

Also by Christopher J. Arthur

DIALECTICS OF LABOUR: Marx and his Relation to Hegel

ENGELS TODAY (*editor*)

FRIEDRICH ENGELS: A Centenary Appreciation (*editor*)

LAW AND MARXISM (*editor*)

MARX'S CAPITAL: A Student Edition (*editor*)

THE GERMAN IDEOLOGY (*editor*)

Also by Geert Reuten (in English)

VALUE-FORM AND THE STATE: The Tendencies of Accumulation
and the Determination of Economic Policy in Capitalist Society
(with *Michael Williams*)

The Circulation of Capital

Essays on Volume Two of Marx's *Capital*

Edited by

Christopher J. Arthur

*Honorary Lecturer
School of Social Sciences
University of Sussex*

and

Geert Reuten

*Associate Professor in Economics
University of Amsterdam*

HB
501
N137
C55
1998





First published in Great Britain 1998 by
MACMILLAN PRESS LTD
 Houndmills, Basingstoke, Hampshire RG21 6XS and London
 Companies and representatives throughout the world

A catalogue record for this book is available from the British Library.
 ISBN 0-333-68015-4



First published in the United States of America 1998 by
ST. MARTIN'S PRESS, INC.,
 Scholarly and Reference Division,
 175 Fifth Avenue, New York, N.Y. 10010

ISBN 0-312-21025-6

Library of Congress Cataloging-in-Publication Data
 The circulation of capital : essays on volume two of Marx's 'Capital'
 / edited by Christopher J. Arthur and Geert Reuten.

p. cm.
 Includes bibliographical references and indexes.

ISBN 0-312-21025-6 (cloth)

1. Marx, Karl, 1818-1883. Kapital. 2. Capital. 3. Marxian
 economics. I. Arthur, C. J. (Christopher John) II. Reuten, G. A.
 HB501.M37C55 1997
 335.4'1—dc21

97-28027
 CIP

Selection, editorial matter and Chapter 1 © Christopher J. Arthur and Geert Reuten 1998
 Chapter 5 © Christopher J. Arthur 1998
 Chapter 8 © Geert Reuten 1998
 Chapters 2, 3, 4, 6 and 7 © Macmillan Press Ltd 1998

All rights reserved. No reproduction, copy or transmission of this publication may be made
 without written permission.

No paragraph of this publication may be reproduced, copied or transmitted save with
 written permission or in accordance with the provisions of the Copyright, Designs and
 Patents Act 1988, or under the terms of any licence permitting limited copying issued by
 the Copyright Licensing Agency, 90 Tottenham Court Road, London W1P 9HE.

Any person who does any unauthorised act in relation to this publication may be liable to
 criminal prosecution and civil claims for damages.

The authors have asserted their rights to be identified as the authors of this work in
 accordance with the Copyright, Designs and Patents Act 1988.

This book is printed on paper suitable for recycling and made from fully managed and
 sustained forest sources.

10 9 8 7 6 5 4 3 2 1
 07 06 05 04 03 02 01 00 99 98

Printed and bound in Great Britain by
 Antony Rowe Ltd, Chippenham, Wiltshire

Contents

<i>Notes on the Contributors</i>	vi
1 <i>Marx's Capital II, The Circulation of Capital: General Introduction</i> <i>Christopher J. Arthur and Geert Reuten</i>	1
2 <i>Economic Form and Social Reproduction: On the Place of 'Book II' in Marx's Critique of Political Economy</i> <i>Paul Mattick, Jr</i>	17
3 <i>Beyond the 'Commerce and Industry' Picture of Capital</i> <i>Patrick Murray</i>	33
4 <i>The Capital/Consumer Relation in Lean Production: The Continued Relevance of Volume Two of Capital</i> <i>Tony Smith</i>	67
5 <i>The Fluidity of Capital and the Logic of the Concept</i> <i>Christopher J. Arthur</i>	95
6 <i>Money in the Circulation of Capital</i> <i>Martha Campbell</i>	129
7 <i>Marx's Reproduction Schemes and Smith's Dogma</i> <i>Fred Moseley</i>	159
8 <i>The Status of Marx's Reproduction Schemes: Conventional or Dialectical Logic?</i> <i>Geert Reuten</i>	187
<i>Author Index</i>	231
<i>Subject Index</i>	235

Notes on the Contributors

Christopher J. Arthur studied at the Universities of Nottingham and Oxford and taught philosophy for 25 years at the University of Sussex. He is the author of *Dialectics of Labour: Marx and his Relation to Hegel* (1986, Basil Blackwell). He edited and introduced Marx and Engels, *The German Ideology* (1970, Lawrence & Wishart); Pashukanis, *Law and Marxism* (1978, Pluto Press); *Marx's Capital: A Student Edition* (1992, Lawrence & Wishart); and *Engels Today: A Centenary Appreciation* (1996, Macmillan). His publications also include 'Hegel's Logic and Marx's Capital' (1993, in F. Moseley (ed.), below); and 'Against the logical historical method: dialectical derivation versus linear logic' (1997, in F. Moseley and M. Campbell (eds), below).

Martha Campbell graduated from St John's College and holds a PhD in economics from the New School for Social Research, New York. She is currently teaching economics at Simon's Rock College. Together with F. Moseley, she edited *New Investigations of Marx's Method* (1997, Humanities Press) in which appears her paper on Marx's theory of money. Her publications also include 'The commodity as "characteristic form"' (1993, in R. Blackwell *et al.* (eds), *Economics as Worldly Philosophy*, Macmillan); and 'Marx's concept of economic relations and the method of *Capital*' (1993, in F. Moseley (ed.), below).

Paul Mattick Jr graduated from Haverford College and holds an MA and PhD in philosophy from Harvard University. He is currently associate professor of philosophy at Adelphi University. He is the author of *Social Knowledge: An Essay on the Limits of Social Science* (1986, Hutchinson/Sharpe) and the editor of the *International Journal of Political Economy*. He edited and introduced *Eighteenth-Century Aesthetics and the Reconstruction of Art* (1993, Cambridge University Press). His other publications include 'Some aspects of the value-price problem' (1981, *Economies et Sociétés*); and 'Marx's dialectic' (1993, in F. Moseley (ed.), below).

Fred Moseley gained his PhD in economics from the University of Massachusetts at Amherst and is professor of economics at Mount

Holyoke College. He is the author of *The Falling Rate of Profit in the Postwar United States Economy* (1991, Macmillan). He also edited and introduced (with E. Wolff) *International Perspectives on Profitability and Accumulation* (1991, Edward Elgar); *Marx's Method in 'Capital': A Reexamination* (1993, Humanities Press); *Heterodox Economic Theories: True or False?* (1994, Edward Elgar); and (with M. Campbell) *New Investigations of Marx's Method* (1997, Humanities Press). His other publications include 'Capital in general and Marx's logical method' (1995, *Capital & Class*).

