general.

## 2.

In the section of the first volume of *Capital* dealing with "The Fetishism of the Commodity and Its Secret," Marx attempts to penetrate the mystification involved in the exchange value form.[43] Two different, [though] in their basic notion analogous methods serve this end. The first is the method of historical comparison between the period of commodity production and earlier periods when there was no production or exchange of commodities and consequently no exchange value. In these periods there was, therefore, no mystification: personal relations of dependence appeared in unconcealed form, and were not veiled by the process of exchange.[44] In order to illustrate this, Marx presents three different types of economy that do not produce commodities: Robinson Crusoe, medieval feudal lords with their serfs who perform compulsory labor, and finally the patriarchal peasant family. In all these cases producers create useful objects for the satisfaction of their own needs. As there are no exchange values, "all the relations between Robinson and these objects that form his self-created wealth are . . . simple and transparent."[45] What is mysterious and mystifying about the production of commodities evidently does not derive from the use value side of commodities but is instead connected only with the process of exchange and exchange value.[46]

Marx arrives at the same result by the method of comparing various sides of commodity production itself, value side with use value side, the process of valorization with the labor process. In short, the means of seeing through the mystifying character of the categories of exchange value is, in fact, use value! The use values of earlier historical periods are just as much the result of human labor as the products of the epoch of commodity production. But only in this contemporary period do products assume a mystifying character. The same source—labor—cannot yield such totally different results. It is not sufficient to say that commodities are the products of "labor," as such, just as those of earlier economic epochs were. Instead, it is necessary to distinguish two different moments[47] of labor, its "dual character." First, labor that is "concrete," "useful," creating not value but rather objects of use: the labor of the joiner, tailor, weaver, which functions in the technical labor process and as "productive activity appropriate to its

43. Ibid., 163–77.
44. Ibid., 169.
45. Ibid., 170.
46. "The whole mystery of commodities, all the magic and necromancy that surrounds the products of labour on the basis of commodity production, vanishes therefore as soon as we come to other forms of production." Ibid., 169.
47. ["Moment" is used here in the Hegelian sense of "aspect."]

purpose" of the appropriation of the natural world, is a nature-imposed necessity for all social formations.[48] Secondly, general human labor "that creates exchange value," functioning in the process of valorization, the moment of labor that only appears in one particular social formation (of commercial interaction).[49] Only with the arrival of exchange value does the object of use become a commodity.[50] It is evident that only this second side of labor, the characteristic that it "creates exchange value," is the origin of all that is mystifying and fetishistic. The reduction of the forms of value to labor pure and simple, as carried out in classical economics, is false because labor as such is an unreal abstraction, a "mere spectre."[51]

In this way Marx arrived at the differentiation of the "double character" of the labor represented in commodities, which in his own eyes constituted what was "fundamentally new" in his theory.[52] With a pride he seldom expressed, Marx emphasizes the importance of his discovery: the examination of the twofold character of labor was the "point . . . crucial to an understanding of political economy."[53] He saw in this element a decisive break between his conception and that of all his predecessors. And in fact, from the new standpoint of a two-dimensional conception of economic processes, he repeatedly criticizes the classical political economists in principle, reproaching them for their one-dimensional theory exclusively concerned with value. Time and again he raises the objection that classical political economists and their successors did not distinguish the dual character of labor. "Classical political economy in fact nowhere distinguishes explicitly and with a clear awareness between labour as it appears in the value of a product, and the same labour as it appears in the product's use value."[54] And then Marx makes this general objection more precise in specific criticisms of William Petty, Adam Smith, Ricardo, and Hodgskin.[55] This alone is sufficient to show that we find

48. Ibid., 133, 174–5, 176, 179.

49. [Marx uses the phrase "labor that creates exchange value" in *Contribution to the Critique*, 271.]

50. Marx, *Capital*, vol. 1, 153.

51. Marx, *Capital*, vol. 3, 954.

52. Marx to Friedrich Engels, January 8, 1868, 514.

53. Marx, *Capital*, vol. 1, 132. Marx himself, in other places in his work and letters, also repeatedly identified precisely this theory as his original contribution to the understanding of economic events, the "fundamentally new" element of his achievement. For example, in 1859 in *Contribution to the Critique* and in 1867 in *Capital*, vol. 1.

54. Marx, *Capital*, vol. 1, 173. Similarly, p. 313, and frequently elsewhere.

55. Against Petty: "Labor as the source of exchange value is confused with labor as the source of use value." Marx, "Economic Manuscript of 1861–63 [Notebooks XX to XXIII]," 248.

Against Adam Smith: "He does not distinguish the twofold character of labour itself: labour that creates value, by the expenditure of labour power, and labour that creates objects of use (use values), as concrete useful labour." Marx, *Capital*, vol. 2, 453 and similarly 460.

Against Ricardo: "What Ricardo does not investigate is the specific form in which labor manifests itself as the common element of commodities. . . . Ricardo does not sufficiently differentiate between labor in so far as it is represented in use values or in exchange value." Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 325. [Marx emphasized "specific."] Similarly *Capital*, vol. 1, 174 and 313.

Against Hodgskin: "In his investigations into the productivity of capital, Hodgskin is remiss in that he does not distinguish between how far it is a question of producing use values or exchange values." Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 401. Also see Koepp, *Das Verhältnis der Mehr-*



ourselves here at the real center of Marx's innovation in comparison with the classical political economists. The great significance of the new conception is that Marx found in it a means of eliminating what was deceptive in the pure categories of exchange value and thus created a foundation for his further research into capitalist production, which gave him the possibility of grasping the true interconnections of this production, behind the veil of value.

## 3.

The results of our analysis are particularly confirmed by those statements by Marx in which he deals with his relationship with the classical political economists and indicates the place he claims for himself in the development of political economy.

Such statements in *Capital* as well as *A Contribution to a Critique of Political Economy* reveal that Marx regarded classical political economy as fundamentally concluded, completed by Ricardo, because in Ricardo "political economy ruthlessly draws its final conclusion and therewith ends."[56] Marx judged John Stuart Mill's attempts to develop classical political economy beyond this limit and to accommodate the principles of classical theory to the demands of the working class as a "shallow syncretism" and "a declaration of bankruptcy by 'bourgeois' economics."[57] So did Marx himself yet again complete what already had been completed and "further develop" what had already been concluded? According to Marx's own conception, he stands in starkest opposition to classical theory and not only as regards its specific theories (such as theories of wages, ground rent, crises, and so on) but also to the very theoretical foundation of economics. He does not aim, therefore, "to develop classical theory further" but rather to undertake a "scientific attempt to revolutionize a science."[58]

He expressed himself quite clearly about the nature of this "revolutionizing." After first developing the dual character of the commodity in the first chapter of the *Contribution*, in the section "Historical Notes on the Analysis of Commodities," he provides a characterization of his theoretical position and its relation to those of his predecessors: "The decisive outcome of the research carried on for over a century and a half by classical political economy, beginning with William Petty in Britain and Boisguillebert in France, and ending with Ricardo in Britain and Sismondi in France, is an analysis of the aspects of the commodity into two forms of labor—use value is reduced to concrete labor or purposive productive activity, exchange value to labor time or homogeneous social labor."[59]

*werttheorien*, 32, 34, 39.

56. Marx, *Contribution to the Critique*, 301. He expresses himself similarly in the postface to the second edition of *Capital*, vol. 1, 96.

57. Marx, *Capital*, vol. 1, 98.

58. Marx to Ludwig Kugelmann, December 28, 1862, 436. [Marx emphasized "scientific."]

59. Marx, *Contribution to the Critique*, 292.

The issue is therefore one of a contrast between two conceptions, one of which (the English) took exchange value as its main object, the other (the French) use value. That is, each only grasped one side of reality. Marx's actual theoretical position only emerges in sharp profile when it is seen from the perspective of this historical background. Only then is it understandable why Marx identified the discovery of the dual form of labor as the "decisive discovery of the research carried on for over a century and a half by classical political economy." Marx's theory of the dual character of labor is the critical synthesis, and only as such a further development, of both conceptions.

The following analysis is intended to show that Marx fundamentally transformed the most important categories inherited from classical economics, based on the new viewpoint that he had elaborated. In Marx's work they all obtain a value and a material side.

The *commodity* is a dual entity, a unity of exchange value and use value. This is because its source, *labor*, has a twofold character, which of necessity reveals itself not only in the commodity but in all the products of labor. The commodity is the unity of exchange value and use value.[60] The *capitalist production process* is the unity of the technical labor process and the valorization process.[61] While the means of production, raw and auxiliary materials, are transformed by human activity into material products, use values, during the labor process, the valorization process is the site of the creation of new values, whose excess over the values used in production results in surplus value and its derivatives (industrial profit, ground rent, gains made through trade, interest, and so on). This dual character is also apparent in the *management of the capitalist production process*, the necessity of which results from the division of labor, the increasing scope of the means of production employed, and the necessity of controlling their proper use.[62] On the one hand the management function is necessary in any economic system, insofar as it arises from a social labor process with a division of labor, like the function of an orchestra conductor. On the other hand, under the capitalist mode of production the capitalist exercises the management function by virtue of ownership of capital; it is "made necessary by the capitalist and therefore antagonistic nature of that process."[63] The process of reproduction of total social capital is also "not only a replacement of values, but a replacement of materials, and is therefore conditioned not just by the mutual relations of the value components of the social product but equally by their use values, their material shape."[64] The *category of wages* has the same dual character. On the labor market, the worker does not sell "labor," that is, the activity, since labor does not take place on the market, but rather the commodity "labor power": the capacity to labor. For this the worker receives as countervalue, as the wage, an exchange value (as in the sale of any other commodity). Only later in the labor process, thus outside the market, does this labor power become an activity, that is,

60. Marx, *Capital*, vol. 1, 125–27.
61. Ibid., 283, 304, 425.
62. Ibid., 449.
63. Ibid., 450.
64. Marx, *Capital*, vol. 2, 470.



when it is used by the entrepreneur.[65] Surplus value is obtained precisely from this use value of labor. By splitting the classical category of (wage) labor in this way into its use and exchange value sides, the contradictions in which the classical economists entangled themselves could be avoided.

The category of *capital* also has a dual character. The classical political economists already made the distinction between fixed and circulating capital. Marx took this distinction over but gave it an entirely different meaning, in which, yet again, the difference between the value and use value sides of fixed capital became decisive. The difference between fixed and circulating capital in the sphere of circulation employed by the classical economists is meaningless. It is only valid for productive capital, that is, in the sphere of production, in the labor process.[66] As money or as a commodity, capital is neither fixed nor circulating.[67] The material bases of fixed and circulating components give rise to the distinct characteristics of the useful forms, in which they function as factors in the labor process.[68] Circulating capital is used up in a single working period, while fixed capital functions in a series of "repeated labour processes" due to the durability of its natural form. The result of this difference in the duration of the lives of different capitals, that is, the time aspect, is the completely different manner in which fixed capital is replaced, on the one hand as value and on the other as use value, in its natural form. Marx derived the necessity of periodic crises already under simple reproduction from this difference in the mode of replacement.[69]

The category of the *organic composition of capital* changes in a similar way. Ricardo already made the distinction between capital-intensive and labor-intensive spheres of production, which was important for his theory of profit. But he conceived of it purely in terms of value. Marx split Ricardo's category into its use value and exchange value sides in order to reunite them in a synthesis.[70] The category of organic composition, transformed in this way, takes on a completely different function, not only for the explanation of profit, as in Ricardo's work, but also as the "most important factor" in the accumulation of capital.[71]

65. Marx, *Capital*, vol. 1, 292.
66. Marx, *Capital*, vol. 2, 246–47, 269–70, 282, 288–89.
67. Ibid., 270, 278.
68. Ibid., 237, 241, 246.
69. Ibid., 237, 298, 246, 302; compare "Replacement of the fixed capital" (a) in the money form, (b) in kind, in Ibid., 528–45.
70. "The composition of capital is to be understood in a twofold sense. As value . . . [and a]s material, as it functions in the process of production. . . . I call the former the *value* composition, the latter the *technical* composition of capital." The mutual relation between the two is called the *organic* composition, which is apparent in the *value* composition, "in so far as it is determined by its technical composition and mirrors the changes in the latter." Ibid., 762. Similarly *Capital*, vol. 3, 244–45, 254, 264; and "Economic Manuscript of 1861–63 [Notebooks VII to XII]," 493.
71. Marx, *Capital*, vol. 1, 762. The importance of the distinction between the technical and value composition of capital is already apparent in Marx's creation of entirely different terminological designations for them: the technical composition in its material form is expressed symbolically as *MP:L* (the relation of the means of production to labor) and the value composition as *c:v* (the relation of constant to variable capital).

Finally, the same dual aspect is apparent in the category that occupies the central place in Marx's system: the *falling average rate of profit*, the "driving force in capitalist production."[72] Repeatedly in *Capital*, "the internal opposition between use value and value, hidden within the commodity" is emphasized, and the development and growth of this contradiction as capitalist production develops is explained.[73] The nature of the opposition between use value and value in the commodity and why it constantly assumes ever greater dimensions was never previously treated as a problem. Now, when seen in connection with the presentation of the development of the productive power of labor in the first volume,[74] the presentation of the tendency of the rate of profit to fall in the third volume of *Capital* shows that Marx also derives this category from the dual character of labor, namely, the inverse movement of the mass of use values and values as a consequence of the increase in labor's productive power.[75] The richer a society, the greater the development of labor's productive power, the larger the volume of useful things that can be made in a given labor time. At the same time, however, the value of these things becomes smaller. As with the development of labor's productive power, an ever-growing mass of means of production (MP) is set in motion by a relatively ever-falling mass of labor (L), the unpaid part of the labor (surplus value or profit) must also progressively fall [relatively]. In capitalist terms, growing social wealth is expressed in the tendency for the [rate of] profit of a given capital to decline. The decline in [rate of] profit, the factor that regulates and drives the capitalist mechanism, also calls the continued existence of this mechanism into question.[76] The greater the mass of use values, the more pronounced the tendency for the rate of profit to fall (in value terms).

In its interpretation of Marxist economics the dominant theory has, however, expunged the entire theory of the dual character of labor indicated above, that is, precisely

72. Marx, *Capital*, vol. 3, 368.

73. Marx, *Capital*, vol. 1, 153, 181, 198, 209; "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 247–48.

74. Marx, *Capital*, vol. 1, 136–37.

75. Marx, *Capital*, vol. 3, 318–19.

76. For a more precise justification for this deduction it is noted that, with the development of the productive power of labor, by which "we always mean the productivity of concrete useful labour," the same labor produces a growing mass of useful goods, of material wealth. The rising mass of useful things can, however, correspond to a fall in the value of each thing and even of their total value. "This contradictory movement arises out of the twofold character of labour." Marx, *Capital*, vol. 1, 137. Now, it is an empirical law of the capitalist mode of production that its development is accompanied by a relative decline in variable in relation to constant capital. "This simply means that the same number of workers . . . sets in motion, works up, and productively consumes, within the same period, an ever-growing mass of means of labour, machinery and fixed capital of all kinds, and raw and ancillary materials." "It is just another expression for the progressive development of the social productivity of labour." Marx, *Capital*, vol. 3, 318. Looked at in terms of use value, constantly growing masses of useful things arise, which, however, represent ever-smaller amounts of value. "Since the mass of living labour applied continuously declines in relation to the mass of objectified labour . . . the part of this living labour that is unpaid . . . must also stand in an ever-decreasing ratio to the value of the total capital applied." In short, "The progressive tendency for the general rate of profit to fall is thus simply the expression, peculiar to the capitalist mode of production, of the progressive development of the social productivity of labour." Marx, *Capital*, vol. 3, 319. [Marx emphasized "the expression, peculiar to the capitalist mode of production."]



what is specific to Marxism and what distinguishes it from classical political economy, in order, subsequently, to incorporate it into classical theory's lines of thought. That this "incorporation" was no mere accident is apparent when Benedetto Croce virtually credits it as one of the merits of the dominant theory.[77] In showing the untenability of classical theory, the intention is to demonstrate thereby the invalidity of Marx's theory.[78]

## 4.

From its origins, theoretical political economy was a theory of abstract exchange value: where it did concern itself with production it dealt solely with the value side, passing over the labor process.[79] Since the rise of marginal utility theory and the mathematical school, the analysis of the concrete production process was increasingly excluded as a component of theory, only considered in establishing its preconditions and overall framework. Analysis was concentrated almost exclusively on relations between given market variables. It therefore had a static character and was unable to explain dynamic structural changes in the economy. Marx's economic theory deviates in principle from both of these tendencies.