Patrick Murray graduated in physics and mathematics from Marquette University and took a PhD in philosophy of science from St Louis University. He is professor of philosophy at Creighton University. He is the author of *Marx's Theory of Scientific Knowledge* (1988, Humanities Press). He edited and introduced *Reflections on Commercial Life: An Anthology of Classic Texts from Plato to the Present* (1996, Routledge). His publications also include 'Karl Marx as a historical materialist historian of political economy' (1988, *History of Political Economy*); 'The necessity of money: how Hegel helped Marx to surpass Ricardo's theory of value' (1993, in F. Moseley (ed.), above); and (with J. Schuler) 'Educating the passions: reconsidering David Hume's optimistic appraisal of commerce' (1993, *History of European Ideas*).

Geert Reuten graduated in sociological economics from Erasmus University Rotterdam; he holds an MSc from the University of London (Birkbeck College) and a PhD from the University of Amsterdam, where he is currently an associate professor of history and philosophy of economics. He is on the editorial board of the *Tijdschrift voor Politieke Economie* and has edited, in Dutch, various books on economic policy issues. His publications include *Value-Form and the State* (with Michael Williams) (1989, Routledge); 'Accumulation of capital and the foundation of the tendency of the rate of profit to fall' (1991, *Cambridge Journal of Economics*); 'The difficult labor of a theory of social value' (1993, in F. Moseley (ed.), above); 'The political economy of welfare and economic policy' (with Michael Williams) (1994, *European Journal of Political Economy*); 'A revision of the neoclassical economics methodology' (1996, *Journal of Economic Methodology*); 'The notion of tendency in Marx's 1984 law of profit' (1997, in F. Moseley and M. Campbell (ed), above).

Tony Smith gained his PhD in philosophy from the State University of New York and is currently professor of philosophy at Iowa State University. His publications include *The Logic of Marx's Capital* (1990, State University of New York Press); *The Role of Ethics in Social Theory: Essays from a Habermasian Perspective* (1991, State University of New York Press); *Dialectical Social Theory and its Critics* (1993, State University of New York Press); 'Marx's Capital and Hegelian dialectical logic' (1993, in F. Moseley (ed.), above); 'Flexible production and the capital/wage labour relation in manufacturing' (1994, *Capital & Class*); 'Marx's theory of social forms and Lakatos's methodology of scientific research programs' (1997, in F. Moseley and M. Campbell (eds), above).

1

Marx's *Capital II*, The Circulation of Capital: General Introduction

Christopher J. Arthur and Geert Reuten

To understand how the life and growth of capital related to the exploitation of people was Marx's aim in his great work, *Capital*. But for a comprehensive account of the logic of capital's life process it was necessary to go beyond the dynamic of class struggle at the point of production elucidated in the first volume of the work. Marx discerned three complementary aspects of capital's movement which he treated in three books: the production of capital (1867); the circulation of capital (1885); and 'the process as a whole' (including distribution) (1894).

In 1978, Ernest Mandel, introducing a new English translation of the second book, *Capital II*, referred to it as 'the forgotten book' of *Capital*, while a reviewer of the translation (Tom Kemp) called it 'the unknown volume'. This is something of an exaggeration, for it was here, in the final part of this book, that Marx introduced his 'Schemes of Reproduction' which influenced both Marxian and orthodox economics in the first decades of the twentieth century. Nevertheless such debate as has taken place on the book has been mostly restricted to that final part. At all events, it would certainly be right to say that, of the three books of *Capital*, the second is the least known and has been least studied over the last 50 years. Yet there is much to learn from in doing so.

Here, in a collection of original essays, a group of specialists in the field range over the whole of *Capital II*, bringing to bear on various of its chapters the latest methodological resources, textual scholarship, scientific criticism and accumulated knowledge of Marxian theory. The result, we hope, will repair the unjustified

neglect of Book II in the literature and awaken new interest in it, for our work fills a gap in scholarship, in that there is not a single volume on *Capital II*. Furthermore even the existing textbooks and commentaries on Marx's economics as a whole limit the amount of space given to it compared with the first and last books.

This collection of papers, the only book so far specifically devoted to considering problems in Book II of *Capital*, is especially thorough on the methodological aspects of that work. However it is not a textbook as such, working through the whole of Marx's argument from beginning to end, but a sequence of essays 'at the frontier', with individual authors selecting what seemed to them the most interesting issue to address, although every part of the text is treated by one or other contributor, and the papers are in that way beautifully complementary.

The first versions of the papers were discussed at the International Symposium on Marxian Theory V, a six-day working conference devoted to *Capital II*, held at Mount Holyoke College (Massachusetts) in 1995. Subsequent revisions are the result of it.¹

We provide in the following sections a general introduction to *Capital II* (which naturally reveals our own view on matters at issue in Marxian theory). Next we give some information on the manuscripts and editions of Book II. Then we comment briefly on its reception in various traditions of economic thought. Finally we preview the papers presented here.

THE INTERCONNECTION OF BOOK I AND BOOK II OF CAPITAL

Even if we neglect Marx's *Theories of Surplus Value* (which some consider the fourth Book of *Capital*) the (remaining) three books cover some 2200 pages, which implies a demanding architectonic. The outward systematic is in its books, next parts and then chapters. The main inward systematic is organized in the books and their parts rather than the chapters. As it happens, Books I–III now coincide with the published Volumes I–III, even if Marx himself at various points in time had different expectations on this matter. (More on this below: note that, while in this chapter we consistently use 'book' instead of 'volume', some authors prefer the latter term or like to use the terms interchangeably; indeed, except when studying the 'making' of *Capital*, the terms can be used interchangeably,

but it is important to understand that, when Marx in his correspondence refers to what will be in 'Volume 2', this does not refer to 'Volume 2' as given us by Engels but to Engels's Volumes 2 and 3.)

The title of Book II, 'The Process of Circulation of Capital', is clearly intended to be complementary to that of Book I, 'The Process of Production of Capital'. These titles indeed represent the subject matter. However, since Marx starts Book I with *commodities*, and over and over again returns to what 'appears as' capitalism's 'elementary form', the subject matter is easily misunderstood. (See Chapter 3 by Murray.) Nothing could be more wrong than to think that Book I is about the production of commodities, and Book II about their circulation. This is not so at all. The subject matter throughout is clearly signalled by Marx to be *capital*; this is what is produced, circulated and distributed. The circulation of commodities is thus incorporated within the circulation of capital, just as the production of commodities is studied in relation to the production and reproduction of capital.

Book I gives a thorough analysis of simple commodity circulation before it turns to capitalist production of these commodities. Only at the end of Part Two of this Book do we 'leave this noisy sphere, where everything takes place on the surface and in full view', to enter 'the hidden abode of production'. Here we see 'not only how capital produces but how capital itself is produced' (Marx, 1867: 279–80). It was necessary to follow this sequence for production of capital is necessarily production of value, a form originally constituted in exchange:

To develop the concept of capital it is necessary to begin not with labour but with value, and, precisely, with exchange value in an already developed movement of circulation. It is ... impossible to make the transition directly from labour to capital. (Marx, 1953: 259)²

Equally Book II is not about such circulation of commodities as distinct from their production; rather it is about the social circulation of *capital*; as such this circulation includes the time spent in the production process, already partially analysed in Book I. Book II (Part One), under the headings of the three interconnected circuits of money capital, productive capital and commodity capital, *reconceptualises* the circulation process from Book I, only now as thoroughly transformed from a 'shallow' perspective

which understands it to be about *commodities* simply to a 'deeper' view which reconceptualises it as the bearer of the part of the *capital* circuit, whose movement subsumes that of money and commodities under the drive for valorization. (See Chapters 3 and 5 below.)

All the attention in Book I was on the significance of production for capital's valorization: that is for value augmentation geared to the growth of capital: accumulation. Even if this analysis of capitalist production already stamps Marx's critique of classical political economy (see Chapter 2 below) – classical political economy neglected the capitalist form of production, as does neoclassical economics today – Marx shows the insufficiency of just remaining at that level of analysis. Thus he takes on the investigation of production and capital's valorization in the perspective of the circulation of capital.

Although Book II embodies the requirement for such a transition from Book I, we are rather short of methodological statements by Marx on it. It is worth quoting a relevant passage at the end of the first edition of *Capital I*, dropped in subsequent editions.³ In this passage Marx gives a final numerical example of the production of surplus-value (in iron-smelting) and then concludes:

Sold by the capitalist at its value, the iron realizes a surplus-value of £1000, corresponding to the unpaid labour materialized in the value of the iron. But for this to come about the iron must be *marketed*. The immediate result of capitalist production is the *commodity* ... pregnant with surplus value. We are thus thrown back on our point of departure, the commodity, and with it to the sphere of circulation. What we have to deal with in the following book, however, is no longer *simple commodity circulation*, but *the circulation process of capital*. (Marx, 1867 1st: 619)

This is because we now have to deal with the circulation, not of commodities as uncomprehended givens, but of commodities 'pregnant with surplus value', that is, products of capital, and therefore shapes of capital's reproduction.

Of course, right from the start of Book I, Marx presupposes what he will later prove: that there is no such thing as generalized circulation of commodities as a free-standing phenomenon; rather generalized commodity circulation presupposes capitalist production and hence is determined as an aspect of the circulation of capital

(Marx, 1885: 117). In Book II, however, Marx is not dealing, as he was at the start of Book I, with the circulation of money and commodities *as surface phenomena*, but as *forms of capital's self-positing movement*: for capital to be what it is, for it to exist and survive, it has to go through the phases, the metamorphoses, of being money capital, of being capital in production, of being commodity capital and recycling the movement over again. So in Book II Marx is in a way running over the Book I ground at a more comprehensive, that is concrete, level of conceptualization (just as Hegel often represents material in his dialectical expositions at more concrete levels). Hence in Book II such matters as 'turnover time' obviously require discussion of time in production along with time spent on the market.

In sum, when Marx entitles Book II 'The Process of Circulation of Capital' this does not refer to circulation in its narrow sense, in which it is *contrasted* with the production process, it refers rather to the *whole process* of capital's movement through such phases. In the last part of the book this becomes a study of the revolutions of the entire social capital, articulated through interchanges between its key particularizations.

In the jargon of modern orthodox economics, by this Marx apparently takes the analysis into 'macroeconomics'. Indeed he does so, and Marx may therefore be considered a founder of a particular macroeconomics (see Chapter 8 below). Nevertheless to see merely that would be to miss important conceptual differences between Marx and modern orthodox economics, for much of *Capital II*, especially Part Two on the turnover of capital, would nowadays be classified as business economics. And to further complicate the comparison, much of that same part – together with the other two – would nowadays be classified as monetary economics (see Chapter 6 below). Leaving aside what analysis Book I exactly presents (in orthodox jargon it is a blend of social economics, microeconomics and business economics) the Book II 'macroeconomics' incorporates and surpasses it. All this, of course, makes Book II into a fruitful source of theoretical inspiration along paths barely explored. At the same time problems of incommensurability between Marxian and orthodox economics are revealed. (The incommensurability is highlighted if we consider the orthodox search for micro-foundations of macroeconomics: in the Marxian case – dialectical interpretations of Marx especially would emphasize this – the Book II 'macro' analysis rather provides the foundation for Book II!)

While both books posit that capital's production and circulation are inseparable, the emphasis is certainly different in the two books. A lot of things 'set at zero' in Book I are indeed to do with markets (for example, sale is assumed to be no problem) and are addressed in Book II (notably the problem of exchange between 'departments' producing means of production and 'departments' producing means of consumption). Conversely the second book holds at zero many of the problems of production such as the struggle over wages and the working day.

In Book I, Marx considered the 'immediate production process of capital' as a unity of the labour process and the valorization process, the result being not merely a product but a commodity containing surplus value.⁴ Therewith the production process constitutes a process of production and accumulation of capital itself, subject to the realization of this surplus value.⁵ Marx assumed in this book that there was no problem about it, that the capitalist was able to sell the product at its value and that he found in the market material means of production needed to continue production. The formal and material changes undergone by capital in the sphere of circulation distinct from the immediate production process were not examined, the only act of circulation dwelt on in Book I being the purchase and sale of labour power as the basic premise of capitalist production.

However the immediate production process has to be understood as located within the circuit of industrial capital as a whole. Whereas in Book I the argument went from exchange down to production and back to circulation, as a result of just that discussion we grasp capital 'as this unity-in-process of production and circulation' (Marx, 1953: 620). In Book II, Marx studies 'circulation' in this totalising sense.

SCHMATIC OUTLINE OF CAPITAL II

Marx's *Capital* Book II, 'The Circulation Process of Capital', is divided into three main parts. In Part One, Marx considers the metamorphoses capital undergoes in its circuit, namely as money capital, production capital and commodity capital. Of course, in normal conditions, this sequence is expanded into a regular imbricated set of sequences such that at any given time a different component of the total capital is present in each form.

In Part Two, Marx examines the circuit as a turnover. He shows how various components of capital (for example, so-called 'fixed' and 'circulating' complete their circuit at different rates; he argues that the influence of the circuit's periodicity, and the varying ratios of such components, must affect the annual rate of surplus value. In both these parts capital as such is treated; but it is not considered as a system of capitals; however, the reproduction of any given capital is necessarily bound up with the reproduction and circulation of the total social capital.

Thus in Part Three, when Marx considers reproduction, he examines the revolution of this totality which necessarily includes not only the intertwining of each individual capital circuit with others but the whole circulation of commodities, those commodities bought by the workers to maintain themselves as well as those means of production capitals sell to each other. On this basis Marx distinguishes two 'departments' of production: those producing means of production and those producing means of consumption. This very division, as well as the analysis of the relations between these departments, is one of the enduring achievements of Marx's work.

The relatively 'technical' character of much of Book II misled Engels, for one, into thinking that the argument concerns only relations between capitals; this is a grave mistake, for class relations are integral to capital and thus the matters dealt with here stand in intimate connection with its class basis; for example, capital's concern with shortening turnover time has consequences for the intensity of labour, and the very choice of criterion for discriminating departments is rooted in the necessary reproduction of class relations (as Mattick points out in Chapter 2).

Even if this Book II study is still one at a relatively abstract level, the *phenomenal* expressions of the abstract categories developed may be visible to the extent that the concrete is a simple expression of the abstract categories – but not if in this process of concretion the system inverts its fundamental logic in its appearances (for example, in interest or 'productivity of capital') or reverses its dynamic (for example, in the case of tendencies and countertendencies). Tony Smith, in Chapter 4, shows how many of the categories developed in Marx's Book II indeed find phenomenal expression; hence he can show how much of the Book II analysis can help us in understanding current developments in capitalism such as 'flexible production'.