The capitalist mode of production is governed by the relation: exchange value–increase in exchange value, (M–M').[80] As a faithful expression of the bourgeois economic system, classical theory was always only a theory of abstract exchange value.[81] Adam Smith does begin his work *The Wealth of Nations* by emphasizing the division of labor as the source of wealth. A people's wealth consists of an abundant supply of the results of labor: useful things. In the subsequent course of his work, however, he forgets use values; they are not used any further in the economic analysis.[82] Certainly, there are also presentations of material and structural relations. They have, however, an exclusively descriptive character. His theory is one of abstract exchange value. The social

77. "It has even been possible to unite with the body of admitted economic doctrines those of Marx, which seemed revolutionary, for these are only definitions of a particular casuistry." Croce, *Philosophy of the Practical*, 379.

78. In a book commemorating the 150th anniversary of the publication of *Wealth of Nations*, Paul H. Douglas endeavors to show that "the contribution of Adam Smith to the theory of value . . . [was] not great," which necessarily led to the failure not only of classical but also of Marx's theory. But "the failure was not the failure of one man, but of a philosophy of value, and the roots of the ultimate contradiction made manifest to the world in the third volume of *Das Kapital* lie embedded in the first volume of the *Wealth of Nations*." Douglas, "Smith's Theory of Value," 69.

79. "The pivots of any theory of the economic process are their teachings about value and interest . . . and four fifths of theoretical economic literature consists of research into or controversies about these subjects." Schumpeter, "Eugen von Böhm-Bawerk," 67.

80. [M is the value represented by money capital laid out at the start of the circuit of capital; M' is the expanded value of represented by money generated at the end of the circuit.]

81. Marx consequently speaks of the "accentuation of quantity and exchange value" by the classical economists, in the "most striking contrast" to "the writers of classical antiquity" (Plato, Xenophon), "who are exclusively concerned with quality and use value." *Capital*, vol. 1, 486.

82. Compare Elster, "Smiths Lehre," vol. 3, 213. Further, Bousquet, *Essai sur l'évolution*, 199; and Myrdal, *The Political Element*, 61.

equilibrium between supply and demand, which yields the "natural price," is exclusively a value equilibrium.[83] The same applies to Ricardo. Chapter 20 of his *Principles*, where he elaborates the distinction between use value and value, and the importance of "wealth," of use values, remains an alien body in the book.[84] Ricardo's entire ingenuity is concentrated on value terms (profit), and the use value side of commodities plays no role in his analysis. The life of the working class depends on the mass of use values that can be bought with a capital. The entrepreneur, meanwhile, is only interested in exchange value, the expansion of exchange value, that is, profit. Ricardo expressed this in the now-famous dictum that for the employer who annually makes £2,000 profit on a capital of £20,000—10 percent—"it would be a matter quite indifferent whether his capital would employ a hundred or a thousand men . . . provided, in all cases, his profits were not diminished below £2,000."[85] Whether a given capital employs a hundred or a thousand workers depends on the specific economic structure. Ricardo is indifferent to this. Marx emphasizes that Ricardo is only concerned with net revenue (pure profit), with the excess, in value terms, of price over costs, not with gross revenue, that is, the mass of use values necessary for the maintenance of the working nation. For Ricardo these are considered only as costs, to be pushed down as low as possible. Marx says: "By denying the importance of gross revenue, i.e. the volume of production and consumption apart from the value-surplus—and hence denying the importance of life itself—political economy's abstraction reaches the peak of infamy."[86]

Ricardo's central interest is the theory of distribution: "To determine the laws which regulate . . . distribution is the principal problem in Political Economy."[87] In a letter to Malthus he calls political economy a theory of laws that govern the proportional division of a given wealth among the various social classes. He regarded the determination of the mathematical relation between the parts of this given totality as "the only true object of the sciences."[88] This point of departure renders Ricardo's method aprioristic and deductive: his theories can be derived from a very small number of premises. Classical theory is more a system of logical deductions than research into and presentation of the objective economic relations of the capitalist mode of production.

In postclassical economics this tendency to avoid the real labor process becomes even more pronounced. In itself the principle of labor [as the source of] value contains a revolutionary element. It indicates, as the classical political economists themselves stated, that workers do not receive the full product of their labor under the prevailing social order, and that rent and profits on capital represent deductions [from it]. The egalitarian

83. Elster, "Smiths Lehre," vol. 3.

84. [Ricardo, *Principles of Political Economy*, 182–91.]

85. Ibid., 234–35.

86. Marx, "Aus David Ricardo," 421 and following.

87. Ricardo, *Principles of Political Economy*, 1.

88. "Political economy you think is an inquiry into the nature and causes of wealth; I think it should rather be called an inquiry into the laws which determine the division of the produce of industry amongst the classes who concur in its formation. No law can be laid down respecting quantity, but a tolerably correct one can be laid down respecting proportions." Ricardo to Thomas Malthus, October 10, 1820, 175.



Ricardians in England merely drew the conclusion implicit in the classical labor theory of value when they explained that a social situation in which workers received the full product of their labor is, fundamentally, the only proper and "natural" one.[89]

The reaction of right-wing students of Ricardo to this theoretical turn of the left Ricardians was to become ever more conservative. They scented a threat to class peace in Ricardo's theory of value.[90] Any analysis of the production and labor processes was avoided, in order to avoid the awkward question of the labor theory of value and its dangerous implications for distribution and the prevailing social order. Analysis was restricted to market phenomena, exchange: "Exchange," says Bastiat, "is political economy."[91] According to Léon Walras, the founder of the Lausanne school, political economy is "the theory of exchange of value and of exchange; on the contrary, he [Walras] forbade us to study production and distribution entirely."[92]

For fear of ending up in opposition to prevailing propertied interests, every effort was made to give economic theory the most abstract and formal shape possible, abandoning any qualitative, concrete content.[93] In short, efforts were made to erect a theory of distribution based on a theory of markets in order to furnish proof, by means of a theory of allocation, that all factors of production are rewarded in proportion to their contribution to the product and that, consequently, workers receive in wages full compensation for their labor.[94]

A second line of development also begins to become apparent just as early. Out of the same need to flee from reality, it pushes economic theory onto another terrain,

89. See, in particular, the sharp formulation of workers' rights to the full product of labor in Hodgskin, *Labour Defended*.

90. See, for example, Charles Knight's book, which scathingly attacks all opponents of the prevailing rights of property, including Hodgskin, and characterizes them as "ignorant of mankind," "destroyers" and "ministers of desolation." *The Rights of Industry*, 210, 212. Somewhat later, [Henry Charles] Carey formulated this view most clearly: "Ricardo's system is one of discords . . . its whole tends to the production of hostility among classes. . . . His book is the true manual of the demagogue, who seeks power by means of agrarianism, war and plunder." *The Past, the Present and the Future*, 74–75.

91. [Bastiat, *Harmonies of Political Economy*, 97.] Compare Bousquet, *Essai sur l'évolution*, 226.

92. Bousquet, *Essai sur l'évolution*, 208. Walras's analysis is in fact confined to exchange relations. He disposes of the entire "production process" with one word. The production process is replaced by a symbol, the concept of "coefficients of production," which means those quantities of productive goods used in the manufacture of one unit of output. In this purely formal manner, each unit of production is then allotted a corresponding "production coefficient."

93. August Walras makes this quite clear in a letter to his son Léon on February 6, 1859: "Une chose qui me plaît parfaitement dans le plan de ton travail, c'est le projet que tu as et que j'approuve de tous points, de te maintenir dans les limites les plus inoffensives á l'égard de M.M. les propriétaires. Cela est très sage et très facile á observer. Il faut faire de l'économie politique comme on ferait de l'accoustique ou de la mécanique." ["One thing that I find especially pleasing in the plan for your work is the project you have, of which I totally approve, to stay within the least offensive limits as regards property owners. This is very wise and very easy to observe. It is necessary to do political economy as one would do acoustics or mechanics."] See Leroy, *Auguste Walras, sa vie, son oeuvre*, 289.

94. John Bates Clark constantly tried to prove the proposition that the formation of prices under free competition allocates to each individual exactly in accordance with his productive efforts. "Natural law, so far as it has its way, excludes all spoliation." In a polemic against von Thünen he affirms that "the natural law of wages gives a result . . . [that is] morally justifiable." *The Distribution of Wealth*, 324.

that of psychology. This begins with Jean-Baptiste Say, who starts with the use values of commodities, understanding them not as physical phenomena but rather as psychological variables, the subjective utilities of the objects, and who constructed a subjective theory of value on [the basis of] this "service." From Say through Senior (1836) in England, [Jules] Dupuit (1844) in France, and Hermann Heinrich Gossen (1854) in Germany, the subjective theory of value led on to the theory of marginal utility as a theory of general hedonism.[95] In the process, political economy's object of inquiry shifted from the realm of things and social relations onto the terrain of subjective feelings. "Böhm-Bawerk's analysis of subjective value is the purest and most rationalistic hedonism," as Böhm-Bawerk's tenth supplementary discussion "On the 'Measurability' of Sensations" particularly shows.[96] The process of production is passed over.[97] Analysis is confined to market phenomena, the explanation of which is sought in human nature.

An even higher level of abstraction is represented by those attempts to make economics into a mathematically "exact" science that consequently disregard any qualitative content in economic phenomena. Market phenomena are one-sidedly regarded as mere "economic quantities" and, where possible, are expressed in mathematical equations. This tendency in modern theory is, perhaps, formulated most clearly by Joseph Schumpeter.[98] The process of production, like all objective economic relations, lies outside the analysis. According to Schumpeter, the essence of economic relations rests on a relation "between economic quantities," which is indeed reduced to the relation of exchange; all other relations among economic quantities are neglected as inessential.

Summarizing, it can be said that although theoretical schools and tendencies have changed a great deal over the entire century since classical economics, they possess the common trait that the real labor process and the social relations entered into during its course are excluded from their theoretical analyses.[99]

95. [See Senior, *Outline of the Science*; Dupuit, "On the Measurement of the Utility"; Gossen, *Laws of Human Relations*.]

96. Compare Myrdal, *The Political Element*, 98; and Böhm-Bawerk, "On the 'Measurability' of Sensations."

97. One could easily respond that, on the contrary, there are the well-known sections on "The Capitalist Production Process" and "Roundabout Methods of Production" in Böhm-Bawerk, *Capital and Interest*, vol. 2, 79–88, 89–94. It would be self-deception, however, to anticipate that Böhm-Bawerk really does describe the capitalist production process. All that is learned are general concepts that do not seek to grasp the specific features of the period of capitalist production but are instead intended to apply, in their abstract universality, to all periods. Thus, for example, the statement that objects of use can be made in two ways: directly, such as picking wild fruit from a high tree; or indirectly, by first cutting a stick from another tree and then knocking the fruit down. Böhm-Bawerk, *Capital and Interest*, vol. 2, 82. The creation of such an "intermediary product," a tool, is the creation of "capital" and hence the conduct of "capitalist production," which for Böhm-Bawerk is identical with any form of indirect production. This confusion rests on a trivial confusion of the technical labor process with the valorization process, so that for Böhm-Bawerk, every tool is already "capital." Hence the wild [American] Indian or Zulu who uses a boat to catch fish is a capitalist and carries on "capitalist production." Böhm-Bawerk, "On the 'Measurability' of Sensations," 81. According to Böhm-Bawerk's terminology, capitalist production was already present at the most primitive level of culture.

98. Schumpeter, *Das Wesen und der Hauptinhalt*, 50 and following.

99. With the possible exception of the [younger] historical school in Germany dominated by [Gustav] Schmoller, which, however, because of its descriptive and eclectic character and rejection of theory, can be passed over here. [Editor's interpolation.]



Marx's critique is directed against political economy's abstract value approach, as was the contrasting critique made by the older historical school. The latter sought, however, to overcome the abstract "absolute" character of classical theoretical deduction by means of superficially and indiscriminately drawing on concrete historical or statistical material about production, consumption, trade, tax, the conditions of workers or peasants, and so on. It remained purely descriptive, denying, in effect, the possibility of knowing theoretical laws. But Marx set himself the task of "revealing the economic law of motion of modern society."[100] This cannot be done, however, by abstracting from the "real world" and merely clinging to its aspect as "economic quantities." Such a procedure is not political economy but the "metaphysics of political economy," which, the more it detaches itself from real objects by way of abstraction, "the more [it] imagine[s] [itself] to be getting all the nearer to the point of penetrating to their core."[101] As reality does not merely consist of values but is rather the unity of values and use values, Marx's critique begins from the twofold character of economic phenomena, according to which the essential character of the bourgeois economic system is given by the specific connection of the valorization process to the technical labor process. Of course, subjectively, the entrepreneur is only interested in the value side, in the valorization process of his capital, in profit. But he can only realize his desire for profit through the technical labor process, by making products, use values. And the capitalist period impresses its specific stamp on precisely the specific character of this labor process: from being a means of satisfying needs it becomes an instrument of the valorization process.[102] Marx accuses previous economic theory of only looking at individual, isolated sectors instead of grasping the concrete totality of economic relations.

The monetary system of the mercantilists merely analyzed the circuit of capital in its money form within the sphere of circulation. The physiocrats (Quesnay) grasped the problem at a deeper level yet regarded the economic process as an eternal circuit of commodities, because the production of commodities was not actually the work of human beings but of nature. Finally, the classical economists (Adam Smith, Ricardo) did take the production process as the object of their analysis, but only to the extent that it is a valorization process. In this way, by detouring through production, they eventually arrive at the same formula that constituted the basis of mercantilism.[103] In contrast to

100. Marx, *Capital*, vol. 1, 92.

101. Ibid., 163, 165. [Editor's interpolation.]

102. "In the capitalist mode of production the labour process appears only as a means towards the process of valorisation." Ibid., 711; compare Marx, *Capital*, vol. 2, 461.

103. According to Marx, the deep similarity between capitalist production and the mercantilist system becomes particularly evident in crises. When all values and prices are subject to enormous disturbances, there is suddenly a hunt for stable metallic currency, hoarding of gold, as the one secure thing in the midst of general insecurity, as the "*summum bonum*" [highest good] "just as it is regarded by the hoarder." This hoarding of gold expresses how "the actual devaluation and worthlessness of all physical wealth" is the natural consequence of a mode of production based on abstract exchange value, because alongside abstract exchange value, "all other commodities—just because they are use values—appear to be useless, mere baubles and

his predecessors, Marx emphasizes the decisive importance of the production process, regarded not merely as a process of valorization but, at the same time, as a labor process. This does not mean, however, that the two other forms of the circuit of capital, as money and commodities, may be ignored. Capitalist reality is a unity of circuits: the process of circulation (of both money and commodities) and the process of production (as the unity of the valorization and labor processes). Only to the extent that it is the unity of the labor and valorization processes does the production process, according to Marx, constitute "The basis, the starting-point for the physiology of the bourgeois system—for the understanding of its internal organic coherence and life process."[104] When the production process is regarded as a mere valorization process—as in classical theory—it has all the characteristics of "hoarding," becomes lost in abstraction, and is no longer capable of grasping the real economic process.[105]

Because Ricardo's categories of value are the expression, if only one-sided, of concrete reality, namely, the valorization process, they are taken over by Marx in principle and developed further. At the same time, however, he modifies them, by rounding their exclusively abstract value character out with the material side, and elaborates their dual character. The meaning of Marx's critique of Ricardo's categories of value and the changes he made to them moves in the same direction as his critique and transformation of [Georg Wilhelm Friedrich] Hegel's dialectic.[106] Both exhibit the same basic feature, being directed against the abstract and final character which Ricardo's categories of value and Hegel's dialectic share, because both abstract from "real determinateness." In his critique of Hegel's dialectic, Marx compares, in characteristic fashion, the logic with which Hegel begins the *Encyclopaedia*[107] with money and value: it is "mind's coin of the realm" and the "mental value of man and nature," because it is "totally indifferent to all real determinateness" and has become "thinking which abstracts from nature and from real man: abstract thinking."[108] Similarly, money represents the "most irrational" form of capitalism, and in interest-bearing money capital, capital has achieved the

toys." Marx, *Contribution to the Critique*, 378. Although political economy imagines itself to be superior to the mercantile system and assails it as "utterly wrong," as illusion, it shares the same "basic presuppositions" as the mercantile system. As a consequence, the monetary system at present "remains not only historically valid but retain[s its] full validity within certain spheres of the modern economy." Marx, *Contribution to the Critique*, 390. [Editor's interpolation]. Compare *Capital*, vol. 3, 670, 706–7, 727.