GERMAN AND ENGLISH EDITIONS, THE MANUSCRIPTS
AND ENGELS'S EDITORIAL WORK

Marx himself managed to publish only the first book of *Capital*: 'The Process of Production of Capital' (1867). Book II 'The Process of Circulation of Capital' appeared posthumously, edited by Friedrich Engels from Marx's manuscripts, as was the third book (1885 and 1894). A work that is sometimes considered as Book IV, *Theories of Surplus Value*, published in three volumes, was also edited from Marx's manuscripts, this time by Karl Kautsky (1904/10). An argument for not considering it as Book IV is that the material from which it was drawn is too rudimentary and lacks a concept for its presentation.⁶

As far as Book II is concerned, the following German and English editions are the most relevant. In German: the first edition by Engels was published in Hamburg in 1885; a second edition by Engels, with minor changes, appeared in 1893; this second edition is the basis for volume 24 of the *Marx-Engels Werke (MEW)*, Berlin; the original manuscripts for Book II will shortly be published in the *Marx-Engels Gesamtausgabe (MEGA)*, Berlin and Amsterdam. In English: the first English translation by E. Untermann was published by Kerr & Co, in 1909; it is the basis of subsequent Moscow editions. A new translation by D. Fernbach appeared in 1978 (New York and London). Fernbach's translation is generally preferable, but it should always be checked against the other. The English *Marx Engels Collected Works* will shortly provide a revised version of the old Moscow edition (as its volume 36). But our information is that the changes to the translation will not be as extensive as might be justifiable, although we may expect the provision of useful editorial notes, as in the new edition of Book I published as Volume 35 (1996) of the *Collected Works*.

Marx referred to the three parts of *Capital* as 'books'. While Book I appeared on its own in 1867 as 'Volume One', Marx at that time intended to publish both subsequent books in one volume. But after Marx's death in 1883, Engels found so much material to hand for these books that he published them as separate volumes. Thus, as we have already indicated, the upshot is that 'books' correspond exactly with 'volumes'.⁷

As Engels explains in his preface to the second edition of *Capital II*, the material from which he reconstructed Book II consists of several drafts attempted by Marx (Notebooks I–VIII, written

between 1865 and 1878; however, Engels mainly used the drafts of 1870 (II), 1877 (V) and 1878 (VIII)). It will eventually be possible for all to study what a fist he made of it when the original manuscripts are published in the new *MEGA*. Thus far only the first full draft dated 1865 (not used by Engels) has appeared. (One aspect of it is treated in Arthur's paper below: see Appendix A to Chapter 5).

It is worth noting that Book II comprises Marx's final thoughts on capital, for the various drafts Engels used were composed more than five years after the draft of Book III (1865). It follows that thoughts developed in Book II may well have to be taken into account when evaluating Book III.⁸

INFLUENCE OF CAPITAL II

Some comments on the influence of Book II on Marxian and orthodox economic theory would be appropriate here. However, as the material for this might cover a chapter or even a full book in itself, we merely provide some references to the literature. As we have already indicated, it was Part Three of the book that had the most impact, whereas the other two parts were rather neglected.⁹

As to Part Three (on the 'macroeconomic' departmental division and reproduction schemes) we may mention four main lines of influence. They all arose in the first decades of the twentieth century. The first author to adopt Marx's reproduction schemes in his own work back in 1895 was Tugan-Baranowski, and he subsequently influenced orthodox approaches to the business cycle. Within this line we also have the construction of orthodox macroeconomics and growth theory.¹⁰ The work of Kalecki deserves special mention, as in many respects his work is within the Marxian tradition: certainly Marx's reproduction schemes influenced his approach to economics.¹¹ The second line is within Marxian economics where Hilferding and Luxemburg were among the first to adopt the analysis.¹² A third, and rather surprising, line is the adoption of the schemes in the USSR economic planning of the 1920s.¹³ However from this line there is a direct link to the last one, input – output analysis. Leontief, a Soviet emigrant to the USA, founder of this approach within orthodox economics for which he was granted a Nobel prize, apparently got the idea from his Soviet education.¹⁴

(The above is merely a preliminary guide for the interested reader, and the list of references in the notes is not meant to be exhaustive.)

INTRODUCTION TO THE ESSAYS

We turn now to outlining the sequence of essays in this volume. We begin with two papers that pertain to *Capital II* as a whole. Paul Mattick shows how Book II fits into the overall structure of *Capital*. He argues that, just as the social form of commodity exchange that formed the starting point of the analysis in Book I was unmasked as the social form of an exploitative class relation obscured from view by market relations, so in Book II Marx considers how that form is structured in terms of the circulation of capital. The circulation of capital as a totality among economic categories gives rise to the idea of 'the economy' as an autonomous system of forces rather than a feature of a particular form of social life with a particular class structure. Marx's analysis of reproduction in terms of the two departments, Mattick indicates, shows how the categories of the market lose their explanatory independence. In this context he shows the underconsumptionist explanation of economic crisis to be an untenable interpretation: effective demand is determined by capital accumulation. The schemes of reproduction then highlight the conditions for the possibility of economic crisis, along with the existence of capital as a class relation, rather than the issue of maldistribution of income or of 'disproportionality' between departments of production.

In the following paper, Patrick Murray indicates that the purpose of *Capital's* middle volume is to deepen the analysis of the double character of the commodity (use value and exchange value) of Book I and to show that what circulates in a capitalist economy is capital. In stressing that commodities in capitalism are *use values* which have the specific *social form of capital*, Murray convincingly takes distance from the view, held by Sweezy for example, that use value is irrelevant to Marx's analysis. In this perspective his main focus is to debunk the 'commerce and industry' picture of the economy in capitalist society. This picture breaks down capital's circulation into a generalized circulation of wealth whose basic forms are money and commodities, buying and selling ('commerce'), accompanying a production process which, devoid of any determining social form, simply transforms material inputs to create new wealth ('industry'). Murray points out that, oddly, this picture leaves out capital itself. In criticising it he shows how the categories of the commerce and industry picture prove conceptually too 'thin' to grasp the circulation of capital; likewise 'thicker' co-involvements of use value and

value must be acknowledged in order to comprehend capital, its turnover and reproduction, productive and unproductive labour, and fixed and circulating capital. For example the phenomenon of the material reshaping of circulatory functions (see Smith, Chapter 4 on 'lean production' delivery systems) would be unintelligible on the basis of the 'commerce and industry' picture. In an appendix, Murray shows that Ernest Mandel erred in claiming that Marx came to the conclusion that labour in 'service industries' cannot be productive because it is not 'concrete' and does not result in a free-standing product.¹⁵

The next paper, by Tony Smith, directly relates Part Two of Book II of *Capital* to recent trends in contemporary capitalism and its apologetic. Marx here derives a drive to lower circulation time and circulation costs. Analysing the move towards so-called 'lean production' in the perspective of Marx's thesis, Smith concludes that this development corroborates the theory. Next he moves on to considering lean production from another perspective of the Book II analysis. Marx argues that in the circulation process capital accumulation is the independent variable and consumer activity a dependent variable. The defenders of lean production insist that, while this indeed holds true for the era prior to 'lean production', the reverse now obtains: information technologies allow manufacturers to trace changes in consumer desires accurately; and flexible production techniques allow firms to shift production rapidly in response to new consumer demands. So, they claim, true consumer sovereignty is now being instituted for the first time; the consumer is the sun around which the lean production system turns. If this claim is warranted, Smith allows, the Marxian perspective in this respect is refuted. However, building on Marx's account in Book II of the place of consumer activity in the circulation process of capital, he argues that overcoming conflicts in the relation of capital to consumers requires a thoroughgoing social transformation far beyond the possibilities of 'lean production'.

In his own paper, Chris Arthur calls attention to the significance of the introduction of the concept of 'circuits of capital'. He examines Marx's theory of the circuits of capital outlined in Part One (chs 1-4) of Book II. He traces the form of the circuit and shows how it may be viewed as the imbrication of three circuits. On this basis he argues that capital cannot be understood as a fixed form but only as the totality of functional forms through which it passes in its circuit; that is, capital exists as the identity-in-difference of all

its functional forms, an identity established and maintained only in its movement through them. Such a view of the three circuits Marx distinguished he illuminates by outlining its background in Marx's knowledge of Hegel's *Logic*, and especially therein his theory of the syllogism which examines successively its mediation in the universal, the particular, and the individual judgments. In addition Arthur addresses a surprising feature of the recently published 1865 manuscript of Book II, namely the appearance in it of four circuits, not three.

Martha Campbell's essay examines Marx's explanation of the functions money must perform in the circulation of capital. In the first part of the paper she provides an important outline of the methodological frame of Marx's monetary theory of Book II, explaining why Marx adopts particular assumptions for his analysis (an analysis that runs in fact throughout Book II). From his analysis of turnover Marx concludes that capital must occupy all three of its forms simultaneously; although the money form is no less transient than the others, Marx demonstrates that money hoards are required by the needs of circulation, and this is the foundation of his explanation of the credit system. Capitalists transform their hoards into interest-bearing capital in order to gain an additional share of the social surplus value. As a result money capital is concentrated in banks and in the bond and stock markets. Campbell argues that, by analysing capitalist reproduction apart from the credit system, Marx shows that the possibilities for its disruption are not limited to the problems resulting from debt and the conditions of credit. In proposing that the credit system develops so that capital in its money form will bring in surplus value, Marx is rejecting the claim that it develops to solve the problem of the shortage or high cost of gold money. Campbell concludes that the credit system complicates rather than simplifies capitalist reproduction and renders it more precarious.

In Chapter 7, Fred Moseley examines Marx's reproduction schemes of Part Three of *Capital II* against the background of correspondence between Marx and Engels and the *Theories of Surplus Value*. He argues that the initial purpose of Marx's reproduction schemes was to refute Adam Smith's view that the price of the total commodity product of society is entirely resolved into wages plus profit plus rent; that is, entirely resolved into revenue with no component left to replace the constant capital consumed in production; he notes that Quesnay's *Tableau Économique* could have helped

Marx in so doing. Important to this refutation, Moseley indicates, is the distinction between money which functions as revenue and money which functions as capital. Emphasizing that Marx extensively criticised classical economics' conception of capital as merely physical means of production, common to all types of economic systems, Moseley in the course of his paper contests Sraffian, or generally neo-Ricardian, interpretations of Marx which read his analysis in physical terms.

Finally Geert Reuten's paper examines the same Part Three from the perspective of Marx's method: is it akin to a modelling approach as we find it in modern orthodox economics, or does it rather fit into a systematic-dialectics methodology? More so than any other part of Marx's work, his theory of reproduction influenced orthodox economics: it laid important foundations for its later macroeconomics and theory of the business cycle. Why particularly this text? In answering these questions the major part of Reuten's paper is devoted to an examination of the systematic character of the exposition of Marx's reproduction theory, focusing on its procedure in laying out assumptions. Reuten concludes that, while the text may not be incompatible with a systematic-dialectical methodology, it is certainly defective in that respect; rather the textual evidence favours the view that Marx, in this part, takes a particular modelling approach.

The papers brought together here show differences in historiographic and analytical emphasis and this makes them complementary studies. Certainly many questions concerning Marx's Book II of *Capital* remain unanswered, an obvious example being why dialectics can be so prominent in Part One (Arthur) while trifling in Part Three (Reuten). All the authors agree that this work is crucial in understanding the trilogy of *Capital* and its method. Without this middle book we cannot grasp the juxtaposition of the analysis in the other two.

Notes

1. Other papers from the ISMT are collected in Moseley (1993) and Moseley & Campbell, (1997); a fourth book is in progress.
2. This book of Marx, written in 1857-8, is a rough draft of *Capital* in rather dialectical style. It made an impact with the 1953 German publication and again with its much delayed 1973 English translation.
3. It was probably dropped for the second edition partly because of its absurdity as a tailpiece to the chapter on colonisation and partly

- because Marx felt embarrassed that he had not yet produced the promised book on the circulation of capital. Obviously this paragraph is also a remnant of the famous 'missing chapter' on 'the immediate results of commodity production' (included as an appendix to the 1976 English translation of Book I – compare p. 975).
4. Thus Marx indicates the *duality* of capitalist production: it is a contradictory process of producing useful objects (labour process) and at the same time of producing value and surplus value (valorization process). The latter, however, dominates the former. (See Reuten & Williams, 1989: ch. 1; and the chapter here by Murray pointing out that the 'real subsumption' of labour indeed affects the labour process and the kind of commodities being produced.)
 5. Moseley, in this volume, points out that Marx, with his Reproduction Schemes of part Three, and against Smith's 'dogma' in this respect, shows how the annual production indeed reproduces capital.
 6. See Oakley (1983: 124–5). Up to at least 1877, Marx indeed planned to redraft the latter material for a fourth book: letters to Kugelmann, 13 October 1866, to Meyer, 30 April 1867, and to Schott, 3 November 1877.
 7. However this does not excuse David Fernbach's altering Engels's preface to Volume Two without notice by changing the term 'book' to 'volume' throughout his translation of it. Incidentally, for purely external reasons, part of Engels's preface to *Capital II* gives an explanation of the uniqueness of Marx's theory of surplus value in which he clarified the point that labour as value-creating activity cannot have a value of its own; only labour-power can. Note that the 1978 English translation by D. Fernbach misses matter in this passage: 'labour-power for labour as the value-creating property' (p. 99) should read 'labour-power. By substituting labour-power for labour as the value-creating property'.
 8. A concise source in English on the various drafts for *Capital* is Oakley (1983). Evidently it deserves reconsideration on the basis of the new source material not available to Oakley.
 9. We may mention just one exception: Moggridge (biographer of Keynes and editor of his collected works) indicates that Keynes used Marx's capital circuit approach in his 1933 lectures. See Moggridge (1976: 104); Keynes (CW, XIII: 420); cf. CW, XXIX: 81–2, where Keynes writes on the same issue in the preparation of his *General Theory*.
 10. Domar in his seminal paper (1946), for example, refers to Marx. See further the papers in Horowitz (1968), Mandel (1978), Howard & King (1989) and Kurz (1995).
 11. See Kalecki (1954: ch. 3 and 1968); cf. Sawyer (1985: ch. 8). Incidentally, according to Harcourt (1982: 270), Robinson over the years came 'to prefer Kalecki's version of the central propositions of the *General Theory* to Keynes's version because they are placed in the context of Marx's schemes of reproduction and a theory of cyclical growth'. According to her account, Robinson, after reading Volume

Two, liked to tease Harrod by telling him that his growth theory was already there, in Marx's last chapter (Robinson, 1953: 17).