104. Marx, "Economic Manuscript of 1861–63 [Notebooks VII to XII]," 391.

105. Accordingly, for Marx, only concrete labor functioning in the technical labor process, creating use values, is "real," "genuine" labor. *Contribution to the Critique*, 293, 296–97. [This translation has been modified because it rendered "real" and "*wirklich*" as "concrete," which did not capture the full nuance of Marx's expression, especially as earlier in the German text he also used the phrase "*konkrete Arbeit*." Marx, *Zur Kritik der politischen Ökonomie*, 115, 130–31.] Abstract labor creating exchange values is merely the "bourgeois form" of labor; "labor which creates exchange value is a specifically bourgeois feature." Marx, *Contribution to the Critique*, 298. It is precisely this labor that sets exchange value, which is responsible for all market catastrophes, devaluations, overproduction, stagnation. Marx, *The Poverty of Philosophy*, 135–38.

106. Marx, *Capital*, vol. 1, 103.

107. [Hegel, *The Encyclopaedia Logic*.]

108. Marx, "Economic and Philosophic Manuscripts of 1844," 330. [Marx italicizes "mental value" and "abstract."]



"pure fetish form" "in which all its determining features are obliterated and its real elements [are] invisible; in this form it represents merely independent exchange value."[109]

Marx also puts this decisive philosophical position into practice in economics: the abstract study of value obscures "real determinateness," the qualitative content of the concrete labor process, which impresses its specific, differentiating features on the capitalist economy. These can only be grasped by demonstrating the specific connection of the valorization process to the technical labor process in each particular epoch.[110] The "value-form, whose fully developed shape is the money-form, is very simple and slight in content."[111] The category of exchange value leads an "antediluvian existence."[112] Exchange value can be found in ancient Rome, in the Middle Ages, and under capitalism. Different contents are hidden behind each of these forms of exchange value. Marx emphasizes that "exchange value," detached from the concrete relations under which it has arisen, is an unreal abstraction, as exchange value "cannot exist except as an abstract, one-sided relation of an already existing concrete living whole." Whoever says "exchange value" presupposes "population which produces under definite conditions."[113] Of course, "political economy . . . is not technology."[114] The point is not, however, to study the valorization process in separation from the particular labor process, on whose basis it arose and with which it constitutes a unitary whole. "The concrete is concrete because it is a synthesis of many determinations, thus a unity of the diverse." The task of science consists of the "reproduction of the concrete" "by way of thinking."[115]

Just as the paleontologist reconstructs the entire skeleton and even the presumed muscles and movements of an animal from a few excavated bones, Marx reads the necessary tendencies of capital that are peculiar to an epoch from the structure of the labor process in the particular epoch and the type of tools used in it. For "technology reveals the active relation of man to nature, the direct process of the production of his life, and thereby . . . the social relations of his life."[116] "The hand-mill gives you society with the feudal lord; the steam-mill, society with the industrial capitalist."[117] Since social rela-

109. Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 462. [Editor's interpolation.]

110. Hegel already criticized this tendency to mathematicization, which only grasps one side, the relations between quantities, in the concrete totality of reality and neglects all the remaining qualitative moments. "Its purpose or principle is quantity. This is precisely the relationship that is non-essential, alien to the character of the notion. The process of knowledge goes on, therefore, on the surface, does not affect the concrete fact itself, does not touch its inner nature or notion, and is hence not a conceptual way of comprehending." Hegel, *Phenomenology of Mind*, 41. He consequently emphasized that the task of economics consists not merely in representing quantitative but also, at the same time, qualitative relations and movements of their elements in their "complexity." Hegel, *Outlines of the Philosophy of Right*, 187. [Grossman's original text has *Verwirklichung*, "realization," but given the passage he refers to and the structure of his own sentence, what seems to be meant is *Verwickelung* ("complexity").]

111. Marx, *Capital*, vol. 1, 90.

112. Marx, "Introduction," 38.

113. Ibid., 38.

114. Ibid., 24.

115. Ibid., 38.

116. Marx, *Capital*, vol. 1, 493.

117. Marx, *The Poverty of Philosophy*, 166. In a letter to Kautsky, Engels criticizes him for having paid in-

tions are closely bound up with the forces of production, changes in the tendencies of capital can be read from changes in these forces.

The best illustration of Marx's theoretical thought is provided by chapters 14 and 15 of the first volume of *Capital*, the chapters on "Manufacture" and "Machinery and Large-Scale Industry."[118] They are by no means historical-descriptive depictions, in which Marx seeks to present genetically how large-scale industry arose out of manufacture. Both chapters have an eminently theoretical character, which is proven by the fact that they are merely subsections of the part of *Capital* dealing with "The Production of Relative Surplus Value." What characterizes manufacture and large-scale industry by means of machines as two distinct phases of capitalist production? Both have a capitalist character; both are based on wage labor and are governed by the pursuit of profit. The technical labor process in each is, however, completely different. Manufacture represents a "productive mechanism whose organs are human beings."[119] In contrast, modern large-scale industry is based on machines. So precisely it [the technical labor process] marks the distinctness of capitalism's different phases. The example of the derivation of these objective tendencies of capital from the analysis of the concrete labor process and its instruments, machinery, illustrates the difference in principle between Marx and other theoretical tendencies in the study of economic events. Further consequences arising from this for the problem of crises and dynamics will be dealt with later.

While transformations in the mode of production during manufacture begin with labor, in large-scale industry they proceed from the instruments of labor: machinery.[120] The process is as follows: machinery makes muscle power dispensable and thus facilitates the incorporation of women and children into the production process on a massive scale. It lowers the price of labor power and increases surplus value, because the wages of the entire "parcelized family," doing labor that is many times greater, are now no higher than that previously received by the individual head of the family alone.[121] The degree of exploitation of labor increases in an avalanche.[122] Further, the tendencies to employ minors and immature people and simultaneously to strengthen the despotism of capital through the extensive employment of women and children break down the resistance put up by the male workers.[123] The material consumption of the ma-

sufficient attention to the role of the labor process. "You should not separate . . . technology from political economy as you do. . . . The tools of the savage condition his society just as much as do more modern ones capitalist society." Engels to Karl Kautsky, June 26, 1884, 156. [Engels emphasized "technology" and "his."]

118. Marx, *Capital*, vol. 1, 455–91 and 492–639. It is no accident that so large a part of the presentation in all the volumes of *Capital* is devoted to the technical labor process. The chapter on the shaping of the labor process by machinery, in the first volume alone, encompasses nearly 150 pages. But much space is also devoted to the presentation of the technical labor process in its connection with the valorization process.

119. Ibid., 457, 468.

120. Ibid., 517.

121. [This phrase is used by Marx in German but does not appear in the English translation of *Capital* referenced here. See Ibid., 518, and Marx, *Das Kapital*, 355.]

122. Marx, *Capital*, vol. 1, 517.

123. Ibid., 526. See pp. 489–90 on the insubordination of workers characteristic of the period of manufacture.



chinery, which represents a large capital value and which must have interest paid on it and be depreciated, does not only occur when it is in use but also when it is not in use, as a result of the destructive effects of the elements. Hence the capitalists' tendency to make labor continue day and night. It is further strengthened by the circumstance that every new invention threatens to devalue machinery. Hence the capitalists' efforts to minimize the danger of the "moral" depreciation of the machinery by reducing the period in which its total value is reproduced.[124] "Hence too the economic paradox that the most powerful instrument for reducing labour-time suffers a dialectical inversion and becomes the most unfailing means for turning the whole lifetime of the worker and his family into labour-time at capital's disposal for its own valorisation."[125]

A further impulse to the prolongation of labor time therefore comes from savings on outlays for additional machinery and buildings, otherwise normally required for the expansion of the scale of production. The expansion in the scale of production without these additional outlays signifies an increase in the mass of surplus value, with a simultaneous reduction in capital expenditure per unit of the commodity produced, which further increases the mass of profit.[126]

Machinery leads to the tendency for labor to become more intense and particularly in all areas where workers' resistance has made the extensive prolongation of the working day impossible because of legal prohibitions. In the factory, "the dependence of the worker on the continuous and uniform motion of the machinery had already created the strictest discipline."[127] The increased speed of machinery forces the worker to become more attentive and active.[128]

Here the tendency for the rate of valorization to fall and to create an industrial reserve army also comes into play. At higher levels of capitalist development and with its general application, machinery, whose purpose is to enlarge relative surplus value and hence the mass of surplus value, brings about a countertendency, that is, toward a fall in the rate of valorization. For the mass of surplus value that can be obtained depends on two factors: the rate of surplus value and "the number of workers simultaneously employed."[129] In the hunt for increased relative surplus value, the capitalist is driven to constantly develop labor's productivity by expanding the application of machinery in relation to living labor, and he "attains this result only by diminishing the number of workers employed by a given amount of capital."[130] A part of the capital that was previously variable and yielded surplus value progressively becomes constant capital, which produces no surplus value. The result is apparent in the tendency to create an excess

facture.

124. Ibid., 528.

125. Ibid., 532.

126. Ibid., 529.

127. Ibid., 535.

128. Ibid., 536–37.

129. Ibid., 530.

130. Ibid., 531.

working population; on the other hand, in the tendency for the mass of surplus value attainable, in relation to the size of the capital employed, to fall. "Hence there is an immanent contradiction in the application of machinery to the production of surplus value, since, of the two factors of the surplus value created by a given amount of capital, one, the rate of surplus value, cannot be increased except by diminishing the other, the number of workers."[131] Finally, Marx underlines the dynamic impulses that emanate from machinery. While manufacture traditionally "strives to hold fast to that [appropriate] form [of the division of labour] when once it has been found"[132] and was consequently unable to seize hold of society in its full extent and transform it in depth,[133] large-scale industry based on machinery is forced by the fall in the rate of profit to continually revolutionize the technology of the labor process and therefore the structure of society.

## 5.

The second characteristic feature of the dominant theories since classical economics (the first was their one-sided view of the valorization process) is their static character. No one disputes the static character of the theory of the physiocrats, who discovered the "economic circuit" (the "*tableau économique*").[134] The theories of Smith and Ricardo are both similarly static. All of their categories are based on the concept of an equilibrium in which "natural price" (value) asserts itself as an ideal point in economic activity, around which market prices oscillate. As a result, there is no room for crises in Ricardo's mechanism. For him, they are merely accidents, introduced from the outside (wars, bad harvests, state intervention, and so on).[135] Left to itself, the economic circuit always moves in equilibrium and always follows the same path. The deceleration and cessation of capital accumulation in the distant future that Ricardo forecast must be described as mere pseudodynamics, because the "dynamic" factor is not inherent in the economic process itself but is rather a natural force that influences the economic process from the outside (falling rate of profit as a consequence of growing population and hence increased ground rents).

This is how it remained with Ricardo's students, too. In France, Say's theory of markets, that is, the theory that every supply is simultaneously a demand, that consequently any production, through the very fact of its supply, creates its own demand, leads to the conclusion that an equilibrium between supply and demand is possible at any time and on any scale of production. But this implies the possibility of the unlimited accumulation of capital and expansion of production, because there are no obstacles

131. Ibid.
132. Ibid., 485. [Editor's interpolation.]
133. Ibid., 489.
134. [Quesnay, *Quesnay's Tableau Économique*.]
135. Compare Weiller, *La conception classique*, 11, and John Maurice Clark, "The Relation between Statics and Dynamics," 51.



to the full employment of all factors of production.[136]

John Stuart Mill does make the first attempt to consider the dynamic character of the economy, by distinguishing between statics and dynamics. But this division of the scientific object into two, taken over from the mechanics of physics, proved disastrous for the further development of political economy. Mill's analysis has an entirely static character. After having first analyzed the economic mechanism in a static state (with constant population, production, capital, and, likewise, unchanged technology) and investigated its laws, he subsequently sought to add "a theory of motion to our theory of equilibrium—the dynamics of political economy to the statics."[137]

A certain number of corrections are introduced into the static picture: population growth, growth of capital, and so on, as if such subsequent retouching removes the statically conceived character of the economic system's essence; as if there were two capitalisms, a static one and a dynamic one. But if capitalism is dynamic, what is the point of investigating the laws of an imaginary static economy without, at the same time, demonstrating how the transition from statics to dynamics is to take place?[138]

As equilibrium theories, the dominant theories cannot, in principle, derive generalized crisis from the system, because for them prices are an automatic mechanism for the restoration of equilibrium, for overcoming disturbances. Any attempt to incorporate into their system one of the empirically confirmed moments of disturbance, that is, the tendency to break through equilibrium that is actually observed, necessarily suffers from a fundamental contradiction. Consistent application of the lines of thought employed in equilibrium theory can only demonstrate that such disruptions of equilibrium are only generated precisely "from outside," that is, by changes in economic data. From the standpoint of equilibrium theories, the economy can always only react in one direction following changes in these data, by adjusting: by tending to create a new equilibrium. It is not apparent how a crisis can arise in such a system.[139]

Alfred Marshall (1890), who tries to combine classical theory with marginal utility theory, has a decidedly static construct. He does investigate shifts in a developing society. These merely constitute, however, an external framework for his analysis. It is only a matter of the adjustment of the economy to changing, external data, such as population, capital, and so on, but not of economic developments that arise from the economy itself. Marshall's economy does not develop. At the center of his system lies the concept of a general equilibrium enforcing itself in all parts of the economic mechanism.[140] Once it is achieved, no further changes take place. This basic idea is then

136. ["Full employment" is in English in the original text.]
137. John Stuart Mill, *Principles of Political Economy*, 461.
138. "The main problem now is to proceed from static to dynamic economics." John Maurice Clark, "The Relation between Statics and Dynamics," 46.
139. Compare Grossmann, *Das Akkumulations- und Zusammenbruchsgesetz*, 284.
140. "The general theory of equilibrium of demand and supply is a fundamental idea running through the frames of all the various parts of the central problem of distribution and exchange." Marshall, *Principles of Economics*, ix.

applied to individual problems. Equilibrium is not a heuristic device in theory but a tendency asserting itself in reality.[141]

The whole system is governed by the idea of a general state of equilibrium (maximum satisfaction), toward which the economy, under free competition, tends. Marshall only arrived at this static picture thanks to his inadequate method, because, despite his "general theory of equilibrium," he does not provide any theory of the system as a whole that deals with all the submarkets and the production process at the same time that is one which grasps the overall interdependence of the system. What he offers, in reality, is a theory of partial equilibria in submarkets, which is always concerned with relations between already existing economic variables, with the determination of the price level (if supply and demand curves are given), or with the determination of the demand curve, if quantities and prices are known. So Henry Ludwell Moore, quite correctly, characterizes Marshall's approach as "static and limited to functions of one variable."[142]

John Bates Clark, in Schumpeter's view the most influential American theorist of the previous generation, did "take a significant step beyond Mill's standpoint, already mentioned, and carefully defined the static state. . . . He also energetically advanced the proposal for a specific theory of 'dynamics.'"[143] But this remained a "proposal." In resignation, Clark says of dynamics: "But the task of developing this branch of science is so large that the execution of it will occupy generations of workers."[144] What he really gives is a picture of a fictional, static economy: year after year the mass of workers employed and the number of capitals remain unchanged, along with the tools and technologies in production. In this society, there are no transfers of capital or labor from one branch of production to another, and consumer demand also remains constant. Under these assumptions he investigates the principle of distribution and demonstrates the way that prices, wages, and interest on capital are formed in a static situation. Commodities are sold at their "natural," that is, cost prices, so that entrepreneurs gain no profit.[145] Clark admits that "this picture is completely imaginary. A static society is an impossible one."[146]

141. "When demand and supply are in stable equilibrium, if any accident should move the scale of production from its equilibrium position, there will be instantly brought into play forces tending to bring it back to that position." Ibid., 404–5.

142. Marshall was conscious of the weaknesses of his construct, of its unrealistic character. "He recognized the impossibility of solving real problems by his method unless his hypothetical, static constructions could be replaced by concrete, dynamic functions," which he hoped would follow the improvement of mathematical "scientific machinery." Moore, *Synthetic Economics*, 93. Hicks also emphasizes the static character of Marshall's construct, stating "how reluctant he is to abandon static conceptions even in his dynamic analysis . . . his dynamics are not made easier by running in terms of a very static equilibrium and by the fact that their central passage leads up to the introduction of the 'famous fiction,' the stationary state." In addition, Marshall's distinction between "short" and "long periods," with the further assumption that "a 'full adaptation' of supply to demand" will occur in the latter, "is not a concept that fits very well into a general dynamic theory." Hicks, *Value and Capital*, 120–21.

143. Schumpeter, *Theorie der wirtschaftlichen Entwicklung*, 100. [The English translation of this work is a revised version of the German edition and does not include the text quoted by Grossman.]

144. John Bates Clark, *The Distribution of Wealth*, 442.

145. Ibid., 400 and vi–vii.

146. Ibid., 400 and 29.



"Actual society is always dynamic. . . . Industrial society is constantly assuming new forms and discharging new functions."[147] But no conclusions are drawn from this observation. Clark thinks that static forces, isolated in this way, do nevertheless possess real meaning: they also always operate as a fundamental component force in the dynamic world; they indicate real tendencies.[148] But there is more. Despite all the emphasis on the "hypothetical" character of the "static state" and despite all his references to the dynamic essence of reality, Clark almost totally abandoned dynamics in his later, principal work, *Essentials of Economic Theory*. His picture of the economy and society is static. The static model asserts itself in a competitive economy—although not in an ideally pure form. As long as there is free competition, "the most active societies conform most closely to their static model."[149] The situation is not much different in contemporary society (with imperfect competition).[150] Precisely the mobility of the prevailing economy's elements enables a static state to be attained more quickly than if these elements were less mobile. The "normal" (static) form asserts itself better in the highly industrialized society of [the United States of America] than in immobile Asian societies.[151] "The static shape itself, though it is never completely copied in the actual shape of society, is for scientific purposes a reality."[152] In short, "static influences that draw society forever toward its natural form are always fundamental and progress has no tendency to suppress them."[153] What the economy's "dynamic" character consists of, and how disturbances can arise, Clark has not said. He presents dynamic development, with its rapid changes in the economic organism, as a succession in time of different static states.[154]

This static character becomes even more pronounced in the pure theory of marginal utility. Dynamic changes in the structure can hardly be reconciled with such a construct, because it assumes that production is governed by consumers (demand), and that the economy can be reduced to subjective choices between various subjective uses. They are merely external data, which this theory assumes. But it does not investigate or explain their emergence. Schumpeter (1912) could therefore state that "the static character of its theoretical edifice was unaffected by the great reform of theory, through the subjective theory of value. . . . In fact, the static character of the theory gained substantially in rigor and clarity as a result of the new analysis."[155]

147. Ibid., vi and 30.

148. "The static state which has here been pictured is the one towards which society is at every instant tending." Ibid., 402.

149. John Bates Clark, *Essentials of Economic Theory*, 195.

150. "The actual form of a highly dynamic society hovers relatively near to its static model though it never conforms to it." Ibid.

151. Ibid., 195.

152. Ibid., 197.

153. Ibid., 198.

154. Ibid., 196. A more recent critic of Clark says, quite correctly, that as a result of all his abstract assumptions, the picture he sketched is totally alien to reality. "Such an isolation of static forces, it is admitted, gives to the study an unlifelike appearance and makes it 'heroically theoretical.'" Homan, *Contemporary Economic Thought*, 38.

155. Schumpeter, *Theorie der wirtschaftlichen Entwicklung*, 100.

As [Maurice] Roche-Agussol states, the main object of marginal utility theory's analyses is an "essentially static problem," namely, the valuation and distribution of goods "at a *given* level of needs and the means for satisfying needs."[156] With the introduction of movement through time, this theory has to fail, even from its own standpoint, because no statements about future needs and means for satisfying them can be made. Conscious of this fact, Menger declares that "the conception of theoretical economics . . . as a science of the . . . 'laws of development in economy,' and other such things, is a one-sided monstrosity. . . . It is a living proof of the aberrations," et cetera.[157] The theory of William Stanley Jevons, the other founder of the marginal utility school, is also decidedly static. He operates with concepts borrowed from the science of mechanics (such as "infinitely small quantities"), on which he erects his theory of exchange. "The laws of exchange resemble the laws governing the equilibrium of a lever, as they are both determined by the principle of virtual velocities."[158] Jevons does know that all economic phenomena are in motion and must, therefore, be dealt with in units of time. But in chapter 3 of his book, he manages to exclude the time factor from his analysis by recourse to a methodological trick. From the outset, he dispenses with the idea "of a complete solution to the problem in its entire natural complexity" (that would be "a problem of motion—a problem of dynamics") and confines his analysis to "the purely static problem" of establishing the conditions under which exchange ceases and equilibrium is achieved.[159]

The marginal utility school has consistently retained this character to the present; for reasons of space, we have to restrict ourselves to a few typical examples from various currents. Frank Hyneman Knight does emphasize that history does not stop and that "evolution to other forms of organization as the dominant type" is inherent in capitalism,[160] but thinks that "such a social development falls outside the scope of the economic theorist," because the notion of equilibrium is entirely applicable to such changes.[161] He refers the study of these changes to the science of history and comes to the conclusion that "economic dynamics, in the sense which this expression should have in order to be applicable [in economic theory], does not exist. What is specified as being dynamic in it should be named evolutionary or historical economic theory."[162] Ewald Schams's position is no different. According to him, economics is a theory of "economic variables," and understanding the relations among variables and dependent variables necessarily requires the construction of functional concepts and the specification of equations.[163] Since, however, the theory of functional relations, as is generally conceded today,[164] is necessarily static, because it merely investigates relations between given value variables, Schams arrives at the conclusion (despite his acknowledgment of the dynamic character of the capitalist economy) that we must work with static conceptual tools. This is because we do not possess a specifically dynamic conceptual form that could grasp dynamic changes. The theory of economic variables [mathematical economics], as a theory of relations, has no more possibility of development than geometry. Quite independently of whether "there is a stationary reality or simply an economy in full motion," "logically defined statics will always be an assumption."[165] Schams therefore directs his criticism against the twofold division of theory into statics and dynamics. "Every theory of economic variables is entirely static." Economic movement can only be understood as the succession and comparison of various static states of equilibrium, as "comparative statics," as "the comparison of the two states of dependent variables over a certain interval of time."[166] There can be no specifically dynamic problems that are not theories of variables within the theory of economic variables but at most theoretical problems that are no longer questions of the theory of variables, and are thus theories of the development of economic data. But these lie outside the scope of economic theory.[167]

The realization that several interdependent movements and nonequivalent relations cannot be grasped mathematically has apparently led one part of the dominant theory into an intensified struggle against attempts to "dynamize" the theory and to a renais-

156. Roche-Agussol, "Die Werttheorie," 36.

157. Menger, *Investigations into the Method*, 121. [This quotation is misleading. Menger's comments were not directed *against* subjective preference/marginal utility theory but rather *from* that position against the German historical school.]

158. Jevons, *Theory of Political Economy*, vii, 3.

159. Ibid., iv, 93–94.

160. Frank Hyneman Knight, "Statik und Dynamik," 25.

161. Ibid., 26.

162. Ibid., 7.

163. Schams, "Komparative Statik," 46–48.

164. Compare Mayer, "Der Erkenntniswert der funktionellen Preis-theorien."

165. Schams, "Komparative Statik," 49.

166. Ibid., 49–50.

167. Yet another of the grounds advanced by Schams for the passionate struggle being waged against attempts to "dynamize theory" and introduce the time factor directly into the analysis, despite acknowledgment of the dynamic nature of reality, is interesting. If economics is regarded as "a theory of economic variables," then the mathematical method will prove indispensable in the "exact" treatment of complex relations among variables, which cannot be mastered by means of "conventional logic." The most important methodological principle in the construction of systems of variables is the "equivalence of relations, that is, the construction of equations in which the relationships among the variables can be expressed." Schams, "Komparative Statik," 48. This method, however, is located right in the center of statics, as the functional method can only grasp relations between given values, quantities, and so on, but not their formation. If movement, that is, change through time, is now introduced, it is apparent that "the regularity of disproportional movement will destroy the equivalence of the relations," as Schams freely admits. "The simultaneity of more than two independent movements cannot be dealt with mathematically." Schams, "Komparative Statik," 49. "The use of differential and integral equations is scarcely possible with nonequivalent relations." Not beginning with given prices and quantities, however, and introducing change through time means confronting the task of dealing with future changes and, instead of establishing exact relations between given variables, "being content with the calculation of correlations and mathematical price expectations." Doing this, however, means turning away from "exact theory" and "entering the company of the dice-throwing probability theorists." Schams, "Komparative Statik," 55. The "mathematically exact" method, originally designated as indispensable on the grounds that it was supposed to be the best means for the exact investigation of reality, is here raised to the level of an end in itself. Reality is dynamic. As it is impossible to grasp dynamic movement by mathematical means, however, one is restricted to statics, in order to avoid having to dispense with the "exact" method of mathematics.

sance of static theories of equilibrium.[168] According to Conrad, an exchange economy without centralized management is a "self-regulating mechanism, which tends toward a steady state, that is, seeks to assume uniform movement." The essence of self-regulation is that the "mechanism is steered toward a stationary state"—"a tendency that never actually reaches its goal but which is alone to be thanked if an exchange economy, lacking centralized management, does not fall into chaos."[169] Conrad does know that there are crises and disturbances that cannot be regarded as movement toward a stationary state. The presupposition of the tendency toward equilibrium is therefore "that the regulative apparatus functions correctly" (sic!). If this were not the case, "then it is possible that the approach toward the stationary state will be constantly impeded."[170]

According to Conrad, movement should be understood as a succession of stationary states without making the intervening, nonstationary states intelligible.[171] Alexander Bilimovic concedes that previous theory merely succeeded in determining equilibrium equations for a stationary economy but not for a dynamic economy. This explains why "the schemas which have predominated until now do not express economic equilibrium in the real world." These schemas are, nevertheless, held to be capable of improvement, and Bilimovic hopes that it may also be possible to construct a mathematical model of a nonstationary economy, for previous attempts' lack of success in dynamizing the schemas of a stationary economy cannot be attributed to any fundamental defect in these schemas.[172]

Doesn't this twofold division of theory recall John Stuart Mill's similar proposition? And won't it remain as futile as Mill's, in view of the basic fact that no bridge can lead from statics to dynamics, even if this dynamics is thought of as a succession of static states? For these are various static states that follow one another. The static line of thought is unable to explain how successive new states arise, precisely for the reason "that the equilibrium of static analysis does not allow for growth, that this analysis can only describe an expanding system in terms of successive states of equilibrium, with the intervening stages of transition left, and left with danger to the validity of the argument, unanalyzed."[173]

These difficulties only really begin to accrue when statics are no longer regarded as a real tendency but as a heuristic device, because there is then even less of a bridge leading from this hypothetical state to reality, which moves in disequilibrium. "If the economic cycle's entire course is movement in disequilibrium—neither cumulative downward nor upward—what is the point of regarding particular states of equilibrium as the point of departure or a transition point in this movement? If equilibrium is nowhere departed from, tended toward, or passed through, why behave 'as if' this was the case?"[174] Proceeding from the assumption of static equilibrium, the entire problem of dynamics is reduced to the question of which factors "disturb" this supposed state. Thus, for [Gottfried] Haberler, there is an inherent tendency toward equilibrium in the economic system. Consequently, for him, only the downturn in the course of the economic cycle, the "long swing" "in the negative direction" but not the upswing, requires explanation, "since the upward movement, the approach to full employment, might be explained as a natural consequence of the inherent tendency of the economic system towards equilibrium."[175]

More recently still, criticisms of the concept of "the stationary state"[176] as a superfluous, because economically unreal, presupposition have multiplied in another area of the dominant theory. As Hicks says, this group is forced to concede "that the actual state of any real economy is never in fact stationary; nevertheless, stationary-state theorists naturally regarded reality as 'tending' towards stationariness; though the existence of such a tendency is more than questionable." "The stationary theory itself gives no indication that reality does tend to move in any such direction."[177] Still more, Hicks holds the concept of a stationary economy directly responsible for retarding the development of science, because it neglected problems of dynamics.[178]

We can deal with the mathematical tendency's lines of thought briefly, because our concern is not to offer an exhaustive critique of this school but rather to bring out its static character.[179] "No presentation is more static than that of Léon Walras."[180] As can be read on a memorial tablet in the Lausanne Academy, Walras was exalted as the theorist "who first established the general conditions of economic equilibrium." According to Walras, the economy can be compared with a lake, whose waves may well be temporarily whipped up by a storm, but which subsequently subside to form a new, mirror-flat equilibrium. Similarly, economic disturbances to general equilibrium spread out through the entire economic system. But Walras simply regards them as oscillations, whose amplitude falls over time until equilibrium is restored.[181] The question of whether, perhaps, such a static state cannot be realized at all is not posed. On the contrary, Walras is convinced of the possibility of the realization of an enduring equilibrium. "The more we know of the ideal conditions of equilibrium, the better we

168. On this, compare Conrad, "Die Grundannahme der Gleichgewichtstheorie," 243.
169. Ibid., 236 [citing Conrad, *Der Mechanismus der Verkehrswirtschaft*, 286].
170. Conrad, "Die Grundannahme der Gleichgewichtstheorie," 239.
171. [Ludwig] Lachmann (London) similarly understands "a dynamic theory of equilibrium" as one "which is concerned with changes in equilibrium through time and describes the complete process of transition from one equilibrium to the next." The difficulties with which the theory of dynamics wrestles are difficulties in neither its principles nor its content and are rather to be attributed to "the deficiencies of our analytical tools." Lachmann, "Preiserwartungen und intertemporales Gleichgewicht," 33–34.
172. Bilimovic, "Zur Verteidigung der Gleichgewichtsidee," 220–24.
173. Compare Harrod, "Studies in the Theory of Economic Expansion," 496.
174. Bode, "Prosperität und Depression," 599.
175. Haberler, *Prosperity and Depression*, 265. [Quotations in English in the original.]
176. [In English in the original.]
177. Hicks, *Value and Capital*, 119.
178. Ibid.
179. Hicks also includes Knut Wicksell in the Lausanne school, alongside Walras and Pareto, because he thinks just as statically as the other two. Wicksell's "capital theory is limited to considering the artificial abstraction of a stationary state." Ibid., 3.
180. Schumpeter, *Theorie der wirtschaftlichen Entwicklung*, 100.
181. Walras, *Elements of Pure Economics*, 380–81.

shall be able to control or prevent these crises."[182]

The same can be said of [Vilfredo] Pareto's work. Hicks calls Pareto's *Manual* "the most complete static theory of value which economic science has hitherto been able to produce."[183] Pareto distinguishes three areas of research: the theory of statics, the area of economic theory that is the most complete; the theory of successive equilibria, "we have only a very few notions about the theory of successive equilibria"; finally the theory of dynamics, which deals with the investigation of the movement of economic phenomena, "except for a special theory, that of economic crises, nothing is known about dynamic theory."[184] Pareto himself contributed nothing to the investigation of dynamics and, rather, impeded it by assuming that the above threefold division of research actually corresponded to reality.[185] His attention is only directed toward statics; his central, indeed only, problem is that of equilibrium,[186] to which he devotes chapters 3 to 6 of his book. He never indicates the bridge that leads from statics to dynamics.[187] Pareto underscores the significance of Walras's equations for economic equilibrium and attributes to them an analogous role to Lagrangian equations in mechanics, in that he conceptualized reality as a system of "continual oscillations around a central point of equilibrium" and thought that this center of equilibrium moved.[188] The question of whether the concept of economic movement is compatible with that of equilibrium is never raised and is almost completely excluded by the untenable assumption that all economic phenomena share a simultaneous, uniform rhythm.[189]

This static trait of Pareto's theory is understandable if it is considered that he deals exclusively with relations between already existing values on the market or, in Pareto's later formulation, with choices between indifference combinations that already exist. According to his conception, equilibrium is achieved if two people possessing a certain number of goods exchange them with each other on the market up to the point at which both parties agree that no further exchange is possible. The state of equilibrium attained can therefore be defined as "a state which would maintain itself indefinitely" if there is no change in its conditions or if this change is so slight that the system "tends

182. Ibid., 381.

183. Hicks, "A Reconsideration of Value," 52.

184. Pareto, *Manual of Political Economy*, 105.

185. "This division corresponds to reality." Ibid., 104. As if we had experienced two different objects, a static alongside a dynamic economy!