12. See Mandel (1978); and Howard & King (1989).
13. See, for example, Desai (1979: ch. XVII).
14. See Lange (1959: ch. 3); Jasny (1962); Stone & Stone (1977).
15. The passage criticised by Murray is in Mandel (1978). Incidentally Mandel's claim there that Marx's *Theories of Surplus Value* is inconsistent in its definitions is not true. The second quotation in Mandel's note 43 is in truth a gloss on Smith's 'second definition', namely the one under attack by Marx.

References

Note: All years in brackets are the original dates of publication as referred to in text; editions quoted from may differ and are provided where appropriate.

- Desai, Meghnad (1979) *Marxian Economics*, Basil Blackwell, Oxford.
- Domar, E.D. (1946) 'Capital expansion, rate of growth and employment', *Econometrica*, vol. 14; reprinted in A Sen (ed.), *Growth Economics*, Penguin Books, Harmondsworth, 1970.
- Harcourt, G.C. (1982) 'the Sraffian Contribution: An Evaluation', in Ian Bradley and Michael Howard (eds), *Classical and Marxian Political Economy*, Macmillan, London.
- Horowitz, David (ed.) (1968) *Marx and Modern Economics*, Monthly Review Press, New York/London.
- Howard, M.C. & J.E. King (1989) *A History of Marxian Economics, Vol. I 1883–1929; Vol. II 1929–1990*, Macmillan, London.
- Jasny, N. (1962) 'The Soviet balance of national income and the American input-output analysis', *L'industria*, no. 1: 51–7.
- Kalecki, M. (1954) *Theory of Economic Dynamics*, Augustus Kelley, New York.
- Kalecki, M. (1968) 'The Marxian Equations of Reproduction and Modern Economics', *Social Science Information*, vol. 7.
- Kurz, Heinz D. (1995). 'Marginalism, Classicism and Socialism in German-Speaking Countries 1871–1932', in I. Steedman (ed.) *Socialism and Marginalism in Economics 1870–1930*, Routledge, London/New York.
- Lange, Oscar (1959) *Introduction to Econometrics*, 2nd edn 1962, trans. from Polish by E. Lepa, Pergamon press, Oxford, 1966.
- Mandel, Ernest (1978) 'Introduction' to Marx (1885), English trans. (Fernbach), 11–79.
- Marx, Karl (1867) *Das Kapital, Kritik der politischen Ökonomie, Band 1, Der Produktionsprozess der Kapitals*; English trans. (from 4th edn 1890) Ben Fowkes, *Capital, A Critique of Political Economy, Volume One*, Penguin Books, Harmondsworth, 1976.
- Marx, Karl (1867 – 1st edn) *Das Kapital, Kritik der politischen Ökonomie, Erster Band Hamburg 1867, Marx-Engels Gesamtausgabe, Abteilung II, Band 5*, Dietz Verlag, Berlin, 1983.

- Marx, Karl (1885) ed. F. Engels, *Das Kapital, Kritik der Politischen Ökonomie, Band II, Der Zirkulationsprozess des Kapitals*, MEW, 24, Dietz Verlag, Berlin, 1972; English trans. David Fernbach, *Capital, A Critique of Political Economy, Vol. II*, Penguin Books, Harmondsworth, 1978.
- Marx, Karl (1894) ed. F. Engels, *Das Kapital, Kritik der Politischen Ökonomie, Band III, Der Gesamtprozess der kapitalistischen Produktion*, MEW, 25, Dietz Verlag, Berlin 1972; English trans. David Fernbach, *Capital, A Critique of Political Economy, Vol. III*, Penguin Books, Harmondsworth, 1981.
- Marx, Karl (1904/10) [written 1861–1863] ed. K. Kautsky, *Theorien über den Mehrwert* (1904/10); 2nd edn (1956/62) by Institut für Marxismus-Leninismus, *Theorien über den Mehrwert Teile I, II, III*, MEW, 26.1, 26.2, 26.3, Dietz Verlag, Berlin, 1965/68; English edn: *Theories of Surplus Value, part I*, ed. S. Ryazanskaya, trans. Emile Burns (1963); *Part II*, ed. and trans. S. Ryazanskaya (1968); *Part III*, ed. S.W. Ryazanskaya & Richard Dixon, trans. Jack Cohen & S.W. Ryazanskaya (1971), Lawrence & Wishart, London.
- Marx, Karl (1953) [written 1857–8] *Grundrisse; Foundations of the critique of political economy (Rough Draft)*, trans. Martin Nicolaus, Penguin Books, Harmondsworth, 1973.
- Moggridge, D.E. (1976) *Keynes*, Fontana/Collins, London.
- Moseley, Fred (ed.) (1993) *Marx's Method in 'Capital'; A Reexamination*, Humanities Press, Atlantic Highlands, NJ.
- Moseley, Fred & Martha Campbell (eds) (1997) *New Investigations of Marx's Method*, Humanities Press, Atlantic Highlands, NJ.
- Oakley, Allen (1983) *The Making of Marx's Critical Theory*, Routledge, London.
- Reuten, Geert & Michael Williams (1989) *Value-Form and the State: the tendencies of accumulation and the determination of economic policy in capitalist society*, Routledge, London/New York.
- Robinson, Joan (1953) *On Re-Reading Marx*, Students Bookshop Ltd, Cambridge.
- Sawyer, Malcolm C. (1985) *The Economics of Michal Kalecki*, Macmillan, London.
- Stone, Richard & Giovanna Stone (1961) *National Income and Expenditure*, 2nd edn 1977, Bowes, London.

2

Economic Form and Social Reproduction: on the Place of 'Book II' in Marx's Critique of Political Economy

Paul Mattick, Jr

THE TEXT

Even while honoring Engels's achievement in creating the canonical text of *Capital's* second volume out of the mass of manuscripts Marx left at his death, Maximilien Rubel remarks on 'the grave error of presenting Book II as a work fundamentally complete, with only its form requiring revision'.¹ Despite the fact that Marx worked on this material until his death, he did not succeed in developing it beyond the stage of drafts of phases of the argument, on the one hand, and quantities of illustrative material, on the other. Nevertheless we have enough to understand Marx's intentions and follow his argument.

Capital began life as 'the first book' of an examination of 'the system of bourgeois economy' in six books: 'capital, landed property, wage-labor, the State, foreign trade, world market'.² The book on capital, as an 1857 outline made clear, was itself intended to have four sections, dealing with capital in general, and then with particular forms of capital visible in competition, the credit system and share-capital.³ Postponing a more detailed discussion of what Marx meant by 'capital in general', we note that the first section, devoted to it, was conceived as having three subsections: production process of capital, circulation process of capital, and profit and

interest. In a letter to Lassalle (22 February 1858) Marx described the first of these subsections as containing 'several introductory chapters'.⁴ These were originally chapters on value and money; the former later became 'The Commodity'. They would prepare the theoretical ground for the business of the first section, the analysis of capital in general.