186. "The principal subject of our study is economic equilibrium." Ibid., 106.

187. Ibid., 103–290.

188. Consequently, Rosenstein-Rodan correctly says: "No doubt mathematical, like any static theory, only seeks to explain tendencies to equilibrium and understand the real course of the economy as deviations from the state of equilibrium." "In this it is supposed that, after numerous oscillations, a state of equilibrium, which continues to exist unchanged, will emerge." Rosenstein-Rodan, "Das Zeitmoment in der mathematischen Theorie," 136.

189. The assumption that economic phenomena share a simultaneous rhythm was explicitly emphasized in Pareto, *Manual of Political Economy*, 105. The same is true of a successor of Pareto, [Alfonso] de Pietri-Tonelli. [See, for example, Pietri-Tonelli, *Traité d'économie rationnelle*.]



to re-establish itself, to return to its original position."[190]

Pareto employs the concepts of statics and tendency to equilibrium, borrowed from mechanics, without investigating whether they make sense in economics. The essence of his method of the general interdependence of all economic variables, long regarded as a modern miracle, like the essence of any functional approach that abstains from genetic explanation, is their static character. It only shows the relations between already given economic variables (be they utilities or indifference combinations), but not the capacity of the system for movement, the evolution of these variables, and hence the direction in which the system is moving. To do this, it is necessary to look at the process of production as the source of all changes in "economic variables." But this is excluded from the analysis at the outset.[191] Although Hicks thinks that Pareto's exchange equations could be extended to production processes, given certain corrections, he makes the reservation that they would only be valid for a stationary economy in which no capital accumulation (Hicks says no net saving) and no other changes in given economic data take place. But this makes Pareto's equations, as Hicks concedes, "far from being a description of reality." "They are not a description of reality."[192]

As early as 1846, Marx wrote against Proudhon that "the relations of production of every society form a whole."[193] The same authors who emphasize the "general interdependence" of all economic variables and reject methods that seek to single out and explain only individual groups of phenomena from the process of economic life themselves break this totality down into sectors. They separate market phenomena from the sphere of the labor process and make this artificially separated sphere of exchange the main object of their analysis. Pareto could arrive at "equilibrium equations" by dealing with the functional connection between given market variables[194] and excluding the dynamic factor of the production process or, that is, by "completely dedynamizing the system."[195]

190. Pareto, *Manual of Political Economy*, 108, 109.

191. As Amoroso emphasizes, "a base della statica economica paretiana sono due concetti fondamentali: di richezza, di ofelimià. Non esistono differenze sostanziali fra produzione." ["Two concepts underlie Pareto's economic statics: wealth and ophelimity (economic satisfaction). No substantial distinctions exist in production."] Amoroso asks: What about the former division of economics into production, exchange, consumption, and distribution? And he answers the question, saying that according to Pareto, "non esiste nella realità una distinzione di cose corrispondente a questa distinzione di parole . . . ma tutti i problemi economici sono compressi nelle condizioni generali dell'equilibrio, limitamente alla sola condizione che restano invariate le forze e gli vincoli quali esistono nella posizione iniziale." ["There is no distinction in reality that corresponds to this linguistic distinction . . . rather, all the problems of economics are contained in the general conditions for equilibrium, amounting to the sole condition that forces and constraints do not change from their initial state."] Amoroso, "La meccanica economica," 46–47.

192. Hicks, "Equilibrium and the Trade Cycle," 525, 526.

193. [Marx, *The Poverty of Philosophy*, 166.]

194. "The circulation of commodities has of course only to do with already existing, given values." Marx, *Capital*, vol. 2, 297.

195. Mayer, "Der Erkenntniswert der funktionellen Preis-theorien," 239. Of course, Mayer is not consistent enough. As a marginalist he regards consumer demand as the "driving force of the entire system" (ibid.). Demand, however, as the most recent works of the Keynesian school admit, is not a driving factor

At the same time, the above example shows how the accuracy of the mathematical process is invoked in the construction of the system of equilibrium equations. This accuracy is not related to the content of economic knowledge but rather to the technique of mathematical calculation. Despite the accuracy of these operations, mathematical treatment can be a source of the greatest errors, precisely because of the postulates that underlie the equations and determine the value of the knowledge they yield.[196]

In its youthful enthusiasm, the mathematical school (Walras, Marshall, [Ysidro] Edgeworth, Pareto in his *Cours*, but also Böhm-Bawerk)[197] believed it could measure everything and constructed an edifice of equilibrium equations, whose basis was the assumption that utility is, in principle, a measurable variable, or would be a measurable variable if we had knowledge of enough facts at our disposal. After one generation, a more sober assessment was made. The objection initially raised by a few was generally acknowledged: utility, as an intensely psychological variable, cannot be measured and subjected to mathematical operations.[198] But if marginal utility is not measurable, then nor is aggregate social utility, and hence all the equilibrium equations constructed on this unreal basis are invalid.

The critique of the marginal utility theory, which was initially made only by opponents of the mathematical school, is now pursued by its supporters and has led to the dissolution of marginal utility theory.[199] The breakdown of marginal utility theory did not, however, lead to the abandonment of equilibrium equations but rather to efforts to construct them on another basis. In his *Manual* Pareto took refuge in the concept of "ordinal" indifference curves, in order to use this as the basis, supposedly taken from experience, on which to construct his theory of preference and its equilibrium equations.[200] Criticism proved the untenability of this theory by highlighting the arbitrary nature of the assumptions behind the equations. The mathematicians' procedure presupposes the infinite divisibility of goods and the unlimited substitutability of various goods (for example, of nuts for apples) in the satisfaction of wants. Hence a gulf arose between the

but is instead only a result, a variable that depends on the extent of investment. Investments themselves are conditioned by the profitability that can be achieved in the process of production.

196. Ibid., 205.

197. [Pareto, *Cours d'économie politique*.]

198. "Utility is, and will remain, only a comparable but not a measurable magnitude. . . . Attempts to treat utility like an ordinary extensive magnitude, in our opinion . . . are bound to fail. . . . One cannot subject utility to the ordinary arithmetic and algebraic operations." Compare Fisher, *Mathematical Investigations*, 88. [Bernadelli, "The End of the Marginal Utility Theory?" 192. Bernadelli emphasized "comparable" and "measurable." Grossman provided no reference for this quotation from Bernadelli. As the source of the quotation, Bernadelli cites Bilimovic, "Irving Fishers statistische Methode." It is not there but is in Bilimovic, "Ein neuer Versuch der Bemessung," 178. The page in Fisher's work that Grossman refers to does not seem directly relevant, although the entire monograph is devoted to the subjection of utility to algebraic operations.]

199. "It is a curious process of a self-decomposition of a theory—a supreme example of Hegelian dialectics . . . —which not so long ago had been hailed as the essential step in putting economics on a scientific basis." Bernadelli, "The End of the Marginal Utility Theory?" 192.

200. For example, someone who possesses 100 apples and 100 nuts can be asked how many nuts would compensate for giving up 10 or 20 apples. A combination of 80 apples and 140 nuts, for example, could result.



assumptions on which the indifference curves were based and reality.[201] Elevated to the status of a general rule, the assumption of the unlimited substitutability of goods "leads to the most absurd conclusions." For example, in the everyday consumption combination of bread and wine, a very little or even a minimum amount of bread can be "replaced" by a lot of wine, or increasingly small amounts of meat by more and more salt![202] These absurd results and the indifference curves, demand curves, price relations, and equilibrium positions derived from them are not an approximate reflection but "in truth a distorted picture of reality."[203]

Considering that even in the circumstances of a solitary individual with few commodities at his disposal there are an infinite number of possible indifference combinations, it is apparent that with forty million people and several thousand different types of commodities, "the time and energy of a whole generation would not suffice" to collect the incalculable amount of information needed to construct the hundreds of millions of indifference combinations. And the time and energy of a further generation would not suffice to solve the equations that were constructed on this basis.[204]

The static character of the monetary theories of crisis, which spread during the postwar period—Wicksellian and neo-Wicksellian efforts to overcome economic cycles and stabilize the economy, the value of money, and world prices in a purely monetary way, by means of the appropriate regulation of interest rates by central banks—is also apparent.[205] According to Wicksell, "in principle" the real causes of crisis do lie on the commodity side. But this plays no role in his thinking because, according to him, the connection between the economy and credit has shifted the economic system's center of gravity toward the monetary side. With an appropriate regulation of interest rates "the real element of the crisis" would fall away and be reduced to "an even fluc-

201. Mayer, "Der Erkenntniswert der funktionellen Preis-theorien," 214.

202. Ibid., 211–12.

203. Ibid., 212; compare 216. Compare also Ricci, "Pareto e l'economia pura," 43, Schultz, "The Italian School of Mathematical Economics," 77, and Mayer, "Der Erkenntniswert der funktionellen Preis-theorien," 207–8. Mayer stresses that the indifference combination only takes the form of a curve with two goods; with a combination of three goods, the diagram becomes three-dimensional; under real conditions, that is, with thousands of goods, indifference diagrams would be "inconceivable," thought of in a space of thousands of dimensions (!)—["diversities in hyperspace"—that would be purely imaginary and have nothing more to do with reality.

204. In addition, the Lausanne School's method—the method of the general interdependence of all economic variables—so admired in its time, is today held responsible for the school never going beyond worthless generalities. It led to the school's "theoretically idle state." Lange, "Die allgemeine Interdependenz," 56. Hicks underlines the "apparent sterility of the Walrasian system," because of its great distance from reality, in *Value and Capital*, 60. As Husserl correctly says, the danger of such failures is inherent in the essence of mathematics itself. It is a technique that can be and often is applied to the most various and also irrelevant areas. "The same thinkers who sustain marvellous mathematical methods with such incomparable mastery, and who add new methods to them, often show themselves incapable of accounting satisfactorily . . . for the limits of their right use." Husserl, *Logical Investigations*, 16. Hence, in the field of economic theory, the dazzling application of mathematical methods and their miserable results.

205. Wicksell, *Lectures on Political Economy*, 216, 223.

tuation."[206] This holds not merely for individual countries but primarily for the world economy. "It would then simply be the task of the [central] credit institutions to regulate their interest . . . rates against and with each other . . . so that the international balance of payments remains in equilibrium and the general level of world prices is unchanged."[207] And it is precisely this static conception of the economy that is identified by [Friedrich] Hayek as "the most important basis for all future monetary theory of the trade cycle."[208] In fact, this conception underlies all monetary theories of crisis (Irving Fisher and Ralph George Hawtrey).[209] For the latter, economic fluctuations are not of necessity bound up with the essence of the capitalist mechanism but instead "arise out of a world-wide contraction of credit."[210]

The crisis cycle is consequently "a purely monetary phenomenon," and changes in economic activity, "the alternation of prosperity and depression," have as their sole cause "changes in 'the flow of money.'" "If the flow of money could be stabilised, the fluctuations in economic activity would disappear," and prosperity could continue indefinitely without limit.[211]

Doubts within the dominant theory about the correctness of the static conception first arose under the pressure of the great crisis of 1900–1901 and then the economic disturbances of the postwar period. More attention was paid to the problem of crises and to collecting empirical material on the course of past crises. Using this material, economic research institutes founded to investigate these problems attempted to establish the laws of the economic cycle's course and its phases. Only now was attention paid to the material elements of the production process, in addition to the value side, and the distinction between the production of means of production and the production of means of consumption was introduced into the analysis, emphasizing their different roles in the course of the economic cycle. The specific role of so-called durable ("fixed") capital[212] was emphasized as a cause of crisis, for example by [Arthur] Spiethoff and [Gustav] Cassel.[213] The role of progressive technological improvements, the disproportion between the structure of the various branches of production,[214] and

206. Ibid., 212.

207. [Grossman does not reference this quotation, which is neither in Wicksell's *Lectures on Political Economy* nor in Hayek's *Monetary Theory and the Trade Cycle*.]

208. Hayek, *Monetary Theory and the Trade Cycle*, 116. Wicksell's neo-Malthusianism is also rooted in an undynamic conception of the productive forces, according to which a country can only support a particular optimum population, exceeding which must lead to the country's impoverishment. This conception represents an unambiguous relapse to the level of the outlook of the first half of the eighteenth century. Compare Süßmilch, *Die Göttliche Ordnung*, 142.

209. Compare Fisher, *Stabilizing the Dollar*.

210. Hawtrey, *Currency and Credit*, 141.

211. Compare Haberler, *Prosperity and Depression*, 15, 17, and Hawtrey, *Trade and Credit*, 98.

212. Haberler, *Prosperity and Depression*, 73.

213. [See Spiethoff, "Business Cycles," and Cassel, *Theory of Social Economy*.]

214. Haberler, *Prosperity and Depression*, 39 and 73. Haberler correctly says of nonmonetary theories of over-investment, whose representatives he names as Arthur Spiethoff and Gustav Cassel: "In the writings of these two authors . . . we find the culmination of a very important line of thought which can be traced back to Marx." *Prosperity and Depression*, 72. On the now-usual distinction between the production of means of production and the production of means of consumption, see Marx, "The Two Departments of Social Production," *Capital*, vol. 2, 471–74; on the specific role of durable (fixed) capital, "Replacement of the Fixed Capital," *Capital*, vol. 2, 524–45; on the influence of the length of the construction period on the course of the cycle, *Capital*, vol. 2, 387, 445, 552–53. [These pages do not seem relevant as compared with 306–68. Marx does not refer to "construction period" but distinguishes between "working period" and "production period."] This distinction among material elements was first introduced into the recent literature by Tugan-Baranovsky's book on crises in England (Tugan-Baranovsky, *Studien zur Theorie und Geschichte*) and subsequently by Spiethoff and others. They were influenced by Marx, as can immediately be seen from Tugan-Baranovsky's schemes of reproduction, which were copied from Marx. Tugan-Baranovsky, however, was celebrated by Sombart as the "father of modern crisis theory" in "Die Störungen im deutschen Wirtschaftsleben," 130, and his book was praised by Spiethoff as the "first scientific monograph on crises" in "Die Krisentheorien von M. Tugan-Baranowsky," 700.

215. [See Aftalion, *Les crises périodiques de surproduction* and "Les crises économiques et financières."]

216. John Maurice Clark, "Business Acceleration."

217. Kuznets, "Relations between Capital Goods." [Grossman mistakenly attributed this essay to Roy Forbes Harrod, in both the main text and a footnote.]

218. Ayres, *Turning Points in Business Cycles*. [Grossman reviewed this book for *Zeitschrift für Sozialforschung* in 1939.]

219. Thus Paul Thomas Homan writes, in an essay entitled "The Present Impasse": "It is probably no exaggeration to say that recent investigations into the causes of cycles have done as much to destroy adherence to older types of theory as any other single cause. And it has led to the casting of their problems by many economists into terms of a changing process, rather than into terms of a static situation." *Contemporary Economic Thought*, 453.



the influence of the length of the period of construction on the course of the cycle ([Albert] Aftalion) were emphasized.[215]

These attempts turned out to be unsatisfactory, as each of the authors simply made one individual, isolated material moment of the entire process the basis of his crisis theory, which gave these theories an accidental, eclectic character, resting on partial observations. The same can be said of the most recent attempts, by John Maurice Clark,[216] Simon Kuznets,[217] and Leonard Ayres,[218] to use the durability of the means of production as a possible basis for explaining periodicity itself and the more intense fluctuations in the industries producing "capital goods" (the so-called accelerator principle). An attempt is made to explain the special problem of crises by means of individual observable correlations. This means abandoning any connection with the theoretical foundations of political economy, because of the feeling that the old static theories are of little use in explaining a dynamic process. Since, on the other hand, no conclusive dynamic theory in which these material elements have been treated theoretically has been constructed, these more recent investigations of crisis have remained special theories of a subfield in economics, lacking a broader theoretical foundation.[219]

Only a very small circle within the dominant theory itself has perceived the lack of a general theory of dynamics. As Hans Mayer stated, "the unsatisfactoriness and deficiency of previous theories" was felt "more and more intensely," as was their fundamental error: that the apparatus of their system "could not assimilate and deal with certain problems thrown up by the actual course of economic events." "The evidently dynamic problem of the economic cycle and crises" cannot be grasped by the "previous, essentially static

systems of price theory," as a consequence of its "purely static approach" to relations of exchange between given economic variables, which merely describes "existing price relations in a state of equilibrium that has already been reached." For the "analysis of the processes of movement in economic reality" requires "insight into the process of price formation."[220] As shown above, all these systems abstained from grasping the economic system's overall trend in a definite direction, that is, its developmental tendencies, and were also incapable of doing this, because they confined themselves solely to grasping exchange relations between given variables. But from the exchange equations it is apparent that all the quantities of goods or prices that an economic subject disposes of are received as increments by others. Hence all these (positive or negative) increments in the number of goods or prices result in a total sum of zero. There is no incalculable [sic] remainder that could be regarded as an index of a definite trend in the course of the system as a whole.[221] The relations of exchange of the "economic variables" on markets are, likewise, not real processes of movement, a sequence over time. They are transfers, a timeless "movement," a circular motion. If, however, the economic system's overall trend in a definite direction is to be grasped, not only the relations of exchange of given variables must be investigated but also their evolution, growth or passing away or (as Mayer says) the process of "price formation." It is insufficient to investigate exchange relations; the production process as well as the process of circulation, that is, the process as a whole, must also be investigated. It is then apparent that positive and negative changes no longer balance out in the full account to yield zero but that they assume definite values (for example, a falling rate of profit). That is, they reveal the direction of movement of the system as a whole, its developmental tendency. So the main task of theory for Marx in *Capital*, the investigation of "economic laws of motion," which was banished from the realm of economic theory by the marginal utility school, finally steps into the foreground of the dominant theory too. Now, for the first time, a small group of theoreticians within the dominant theory—[Rudolf] Streller, [Luigi] Amoroso, [Paul] Rosenstein-Rodan, [Umberto] Ricci, [Oskar] Morgenstern, [Karl] Bode, and others—turns, in principle, against the central line of thought of equilibrium theories, with their fictitious assumption of the simultaneous rhythm of economic events. The group's criticism is meant to prepare the ground for a dynamic theory. It maintains that "with the realistic assumption of diverse rhythms . . . of [economic] movements, it would . . . be a matter of coincidence if equilibrium came about."[222] For the tendency toward equilibrium is *one* possibility; the alternative is that due to nonsimultaneous rhythms of movements, one change "always brings about other changes, a *perpetuum mobile* of changes, the time coefficients do not equalize and no state of equilibrium emerges at all."[223] Theories of equilibrium would have to prove that this second constellation of

220. Mayer, "Der Erkenntniswert der funktionellen Preis-theorien," 148.
221. Compare Schams, "Komparative Statik," 30.
222. Rosenstein-Rodan, "Das Zeitmoment in der mathematischen Theorie," 131, 134. [Grossman did not signal the ellipsis or interpolation and indicated that the quotation started with "it." Rosenstein-Rodan emphasized "diverse."]
223. [Ibid., 131. *Perpetuum mobile* means "perpetual motion."]



time coefficients cannot occur. They have not provided such a proof, and because of the assumption of the simultaneous rhythm of all economic processes, they have blocked the path to understanding the problem of dynamics.

The "equilibrium system" of the mathematical school only exists thanks to the circumstance that it is "economics without time": "The equilibrium system of the mathematical school, which includes neither time indices nor coefficients, can therefore in no way grasp the real state of equilibrium."[224] And the critique of the mathematical school does not single out one particular aspect of the theory or a particular theorem but rather the theory itself, "because it offers the most precise formulation of a line of thought common to all economic schools, so that its proven defect affects all other formulations even more acutely."[225]

The fundamental error of equilibrium theories is not, therefore, only that "they have regarded moving, changing variables as fixed, as invariant." For if these movements were of the same duration, if they were equitemporal, the real course of the economic process could indeed be grasped as a series of "successive equilibria," each of which could be defined by the equilibrium system.[226] The moment the theory proceeds to grasp nonequitemporal movements, that is, to explicitly express the time factor $t$, however, as Shams states, "the static system is struck at its weakest point: the assumption of the pseudoconstancy of economic periods."[227] For the incorporation of the time element, that is, divergent periods of movement, shatters the equivalence of the relations that constitute the basis of the mathematical system of the equations and therefore cannot be managed mathematically.[228] So talk about the failure of economic theory is understandable, because it progressively lost all relation to reality. A theory that regards capitalism as a mechanism tending, through self-regulation, toward equilibrium is incapable of comprehending the economic developments of the last few decades, namely, the attempts to establish such an equilibrium through conscious interventions of monopolistic regulation that characterized this period.

So the dominant theory faces a dilemma. Mathematical economics could celebrate its triumph as long as it was dominated by ideas of equilibrium. These, however, failed to explain the economy's dynamic movements. They regarded these movements as

224. Ibid., 129.
225. Ibid., 135.
226. Consequently the concept of "moving equilibrium" is a contradiction, as the real movements of the elements of the economy are in constant disequilibrium. Nevertheless Moore did try, in "Moving Equilibria," chapter 5 of his book, to prove that exchange, production, distribution, and accumulation move in lockstep, "as a moving general equilibrium," using empirical material from American potato production over a long period. Moore, *Synthetic Economics*, 93–145. He did not, however, succeed. As Umberto Ricci showed in his critique, Moore did not describe a moving equilibrium, but rather a moving disequilibrium. Ricci, "Die 'synthetische Ökonomie' von Henry Ludwell Moore," 654.
227. Schams, "Komparative Statik," 42.
228. Ibid., 55, or, as Streller formulated this idea: the equilibrium equations would only have been possible at a level of higher abstraction from reality. It is apparent, however, that "an introduction of the time factor 't' into the equation immediately and clearly makes them insoluble." Streller, *Die Dynamik der theoretischen Nationalökonomie*, 12.

mere oscillations around a state of equilibrium or as temporary disturbances prior to the achievement of a new equilibrium,[229] while reality demonstrates long-term disequilibrating movements, exhibiting increasing disequilibrium instead of a tendency toward equilibrium. The reason why all tendencies within the dominant theory emphasized the static character of the economy, its capacity to adjust to the changing needs of society, for over a century—from Ricardo to the present—has clearly been the need to justify the existing economic order as a reasonable, self-regulating mechanism. The concept of self-regulation serves to divert attention away from the actually prevailing chaos of the destruction of capital, the bankruptcy of entrepreneurs and factories, mass unemployment, insufficient capital investment, currency disturbances, and arbitrary redistributions of property.[230] Only in this way is the introduction into economic theory of concepts of statics and dynamics, which originated in theoretical physics, without any justification of such a twofold division of theory, understandable.[231]

The untenability of such a division becomes clear when the fact that there are no immobile economic processes is considered; that the so-called "stationary" economy "moves," is, namely, a circular process. Hence the characteristic distinction between statics and dynamics cannot be that one investigates immobile, the other mobile changing phenomena. Instead, we characterize as static a kinetic economic process that has reached complete equilibrium in its movements and, because all subjective and objective conditions persist, repeats itself forever in unchanging form, from one period to the next (a cyclical process).[232] Consequently, a dynamic economy is not to be understood just as an economy "in motion" (a static economy also moves) but rather as an economic process that has not reached equilibrium in its movement and thus moves in disequilibrium over the course of time. This can only mean, however, that the conditions of this economic process change from period to period, hence the result of the economic process—the economic structure—also experiences continual changes.

Since John Stuart Mill, theory has been forced into this twofold division, but only statics, the tendency toward equilibrium, has been worked on. There has been discussion of dynamics and the necessity of "dynamizing" theory, without anyone being able to construct a complete theory of dynamics. Success in breaking away from the dictatorship of these traditional concepts has come late and very slowly. Finally, as Bode states, it has been recognized that there is no point in clinging to the concept of an equilibrium state if, in reality, "equilibrium is nowhere departed from, tended towards or passed through."

Understanding that the equilibrium line of thought is untenable has not, however, made the position of the dominant theory any easier. On one hand, it states that a dynamic theory is needed to explain reality; on the other hand, however, it is forced to admit that the construction of such a theory generates fundamental difficulties.[233]

229. Thus [Thomas Nixon] Carver also recently wrote: "In fact every dynamic movement is either a disturbance of a static condition, or a series of movements by which the static condition is reasserting itself, or rather by which a new static condition is being established after the disturbance." Carver, "The Static State," 29.

230. Ricardo stresses that despite changing economic conditions, the mechanism of self-regulation will distribute capital among individual branches of industry exactly according to their respective needs, "without often producing either the effects of a glut from a too abundant supply, or an enormously high price from the supply being unequal to the demand." Ricardo, *Principles of Political Economy*, 49. Conrad similarly assures us that only the tendency to equilibrium is "to be thanked if" an economy, "lacking centralized management, does not fall into chaos." Conrad, "Die Grundannahme der Gleichgewichtstheorie," 236. Hayek's language is characteristic: he sees merely the economy's "adjustments" but regards the intervals of disturbances and catastrophes between two "adjustments" as "unproblematic." Hayek, *Preise und Produktion*, 23.

231. So the concept of "dynamics" is only vaguely indicated. Within the static line of thought, only statics had to be defined. Dynamics was then the other, the "counterpart" that does not have to be defined and that is somehow supposed to "complement" statics. Streller, *Die Dynamik der theoretischen Nationalökonomie*, 5.

232. Bilimovic, "Zins and Unternehmerginn," 298.



## 6.

The discovery, only made by the most advanced, minority wing of the currently dominant theory—and then only after the violent disturbances of the [First] World War—namely, that a dynamic reality cannot be explained by arguments based on ideas of equilibrium, had already been enunciated by Marx in 1867 in the theory of the dual character of labor. This theory was completed in the second volume of *Capital*, in the theory of the various circuits of capital and also of the turnover time of capital. Marx was obliged to set foot here, too, on terrain that had never been entered before. First, he had to create all the categories and concepts that were connected with the time element (circuit, turnover, turnover time, turnover cycles). He correctly raises the objection that classical theory has neglected the investigation of the time element, the form of the circuits and of turnover.[234] Such a disregard was understandable given their merely value-oriented approach. In contrast, Marx's conception of the dual character of all economic phenomena compelled him to look at the economy in its specific movement, not statically. For capital advanced in the form of money can only maintain and multiply itself by changing its natural form in the circuit, transforming itself from the money form into the shape of the elements of production and from these again into the shape of finished products, commodities. Capital must spend a given minimum period of time, objectively determined by the technologies of the processes of production and circulation, in each of these three stages before passing on to the next phase. Capital "is a movement, a circulatory process through different stages. . . . Hence it can only be grasped as a movement, and not as

233. "Only static theory can be regarded as being established; dynamic theory is almost totally uninvestigated and unformulated. To this point, apparently, only the necessity for such a theory could be demonstrated." Streller, *Die Dynamik der theoretischen Nationalökonomie*, 26. John Maurice Clark assures us that "We possess a substantially complete static economics, while dynamics is in its infancy . . . and very possibly is destined always to remain in that stage." Clark, "Relation between Statics and Dynamics," 46, 48. Similarly, Hicks mentions "a dynamic theory—the theory which many writers had demanded, but which none, at that time, had produced." Hicks, *Value and Capital*, 4. Compare Harrod, "Studies in the Theory of Economic Expansion," 498; and many others.

234. Compare Marx, *Capital*, vol. 2, 234.

a static thing."[235] The "production time" presented in the first volume of *Capital* is now supplemented in the second volume by an analysis of "circulation time."[236] This not only has consequences for the specific problem of the size of profit but also gives Marx the opportunity to deal with the naked form of motion as such—the question of the duration of the circuits, whether they coincide or are sequential, that is, the conditions for the undisturbed transition from one stage to the next.[237] The circuit of capital proceeds normally only so long as its various phases pass into each other without delay.[238] Marx demonstrates the theoretically postulated conditions for such a normal circuit, which in reality are only present by way of exception: the undisturbed course requires the coexistence of capital in all of its three natural forms. The normal "succession" of each part is conditioned by the "coexistence" of capital, that is, by its constant availability in all three forms—as money capital, productive capital and commodity capital—and by its proportional division into each of these forms.[239] This simple formulation conceals the problem of dynamics. The coexistence of the three forms of capital is identical with their synchronization and thus presupposes given values that are unchanged, because they all fall into the same unit of time. It is precisely only in this case that the "unity of the three circuits" can really be spoken of.[240] In contrast, succession is a process in time and consequently includes the possibility of revolutions in the value of the individual parts of capital, which must impede the smooth transition of capital from one phase to another.[241] Thus, according to Marx, equilibrium would only be possible under the unrealistic assumption that values and technology are constant.[242] Since in reality this condition cannot be realized, the circuit of capital must move "abnormally," that is, in disequilibrium.

The entire presentation is crowned by the analysis of the "turnover of capital," where the circuit of capital through all three stages is understood "not as an isolated act but as a periodic process." The duration of this turnover, given by the sum of production time and circulation time, is called "turnover time" and measures "the periodicity in the capital's life-process, or, if you like, the time required for the renewal and repetition of the valo-

235. Ibid., 185.
236. Ibid., 200.
237. Ibid., 185.
238. Ibid., 133; compare 183.
239. Ibid., 183.
240. Ibid., 184.
241. "Further: since the circulation process of capital is not completed in one day but extends over a fairly long period until the capital returns to its original form, since . . . great upheavals and changes take place in the market in the course of this period, since great changes take place in the productivity of labor and therefore also in the real value of commodities, it is quite clear that between the starting point, the prerequisite capital, and the time of its return at the end of one of these periods, great catastrophes must occur and elements of crisis must have gathered and developed." Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 126. [Marx emphasized "market" and "value."]
242. "In order for the circuit to run its normal course . . . C-M-C [must] not just include the replacement of one commodity by another, but its replacement in the same value relations." "Thus it is . . . assumed that the commodities . . . do not suffer any change of value during the circuit; if this is not the case, then the process cannot run its normal course." Marx, *Capital*, vol. 2, 153. [Editor's interpolation.]



risation and production process of the same capital value."[243] Finally, following the presentation of the turnover of individual capitals, Marx arrives at the presentation of "The Overall Turnover of Capital Advanced: Turnover Cycles," in order, within this train of thought, to emphasize those elements that operate in the direction of disequilibrium.[244]

In his reproduction schemas, Marx proceeds on the assumption of an identical turnover time of one year for all capitals in all branches of production. While for the dominant theory the synchronization of all movements is a definitive approach, for Marx it is merely a preliminary, simplifying assumption, a first step in the process of successive approximation of reality. He later considers the circumstance that, in reality, "the turnover times of the capitals vary according to their various spheres of investment." This variation in turnover time depends on the natural and technical conditions of production of each kind of commodity (food crops, leather, and so on).[245] In addition to these circumstances, resulting from the process of production and "which distinguish the turnover of different capitals invested in different branches of industry," there are others given by conditions in the sphere of circulation (for example, improved means of transport and communication, which reduce the period during which commodities are moved about).[246] It is self-evident that all these differences in total turnover times must necessarily result in disequilibrium of the system, considering that the original equilibrium in the equations for the reproduction schemas only resulted from the assumption of an equal turnover time for all capitals.