This 'chapter on capital' was outlined in a draft plan drawn up after the publication of the *Contribution to the Critique of Political Economy*, which contained the chapters on commodities and money. Here we find again, now elaborated in some detail, the three subsections described in the letter to Lassalle: production, circulation, capital and profit. What became Volumes II and III of *Capital*, that is, grew from material originally conceived as part of the first section of the first of six books!

As we know, the story of the next 30 years of Marx's life, with respect to his scientific authorship, is a story of continual growth of the material. By 1862, a moment when Marx imagined himself ready to publish the continuation of the *Contribution*, 'the third chapter of the first part, that is "Capital in general"',⁵ under the title *Capital*, he was already able to see the unrealizability of his grand scheme. He still hoped to complete the treatment of capital, by writing the chapters on competition and credit, but he seemed resigned to limiting himself to 'what the English call "the principles of political economy" ... "the quintessence"', which would make possible the completion by others of the 'critique of economic categories' he had undertaken.⁶

In reality, the publication of *Capital* was still six years in the future. In 1867, Marx intended that the first volume, containing the book on the production process of capital, should be swiftly followed by a second, containing the books on circulation and profit (that is, what we now know as Volumes Two and Three), together with a third on the history of economic theory. Book II (like Book III) of *Capital* was imagined as a part of an arc of thought, an element in an analysis conceived of as an 'artistic whole'.⁷ In the face of his evident tendency towards expansion, Marx saw the task facing him as one of reducing the mass of materials he had written to a volume's worth. Since he never did this, one can understand Engels's refusal to do it for him. But it is important to remember that Volume Two collects material intended for the second book of a three-book analysis of capital in general. It is not a depiction of the actual relations between firms and between firms and their employ-

ees, with regard to either use-value or price relationships. It is not 'a formal model of the capitalist system as a whole',⁸ or in particular a model of a 'normal' or 'ideal' growth path. It does not present a theory of crisis. It is an explanation of the way the many capitals that collectively bear the features of capital in general structure a dynamic system, and as such part of an account of the way the nature of this system both demonstrates and explains the scientific failure of political economy.

CAPITAL

The analysis of capital must be the starting point of Marx's critique of economic categories because this concept provides a representation of the aspect of social structure most important for Marx's goal of understanding the possibility of a revolutionary transformation of modern society. While its analysis requires an understanding of wage-labor and landed property, the other main forms of modern property (representing claims to the social product), it is the dominant category in the sense that its dynamic regulates the history of the social system as a whole. The living and working conditions of wage laborers are determined by a struggle between the employing and employed classes within limits set by the profitability requirements of capital; and the rent claimed by the owners of landed property (and analogous natural resources) is derived from the surplus labor appropriated by capital in the form of surplus value, and is thus also limited by capital's requirements.

'The specific economic form in which unpaid surplus labor is pumped out of the direct producers', Marx writes in a well-known passage in the third volume of *Capital*, 'determines the relationship of domination and servitude, as this grows directly out of production itself and flows back on it in turn as a determinant'.⁹ In capitalism that 'specific economic form' is surplus value, the increment of value newly produced over the capital invested in the production process, which forms the fund out of which are paid all claims to income other than the payment for labor power. The understanding of surplus value – of its origin and the conditions of its size – is the main accomplishment of Volume one of *Capital*.

Capital begins with the statement, 'The wealth of societies in which the capitalist mode of production prevails appears as an "immense collection of commodities"'.¹⁰ A commodity is a good

exchangeable for money. That is, it has a use-value (as a particular type of good answering a particular human need) and a strictly economic value measured by the amount of the money commodity for which it exchanges. More correctly, its having an exchange value is its exchangeability, its having a place in the social practice of the exchange of commodities serving to represent and realize the social character of the labor producing them (the fact that they are produced as elements of a social product, to be consumed by whoever is given access to it by way of the institution of market exchange). The classical political economists had already recognized that the apparent independence of commodity-owners disguised their mutual dependence as participants in a social labor process. Economic value, the representation of social labor-time as exchange-value, is the form in which the social character of productive activity appears; and, conversely, that social character can only take the form of value because there is no practice other than that of market exchange in which it can be given explicit form (as there would be in a society in which decisions about production and distribution were collectively made by its members).

Not only is the production and distribution of goods, necessary in capitalism as in any other social system for the reproduction of human life, regulated by market exchange, but the labor that produces goods for the market is itself treated as a good to be bought and sold. However, to summarize Volume One in a sentence, wealth in this society is not to be identified with commodities, or the money equivalent of commodities, as such, but with capital, value that takes the forms of money and commodities in a process by which unpaid labor-time is extracted when the employee is set to work for a time period longer than that necessary to reproduce the wage.

What political economy could not see, because of its failure to understand the historically specific character of such categories as 'capital', 'labor' and 'value' itself, was that the separation of the producers from the means of production, thus the existence of capital as the dominant social institution, is the premiss of generalized commodity exchange. It is when it becomes impossible for most people to produce the goods they need, because they do not have access to land or other means of production – that is, when their ability to work becomes labor power to be purchased by the owners of capital, money and the means of production it can buy – that the bulk of goods constituting the 'wealth of nations' become commodities. But, therefore, when labor power, with its potential

for the production of surplus labor, is purchased, 'the two people who face each other on the marketplace, in the sphere of circulation, are not just a *buyer* and a *seller*, but *capitalist* and *worker* who confront each other as *buyer* and *seller*. Their relationship as *capitalist* and *worker* is the precondition of their relationship as *buyer* and *seller*.'¹¹

The commodity is the fundamental modern form of wealth because 'as the *product of capital*' it 'can be said to contain both paid and unpaid labor'.¹² The outcome of a labor process constituted by the employment of labor power and means of production purchased as commodities by a capitalist, it represents a form of capital's existence, embodying the value expended in its production along with the surplus value created in the process. Furthermore the commodity character of the product indicates that the labor process in question, though it is localized in the activities carried on within individual capital units, is at the same time a social one. This is as true of the surplus value product as of the value that represents the reproduction of the animate and inanimate conditions of production. Conversely the treatment of social labor as the property of individuals explains (so argue the three books of *Capital* as a whole) why labor time is not representable as such in capitalism, but appears only in the form of prices shaped by the competitive struggle of capitalist firms for shares of the social surplus.¹³

Both aspects of the phenomenon are crucial to an understanding of the social system: the commodity form that structures economic transactions, and the social class relation presupposed and reproduced by those transactions. For this reason, the analysis of capital cannot conclude with the revelation of the class relation that had been rendered nearly invisible by the economists' description of the economic system as structured by commodity exchange. This would be to fail to give its due to 'the specific economic form in which unpaid surplus labor is pumped out of the direct producers' and would therefore conflict with the aim of Marx's work, to provide both a description of capitalist society and a critique of its self-understanding.