In addition to these sources of disequilibrium due to variations in the total turnover time of the capitals in the various branches of production, there are further differentiating factors within each branch of production, because the turnover times of the fixed and circulating parts of capital are different. With regard to circulating capital, Marx investigates the temporal relation between working period and turnover period, since the size of the circulating capital which functions during both of these periods is conditioned by their durations. Of the three possible cases—that the working period is the same as, longer than, or shorter than the period of circulation[247]—only the first, "in which the working period and the circulation time form two equal halves of the turnover period," allows the undisturbed transition of the capital functioning in the working period into the circulation phase.[248] The same applies in the case in which both periods are indeed unequal but the turnover period "is . . . an exact multiple" of the working period, for example, if the working period is three weeks and the circulation period six, nine, or twelve weeks, and so on.[249] The turnover process only proceeds

243. Marx, *Capital*, vol. 2, 235–36.
244. Ibid., 262–67.
245. Ibid., 236. Compare the analysis of various turnover times for agriculture, p. 317; forestry, p. 321; and cattle raising, p. 322.
246. Ibid., 327.
247. Ibid., 343–55.
248. Ibid., 339.
249. Ibid., 353, 356–57.

"normally," undisturbed, under this "exceptional . . . assumption," which in reality only occurs by chance.[250]

In all the other cases, that is, for the majority of social circulating capital, the necessary modification of the "normal course" occurs during the annual or multiyear turnover cycle. As a result, the circulating capital advanced is "set free" or "tied up."[251] This generates the objective basis as well as the subjective impulses for credit expansion or contraction and also the impulses to expand or contract the given scale of production itself, instead of the originally assumed "normal" transition, on an unchanged scale, from the working period to the circulation period. These impulses do not come from outside but arise endogenously, "simply by the mechanism of the turnover movement," that is, from the temporal difference between the working period and the circulation period.[252] Far from being a primary cause of changes in the scale of production (as monetary theorists of crisis assume), credit expansion and contraction is a dependent variable, conditioned by the turnover mechanism.[253]

And similarly, the time factor (the durability of the means of production) constitutes the basis for the distinction between fixed and circulating capital. The means of labor employed in the production process "only form fixed capital to the extent that the time during which they are in use extends longer than the turnover period of the fluid capital,"[254] that is, to the extent that the "turnover of the fixed component of capital, and thus also the turnover time needed by it, encompasses several turnovers of the fluid components of capital."[255]

This difference in the length of the life of both types of capital results in the variation in the replacement of both kinds of the means of labor, to the extent that we do not consider the value side (as replacement of money) alone but, at the same time, replacement in kind. While labor power and those means of production that represent fluid capital (raw materials) are used up in a shorter period of time and must therefore be continuously renewed, the replacement of fixed capital in kind does not occur continuously but rather periodically.[256] Marx uses this divergence in the time periods necessary for the replacement of both types of capital, in the form of money and in kind, as one of the elements ("the material basis") of his explanation for the periodicity of crises.[257]

250. [Ibid., 339.]
251. Ibid., 189.
252. Ibid., 357.
253. Curiously, a misjudgment of the importance of Marx's analysis for the understanding of the dynamic course of the capitalist economy can even be found in Engels, who held the view that Marx had ascribed "an undeserved significance to . . . a matter of little importance," namely, what Marx called the "setting free" of money capital, and that this is the "uncertain [result] of [his] tiresome calculation business." See Engels's note in Marx, *Capital*, vol. 2, 359. [Editor's interpolations.]
254. Ibid., 254.
255. Ibid., 247.
256. Ibid., 533 and following.
257. Ibid., 264.



So long as the process of reproduction and the problem of equilibrium are regarded exclusively from the value side, the problem under consideration here won't be encountered at all, because the distinction between the lifetimes of fixed and fluid capital applies to their natural form, not their value. If Marx's scheme for simple reproduction is regarded merely in terms of value and assumes an annual renewal of all the components of capital, the resultant synchronization of all the movements in the schema would obliterate the specific difference between fixed and circulating capital and hence the whole problem connected with their various replacement times.[258] For both fixed and also circulating capital are renewed annually as values in the schema. The problem first arises when the schema is considered in terms of use value: only now does the difference in the life of each type of capital become apparent and hence also the problem of the different dates of their replacement. (The originally assumed synchronization of replacement dates was only a preliminary approximation, which does not correspond to reality.) While raw materials have to be renewed annually, fixed capital (for example, the 2,000 units in department II of the schema, the consumer goods industry) "is not renewed for the whole of the period during which it functions," because it lasts for several years.[259] Consequently, there can be no sales from department I, which manufactures this fixed capital, to department II for several years. Since, however, the annual productive capacity of department I remains 2,000 units, overproduction must necessarily take place in department I. "There would be a crisis—a crisis of production—despite reproduction on a constant scale."[260] "Normal" production could then only occur in department I if (despite the assumption of simple reproduction in department I) department II was to be expanded over several years,[261] creating a new, additional market for department I each year (the accelerator principle).[262] This is, however, impossible. For the faster expansion of department II, on the basis of the given technology, presupposes an impossible increase in the working population. The second department in the schema would have to double in the second year and triple in the third; the working population employed there would have to grow by 100 percent in the second year of reproduction, 50 percent in the third, and 33 percent in the fourth!

In addition to the reasons for the absence of an equilibrium previously mentioned, there is a much more fundamental and general one, resulting from the structure of the capitalist mode of production, from the tensions that are grounded in the dual character of this mode of production.

258. In the schema of simple reproduction, "total value is 9,000, the fixed capital that continues to function in its natural form being excluded by our assumption." Ibid., 473.
259. Ibid., 570.
260. Ibid., 533.
261. "If things are to proceed normally, accumulation in department II must take place quicker than in department I." Ibid., 588.
262. As we see, Marx's accelerator principle is the direct opposite of that propounded in the literature of the dominant theory. See Ibid., 588.

Theories both before and after Marx confine the conditions for equilibrium to submarkets and merely in terms of value.[263] The relation between quantities and values is only analyzed from the perspective of the effect of variations in quantity on marginal values. Equilibrium can always be achieved under such assumptions.[264] In contrast, Marx shows that the issue is not equilibrium in submarkets (money market, labor market, commodity market for the means of production or consumption), just as little equilibrium in the "production process" or the "circulation process." Instead, because Marx regarded the capitalist process of production as a "circuit" in which capital passes through its various stages, he highlighted the idea that equilibrium has to be grasped as an equilibrium within the overall interaction of all these stages. From this perspective, he was the first to carefully define the state of equilibrium in the "process as a whole" and investigate the conditions under which it arises. At the same time, however, he showed that these conditions cannot be realized within the capitalist mode of production. For Marx this signifies, however, that the "normal course," the "state of equilibrium," does not mean an "average," "typical," or "most frequently occurring" process but instead only an imaginary, undisturbed course of reproduction (under fictitious conditions), which never comes about in reality and merely serves as a methodological tool of analysis. As a total social process, the problem of reproduction has to be dealt with in its dual character, that is, "the process of reproduction has to be considered from the standpoint of the replacement of the individual components of C' both in value and in material."[265] Consequently, equilibrium could only be realized if both sets of conditions, those on the value side and those on the use side, are simultaneously fulfilled.

Marx's specific crisis problematic and its solution arises from this comparison of the two series—"the *value* components of the social product . . . with its *material* components." In the circuit C . . . C', "the preconditions for social reproduction can be immediately recognised from the fact that it is necessary to demonstrate what becomes of each portion of the value of this overall product C'."[266] This means not only that, in terms of value, all the commodities produced must be sold on the market, without a remainder. It is also necessary to investigate what then happens to the material mass of things, the use values that have been purchased, to see whether they can in fact be completely employed in the production process (equilibrium in production), including individual consumption.[267] It is therefore a matter of the "transformation of one portion of the product's

263. "By its essence, statics only studies one single market." Streller, *Die Dynamik der theoretischen Nationalökonomie*, 39.

264. "Equilibrium must be considered as an equilibrium of prices." "There is always a solution of such a system admitting full employment of every factor of production," given only that the condition "that prices must be high enough to equalise supply and demand" is maintained. Cassel, "Keynes' 'General Theory'" 438, 444.

265. Marx, *Capital*, vol. 2, 469. [C' is the expanded value of commodities, after production, in the circuit of capital.]

266. Ibid., 469, 506. [C is the value of the commodities which go into the production process in the circuit of capital.]

267. Marx consequently speaks of the "social balance of production." *Capital*, vol. 3, 1020. As the immediate employment of all factors of production is assumed, stocks lying unused in warehouses are disregarded.



value back into capital, the entry of another part into . . . individual consumption . . . and this movement is not only a replacement of values, but a replacement of materials, and is therefore conditioned not just by the mutual relations of the value components of the social product but equally by their use values, their material shape."[268]

From the above, it is already apparent that the assertion often made in the literature that according to Marx use values lie "outside the consideration of political economy" is based on a misunderstanding. According to Marx, only "use value as such," that is, use value in the sense of subjective utility, lies outside political economy.[269] He counterposes to this use value as "material shape," which is not a subjective utility but an objective thing with a definite, economically important form, a natural form that is exchanged on the market or functions as a means of production in the labor process.[270] Consequently, Marx speaks of "use value or object of utility," of use value or "material shape," of "use value or its physical shape as a commodity," of the "sensuous objectivity of commodities as physical objects," and of the "mass of the means of production" as distinct from their values.[271] Use values, defined in this way, take on crucial importance in Marx's system.[272]

Under the influence of dominant theories, Marxist literature has regarded the problem of equilibrium—insofar as its conditions are specified in Marx's "*tableau économique*"—exclusively from the value side ([Karl] Kautsky, Rudolf Hilferding, Otto Bauer, Rosa Luxemburg, and [Nikolai] Bukharin).[273] There have to be certain quantitative value proportions in both of the departments in Marx's reproduction schemas if all the quantities of value supplied and demanded are to be exchanged without a remainder. The analysis of the material side of the labor process was reduced to the single proposition that in the process of reproduction, department I must produce means of production and department II means of consumption.

Marx's conception of equilibrium, however, is fundamentally different from the above. He shows that, in addition to value proportions, quite definite technical proportions must exist between the mass of labor and the mass of the means of production (machines, raw materials, buildings), in all the departments and subdepartments of the reproduction schemas. These depend on the particular character of the sphere of production under consideration. For the technical labor process, the amount of value these

268. Marx, *Capital*, vol. 2, 470.

269. Marx, *Contribution to the Critique*, 270.

270. Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 120.

271. Marx, *Capital*, vol. 1, 152, 168, 158, 138, 754; also vol. 2, 471, and vol. 3, 137.

272. *Use value* can only be abstracted from to the extent that the matter at hand is the *process of valorization*, the formation of surplus value: "In considering surplus value as such, the original form of the product . . . is of no consequence. It becomes important when considering the actual process of reproduction. . . . Here is another example of how use value as such acquires economic significance." Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 386 [Marx emphasized "use value"]; similarly, see p. 120.

273. [See Kautsky, "Finance-Capital and Crises"; Hilferding, *Böhm-Bawerk's Criticism of Marx*, 130; Bauer, "The Accumulation of Capital"; Luxemburg, *The Accumulation of Capital*; Bukharin, *Imperialism and the Accumulation of Capital*, 63.]

use values represent is quite immaterial.[274] In factories, such a technical proportionality among factors of production is arranged directly by the technical management. In view of the reciprocal relations of the various branches of production within society, however, it is also the basic condition for the undisturbed course of the production process, because the social division of labor makes the various preceding and subsequent stages of the labor process dependent on one another, as "element[s] of the total labour of society." Despite all their apparent personal independence, producers soon discover that "the independence of the individuals from each other has as its counterpart and supplement a system of all-round material dependence."[275] Only insofar as there is such technical articulation and reciprocal, quantitative accord among individual branches of production is "full employment"[276] of all productive factors in the technical labor process possible, without either unused capacity or shortages of raw materials, machines, or labor power.

In short, the condition for equilibrium in the system of capitalist production as a whole is a dual proportionality of its basic elements. While sale on the market, without a remainder, requires value proportionality within the scope of individual branches of production, for the technical labor process quantitative proportionality of all productive factors, among all branches of production and within each branch as conditioned by the state of technology, is necessary. This technical proportionality is no more present from the outset under the capitalist mode of production than value proportionality, as "the quantitative articulation of society's productive organism . . . is . . . haphazard and spontaneous."[277] Is there any possibility that this dual proportionality is realized at all? This question takes us to the heart of Marx's conception of the problem of equilibrium in the "process as a whole," which is the unity of the technical labor process and the process of value circulation. The difference from the dominant conception is most clearly intelligible in the example of simple reproduction.

"The supposition is that a social capital . . . supplies the same mass of commodity values and satisfies the same quantity of needs in both the current year and the previous year" (that is, it supplies the same mass of use values). Does an equilibrium in reproduction now exist in the case, for example, of a bad harvest reducing the amount of cotton by a half, although it represents the same value as twice as much cotton did previously? In short, does "value . . . remain the same, even though the volume of use values declines"?[278] Seen in terms of value, there would still be "a market equilibrium" in the schema of simple reproduction. In contrast, the schema would necessarily exhibit large disturbances when looked at from the standpoint of the technical labor process: half the spindles and looms would have to be shut down due to the shortage of cotton, that is, the technical scale would be halved. "Reproduction cannot be *repeated* on the same scale."[279] This example shows the inadequacy of the dominant theory's purely value perspective. It assumes that the conditions for equilibrium that are expressed in value equations can always be realized. It does know that capitals that are immobilized in one branch of industry can only be shifted to another branch with difficulty. It treats such instances, however, as "frictions" that only impede the realization of value equilibrium for short periods. In contrast, it regards "adjustment" over longer periods as eminently possible, because the issue here is not so much the transfer of already immobilized old capitals as of the investment of new capitals, thus of "processes of adjustment" within production. These allow the subsequent reestablishment of the correct value proportions on both sides of the exchange equation. In contrast, Marx shows that the value equilibrium asserted by all static theories, to which the economy is supposed to tend, can be established only exceptionally and by chance. This is because the technical labor process gives rise to objective and enduring resistances and blockages that in principle exclude the establishment of such an equilibrium. Even if, when seen from a purely physical point of view, complete freedom and mobility of capital existed, and the transfers in the sense required by the value equations for the establishment of equilibrium took place, equilibrium in the system as a whole would not be achievable, due to the incongruence, in principle, between value proportions and technical, quantitative proportions. It may well be possible for a partial equilibrium to occur temporarily, for example a value equilibrium on the market. But then it becomes apparent that there is no equilibrium in production and various elements of production cannot find employment, or, conversely, that although there is quantitative equilibrium in production, there is no value equilibrium on the market. It follows that with a definite quantitative, technical proportion, which is necessarily given by the scale of production and depends on the size of fixed capital,[280] a value proportion resulting from this technical proportion is also already given. It cannot be changed according to the free will of the entrepreneur so that the theoretically postulated conditions for value equilibrium are satisfied. In short, value proportionality is not very elastic because it is bound up with technical proportionality. Under these circumstances, the incongruence of the two series of proportions and hence the tendency toward the disequilibrium of the system as a whole is unavoidable. On the basis of capitalist production, equilibrium—the "nor-

274. "All these things serve in the real labor process because of the relationship which exists between them as use values—not as exchange values, and still less as capital." Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 398. [Marx emphasized "use values."]

275. Marx, *Capital*, vol. 1, 168, 202–3. Marx therefore speaks of the "interdependent branches of the collective production of a whole society" and of the "bond" that holds it together. Not only are the branches of cattle breeding, which produces hides; tanning, which produces leather; and shoemaking, which works leather up, quantitatively dependent on one another, but those branches that supply them with means of production are too. Marx, *Capital*, vol. 1, 472, 274–75. What results from this and what is important for understanding the dynamics of capitalism is that revolutions in the mode of production in one individual sphere, for example, machine spinning, will necessitate similar revolutions in other spheres, such as weaving and dyeing—otherwise incongruities arise in the technical proportionality between these branches of industry. Marx, *Capital*, vol. 1, 505.

276. [English in the original.]

277. Marx, *Capital*, vol. 1, 202.

278. Marx, *Capital*, vol. 2, 471. Compare Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 145.

279. Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 146.

280. Marx, *Capital*, vol. 2, 245. [This reference is not relevant, unlike 280–87.]

mal course"—is merely our abstraction, a conceptual fiction derived from the "real movement," which is the opposite of this abstraction, namely, constant disequilibrium. "In political economy law is determined by its opposite, absence of law. The true law of political economy is chance."[281]

Not only does Marx deny the regulatory function of the price mechanism, its supposed tendency to balance supply and demand, but he also shows that once this mechanism has fallen into a state of disequilibrium, it continually generates impulses that increase this disequilibrium.[282] Because too much has been produced, there is an impulse to produce still more! From Adam Smith to the present, the dominant schools could only propound the theory of the tendency for the volume of production to adjust to demand with the aid of competition, because they presupposed competition as given, as a kind of occult quality, without ever investigating its origins. "Competition . . . is burdened with explaining all the economists' irrationalities, whereas it is supposed to be the economists who explain competition."[283]

In contrast to the dominant conception, Marx shows that there is no balancing mechanism in the sense of the adjustment of production to demand. According to Marx, an orientation to consumption, that is, adjustment of production to demand, was a characteristic of capitalism's youth, the period before the advent of modern large-scale industry, when there was as yet no large fixed capital.[284] There can be no talk of such an adjustment of production to demand at present, when fixed capital constitutes a predominant and continuously growing share of total capital. The entrepreneur ignores the "market's command" to curtail production, supposedly expressed in falling prices. An orientation toward production instead of consumption is precisely characteristic of the highly developed capitalist economy: that is, production precedes demand. Hence, for the reasons previously provided, there is an inherent tendency to periodically overproduce durable "fixed" capital, for which no profitable employment can be found.[285] But because there is a persistent tendency to overproduce in the sphere producing fixed capital, a compulsion to compete necessarily arises, which does not operate to balance supply and demand. Where, as a consequence of overproduction, there is insufficient living space (market outlets) for all entrepreneurs, individuals are

281. Marx, "Comments on James Mill," 211. [Marx emphasized "chance."]

282. "In actual fact, demand and supply never coincide, or, if they do so, it is only by chance and not to be taken into account for scientific purposes; it should be considered as not having happened." Marx, *Capital*, vol. 3, 291.

283. Ibid., 1005.

284. Compare Marx, *The Poverty of Philosophy*, 137. Compare, on the absence of expansionary economic cycles, cyclical booms with subsequent breakdowns under early capitalism "into the eighteenth century." Sombart, *Der moderne Kapitalismus*, 214 and following. [The quotation is on p. 215.]

285. Marx, *The Poverty of Philosophy*, 137. "What Ricardo cannot answer, and neither Mr Say for that matter, is where competition, and the resultant bankruptcies, trade crises etc. come from, if every capital finds its proper employ?" "*If capitals . . . were not so numerous in relation to the uses of capital—competition* would be completely inexplicable." Marx, "Aus David Ricardo," 416. [Marx emphasized only "competition."] The only one of the recent writers to have seen this problem is Willard L. Thorp: "Under competition," he writes, "it is certain that some degree of overcapacity will exist." Thorp, "The Problem of Overcapacity," 491.



compelled to save themselves from collapse at the expense of the others. Far from curtailing output when prices and profits are falling, every entrepreneur with access to the necessary means seeks to produce more cheaply and, indeed, profitably than competitors, by introducing better and cheaper technologies and by expanding the scale of production. So the continual overproduction of fixed capital constitutes a permanent impulse to continually revolutionize technology and hence to continuous revolutions in value, which are characteristic of the capitalist mode of production.[286] Continuous improvements in technology and expansion of the scale of production make general overproduction even worse. The individual entrepreneur has, however, secured the profitability of and markets for his own progressive plant.[287]

So, under the pressure of initial overproduction, the transformation of the entire structure of the capitalist mechanism propagates over the whole breadth of society. At one pole, new, higher technology, together with the enlarged scale of the individual plant, is victorious. The extra profits achieved attract new entrepreneurs, the movement becomes more generalized, and an "upswing" occurs. At the other pole of society, simultaneously and as a direct consequence of the spread of improved technologies and associated revolutions in value (reduction in "socially necessary" labor time), this does not prevent all plants with more backward technologies from being even more threatened by falling prices and overproduction and pressured to withdraw from competition altogether. As, however, the scale of those few new, large plants exceeds the productive capacity of the many small, failing plants, the end result of the movement is growth in the overall scale of social production. And this movement is repeated again and again, as the large, new plants with the most modern technologies soon lose their privileged position because of the generalized application of technological innovations, and the game must begin anew.

Under the pressure of periodically occurring overproduction, the impulse to constantly revolutionized technology and hence also to "periodic revolutions in value" is strengthened. The entrepreneurs who yesterday were able to gain extra surplus value by introducing new processes are today threatened by newcomers with still better technologies and have to be content with the average profit. Tomorrow they may not even cover their costs or may indeed register a loss, and will have to pull out of the market.[288] There is an eternal hunt after extra profits for their own individual plants, a continual attempt to secure an at least temporary, privileged island of extra profit by revolutionizing technology. The "real movement," presented above, shows that there can be no talk of an adjustment of production to demand; rather, production constantly outpaces demand, and the regulatory function of the price mechanism does not exist at all. Far from leading to the curtailment of production, periods of falling prices were in the past and still are today periods of the greatest technological progress and expansion of production. In the face of this now self-evident failure in the construc-

286. Marx, *Capital*, vol. 2, 185.

287. Compare Marx, *Capital*, vol. 3, 231–32 [these pages do not seem relevant], 279 and following.

288. Compare Marx, *Capital*, vol. 2, 185.

tion of the existing economic mechanism, the dominant theory also begins to discover that instead of the alleged tendency toward equilibrium, there is perpetual motion of change, a tendency toward disequilibrium;[289] that instead of the regulatory function of the price mechanism balancing supply and demand, situations can arise in which "once destroyed, equilibrium is lost forever."[290]

A theory of dynamic movement must not only point out individual dynamic factors but also make the disequilibrating movement of the system as a whole and its causes intelligible. Beyond that, it has to show the consequences of the dynamic movement for the whole system. In a self-contained theory, Marx sought to grasp not only the sequence of the economic cycle but also the structural changes in the whole system that were its result. Only thus could he show the direction of the overall course of the economic system, its "developmental tendencies." This is not contradicted by the fact that, at a particular level of development, the indicated direction of this course encounters a limit and approaches its end. The validity of the theory is not put in question if it is shown that this limit to the capitalist dynamic is conditioned by and derived from the basic conditions of the system, the dual character of labor.[291]

We have seen how, with the development of the capitalist mode of production, a tendency toward growth in the minimum size of plants prevails.[292] Hence also growth in the capitals required to run a business under "normal" conditions.[293] It follows that, at a given moment, the scale of production, the size of plant, does not depend on the free will of the entrepreneur. "The actual degree of development of the productive

289. Compare Rosenstein-Rodan, "Das Zeitmoment in der mathematischen Theorie," 131.

290. Ricci, "Die 'synthetische Ökonomie' von Henry Ludwell Moore," 655.

291. Marx not only regarded a definite level of maturity in the development of the objective factor—the economy—as a precondition for the future higher form of society but also the subjective factor, humanity itself. World history, for him, "is nothing but the creation of man through human labor, nothing but the emergence of nature for man." Marx, "Economic and Philosophic Manuscripts of 1844," 305; compare 292, 333. The "conquest" of the world of objects is, at the same time, the first emergence of this world for humanity. For Marx, its domination, "possessing" it [ibid., 299], does not happen because of a theoretical outlook but rather through labor, through human praxis. In this way, Marx distinguishes himself from Feuerbach. Compare, for example, Marcuse, *Studies in Critical Philosophy*, 22. The labor whose result is the subjection of nature and the evolution of humanity is not, however, "value-creating" labor but "real," that is, "concrete" labor, which creates useful things; in short, it is the development of human productive power. Since concrete labor is always bound together with value-creating labor in the present economic order, however, the degree of the progressive maturation of concrete labor can only be expressed in its value, in the fall of the rate of profit. It was shown above that the fall in the rate of profit is only the capitalist expression of the wealth of society, of the degree of development of labor's productive power, and hence is also a symptom of the approaching supersession of capital's rule itself. "The decrease in the interest rate is therefore a symptom of the annulment of capital only inasmuch as it is a symptom of the growing domination of capital in the process of perfecting itself—of the estrangement which is growing and therefore hastening to its annulment." Marx, "Economic and Philosophic Manuscripts of 1844," 316.

292. Having shown in *Das Akkumulations- und Zusammenbruchsgesetz* the consequences that arise for the problem of equilibrium by considering the process of accumulation in terms of value, I confine myself here to emphasizing those moments that impede the attainment of a state of equilibrium from the material side of the technical labor process and increase the incongruence, already described, between material and value proportions even more.

293. Marx, *Capital*, vol. 1, 777.



forces compels him to produce on such and such a scale."[294] This is, therefore, something given by the technology. It is self-evident that this makes accord between the technical proportions and the required value proportions more difficult. In the course of capitalist development, the tendency toward growth in the organic composition of capital prevails. An ever-larger part of a given capital is transformed into means of production (MP) and an ever-smaller part into labor power (LP).[295] Looked at from the value side, the ratio *c:v* does grow, however, because of the slower pace of technological progress (cheapening, in value terms, of the means of production) than the quantitative growth in the ratio of MP to LP. The difference between capital's rates of growth in terms of the quantity [of commodities] and value makes the congruence of value and physical proportions even more difficult than previously.

Further, the analysis of the technical labor process yields the law of the uneven development of the individual branches of production.[296] It is precisely the example of this disproportionality in development that best illustrates the distinction between Marx's conception and that of the dominant theory. The latter represents uneven development as capital accumulation in different branches as being different in value terms, for example, 20 percent in one, 35 percent in another, and so on; and disturbances as arising from such value disproportions. According to Marx, this can happen, but does not have to; and does not get to the essence of the problem. Even if all spheres were to have accumulated evenly in value terms, for example, by 1 percent, disturbances must nevertheless arise if the expansion in material terms is not proportionally the same in all branches of production. For with the same percentage growth in capital in all branches, the material expansion in the various branches can vary in size and amount, for example, to 5 percent in one sphere and 20 percent in another. This is conditioned by the specific technological character of each sphere, and according to Marx, it is these characteristics that underlie leaps in technological development.[297]

The contradiction, in the abstract, between possible, continuous accumulation of

294. Marx, *The Poverty of Philosophy*, 118. The significance of this statement first becomes entirely apparent if we compare it with Böhm-Bawerk's view, according to which the scale of production can be determined arbitrarily and is not technically given. According to Böhm-Bawerk, "any given total of present goods, be it large or small, is sufficient to purchase and remunerate the total supply of labor existent in an economic community. All that is required is to bring about a corresponding contraction or extension of the production period." Böhm-Bawerk, *Capital and Interest*, vol. 2, 354. It is simply to be wondered why unemployment continues to exist, when it appears so easily abolished.

295. Marx, *Capital*, vol. 1, 773–75.

296. "The specific degree of development of the social productivity of labour differs from one particular sphere of production to another." Marx, *Capital*, vol. 3, 263.

297. "If all other capitals have accumulated at the same rate, it does not follow at all that their production has [also] increased at the same rate. . . . The same value is produced in both cases, but the quantity of commodities in which it is represented is very different. It is quite incomprehensible, therefore, why trade A, because the value of its output has increased by 1 percent while the mass of its products has grown by 20 percent, must find a market in trade B, where the value has likewise increased by 1 percent, but the quantity of its output only by 5 percent. Here, the author has failed to take into consideration the difference between use value and exchange value." Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 306–7.

value and the fact of discontinuous, jerky material expansion is related to, but not identical with, the above law. Vulgar Marxist literature is fond of looking at accumulation in purely value terms and assuming that any arbitrary amount of value can be accumulated (see, for example, Laurat):[298] that 50 percent of the surplus value is consumed by the capitalist and the other 50 percent steadily accumulated each year. It does not ask whether this surplus value destined for accumulation is large enough to acquire the quantities of means of production required for the expansion of production. The assumption that any small increase in profit can correspond to an equally small growth in the technological apparatus of production, that is, the presupposition of the infinite divisibility of goods, underpins this conception. In contrast, Marx emphasizes that such a parallel relation between value accumulation and material accumulation does not exist, because not every dollar earned is accumulated, that is, can be converted into the material elements of production. For the expansion of the scale of production, a certain minimum amount of capital is usually required, to buy a whole set of technically connected machines making up a unit (for example, in the textile industry).[299] Expansion can only take place, therefore, by this unit, or multiples of it.[300] Such material relations—and consequently also the value relations they bear—consequently determine the minimum amount of money capital necessary for expansion and vary from industry to industry.[301] In short, according to Marx, "the proportions in which the productive process can be expanded are not arbitrary, but are prescribed by technical factors."[302] While, for example, the entire surplus value (or even part of it) suffices and is employed for the expansion of production in one branch, in others the surplus value is saved up for several years until it reaches the minimum size necessary for "real accumulation."[303] Consequently, while one branch of production may be expanded every year, expansion in others only occurs at intervals of several years.

The incongruence between the value side and the material side of the process of reproduction, which we have examined from the side of production, is increased still more by impulses that come from the demand side. An even, proportional expansion of all the spheres of production rests on the tacit assumption that demand (consumption) can be expanded just as evenly and proportionally. In contrast, Marx emphasizes that the individual or productive use of certain commodities is constrained, inelastic, which must likewise result in an uneven material expansion of production in various spheres. No one who finds two tractors sufficient for the cultivation of their land will buy four simply because their price has fallen by half. Demand for tractors is, all other things being equal, not dependent on their price alone but is rather determined by the area to be cultivated, that is, quantitatively. "But the use value—consumption—depends not

298. [Laurat, *Un système qui sombre.*]
299. Compare Marx, *Capital*, vol. 2, 162–63.
300. Marx, *Capital*, vol. 1, 465–66.
301. Marx, *Capital*, vol. 2, 162–63, and vol. 1, 422, 424.
302. Marx, *Capital*, vol. 2, 158.
303. Ibid., 565.



on value, but on the quantity. It is quite unintelligible why I should buy 6 knives because I can now get them for the same price that I previously paid for 1."[304]

All these moments exclude symmetry in technical and value movements; consequently, they impede the doubly proportional expansion of the productive apparatus, in both value and quantitative terms, that theory postulates as the condition for equilibrium. The realization of this equilibrium cannot be an enduring rule. With the constant impulse to revolutionize technology and values, the coordination of the value and material sides of the productive apparatus must become more and more difficult and their incongruence constantly grow. The two sides of the productive apparatus move in opposite directions, following technological change and the development of the productive forces: the values of individual commodities have a tendency to fall, while the mass of material goods increases. Under such circumstances equilibrium, the "rule" presupposed by political economy, can only occur, as it were, by chance within the general irregularity, as a momentary point of transition in the midst of constant disequilibrium.[305]

304. Marx, "Economic Manuscript of 1861–63 [Notebooks XII to XV]," 307. The fact of inelastic demand, along with the role of money, constitutes the main argument in Marx's critique of the James Mill–Say theory of the identity of demand and supply, by means of which the possibility of generalized crisis is denied. See ibid., 290–92.
305. "A mode of production whose laws can only assert themselves as blindly operating averages between constant irregularities." Marx, *Capital*, vol. 1, 196.