'Capital exists and can only exist as many capitals, hence its own character appears as their reciprocal action on each other', Marx explains in the *Grundrisse*.¹⁴ The problem of describing a social system in which the relations between entities (persons and firms) have the form of commodity exchanges, so that the limits set on individual

economic decision-making by conditions characterizing the system as a whole appear in the form of price-determined supply and demand conditions, is solved in Volume One of *Capital* by the device of representing individual capitals by the characteristics they all share, 'determinations which are common to every capital as such, or which make any particular sum of values into capital'.¹⁵

This is 'capital in general', by which Marx meant, in the first place, 'the general nature of capital', as opposed to the (relatively) 'concrete forms of capitalist production' that would have been studied in the sections of his work to come on 'the credit system and competition on the world market'¹⁶ (together with a study of share-capital as a 'transition to socialism'). This concept abstracts from features differentiating capitals – with respect to use-value, the various products and methods of production; with respect to value, differing proportions of variable to constant capital and differing turnover times; with respect to competitive position, degrees and forms of monopoly and oligopoly. More particularly 'capital in general' designates what in Volume Two Marx distinguishes as industrial capital, in contrast to commodity and money capital. This is brought out by the analysis of the circuit of capital value that constitutes Part One of Volume Two.

The 'general formula for capital' examined in Chapter 4 of the first volume of *Capital* has the form $M-C-M$: a sum of money (M) is exchanged for commodities (C) in turn exchanged for money. More accurately, it is $M-C-M'$, a circuit of value leading to an increase in money (M'), without which the process would lack a point. As Marx argues (in Chapter 5, 'Contradictions in the General Formula'), the increase of value can only be explained in terms of the surplus value added by wage laborers in the production process. Thus the General Formula must be expanded to the form studied in Volume Two: $M-C (LP + MP) \dots P \dots C'-M'$. Here the initial conversion of money into labor power (LP) and means of production (MP) makes possible the creation of a surplus value in the production process (P), realized when the product is sold.

Since the production of value and surplus value, their realization through market exchange, and their reinvestment in another round of production are (when all goes well for capital) a continuous process, the circuit of capital can be usefully examined, Marx shows, as a cycle starting from any of its three formally distinct elements, M , C and P . What this makes clear is that the circuit of value through all three forms is necessary to the existence of capital, as

opposed to the simple existence of money or commodities, which have existed (as well, of course, as production) in non-capitalist societies. 'The capital that assumes these forms in the course of its total circuit, discards them again and fulfills in each of them its appropriate function, is *industrial capital* – industrial here in the sense that it encompasses every branch of production that is pursued on a capitalist basis'.¹⁷ Industrial capital must move through the money and commodity forms. Given its existence, however, firms can specialize in the advancing of money or the selling of commodity products, in exchange for a portion of the surplus value generated by an industrial concern. 'Money capital and commodity capital, in so far as they appear and function as bearers of their own peculiar branches of business alongside industrial capital, are now only modes of existence of the various functional forms that industrial capital constantly assumes and discards within the circulation sphere, forms which have been rendered independent and one-sidedly extended through the social division of labor'.¹⁸ Thus only industrial capital can provide the form of capital in general, of the necessary features of capital as a social relation of production and distribution.

But the concept of capital in general points beyond a catalogue of shared features, to the sense of 'a *real* existence *distinct* from particular real capitals',¹⁹ that is, of the total social capital as an actual quantity of value and set of social relationships. To begin with, the social capital can be considered as constituted by 'the totality of the movements of [its] autonomous fractions, the [circuits] of the individual capitals'.²⁰ This totality is not simply a sum: 'the circuits of the individual capitals are interlinked, they presuppose one another and condition one another, and it is precisely by being linked in this way that they constitute the movement of the total social capital'.²¹ Money advanced in one industry purchases means of production from another, while the workers employed buy their means of existence from yet other firms.

The unity of the social capital has a reality beyond the interaction of individual firms; it is visible in the money form that all capitals periodically take on, and that makes it possible for capital to flow from one sphere of investment to another. The value given form in money, as already noted, is a representation of the productive labor of society as a whole. Thus the connection between capital conceptualized as a set of common features and the social capital as unitary entity may be seen in the necessity of considering the

system as a whole – in the form of ‘capital in general’ – in order to understand the nature of value and the origin of surplus value. Conversely the social capital’s magnitude in value terms, and the magnitude of the total surplus value produced collectively by its constituent parts, together with its character as a set of particular use-values, set the conditions of decision-making imposed on each firm as an exemplar of capital in general. Marx brings this out in Volume Two by reference to the effects on individual capitals of the changes in value conditions brought about by capital movements between spheres of investment and alterations in the labor process:

The movements of capital appear as actions of the individual industrial capitalist in so far as he functions as buyer of commodities and labor, seller of commodities and productive capitalist, and thus mediates the circuit [of value functioning as capital] by his own activity. If the social capital value suffers a revolution in value, it can come about that his individual capital succumbs to this and is destroyed, because it cannot meet the conditions of this movement of value.²²

Again what defines capital as a class concept is that the competitive struggle among capitals for shares of surplus value is the form in which they individually experience the social character of the exploitation process, the fact that in a system structured by commodity exchange the extraction of surplus labor takes place between capital and wage-labor as social totalities.

In Book III, in which Marx’s concern is ‘to discover and present the concrete forms which grow out of the *process of capital’s movement considered as a whole*’ made up of alternating episodes of production and commodity exchange, the ‘configurations of capital ... approach step by step the form in which they appear on the surface of society, in the action of different capitals on one another, i.e. in competition, and in the everyday consciousness of the agents of production themselves.’²³ Book II lays its part of the groundwork for this analysis by developing a description of ‘the process of capital’s movement considered as a whole’ – as social capital – on the basis of the highly abstract representation of capital in general achieved in Book I.

This is accomplished by a reinvestigation of the process of commodity exchange with which the first volume opened, but now on

the basis of an understanding of commodities as the products of capitals. ‘And in this respect,’ Marx wrote in the manuscript originally intended as the final, transitional chapter of Book I, ‘their circulation, which is simultaneously the reproduction process of capital, entails further determinations alien to the abstract description of the circulation of commodities’ (most importantly, the concept of turnover time – the total time required for production, sale of the product, purchase of new elements of production, and renewed productive activity – which sets limits to the amount of surplus-value producible by a given quantity of capital). Marx thus concluded what was originally intended to be the final chapter of Book I with the thought that ‘our next task is to turn to an examination of the *circulation process of capital*’.²⁴

CIRCULATION AND REPRODUCTION

Having devoted Book I to the revelation of the class relation obscured from view by the market relations structuring economic activity, Marx turns in Book II to the way in which the social class system is constituted by way of those same market relations. An interesting manuscript variant opening of this book, not utilized by Engels for his edition, presents a parallel to the opening of Volume One (as well as a link to its manuscript conclusion): ‘The immediate result of the process of capitalist production is a *mass of commodities*’.²⁵ As products of capital, these commodities are intended for sale, transformation into money. To continue to function as capital, that money (which, if all has gone well, includes an increment over the initial investment) must be reinvested in the elements of production, which must be set to work in the creation of new value- and surplus value-bearing commodities. Where the *circulation of commodities*, with which Book I began, implies relations among buyers and sellers, or producers and consumers, the *circulation of capital* in the commodity form implies relations between capitals, on the one hand, and capital and the owners of labor power, on the other. It thus clarifies the connection between the class character of modern society and the relations among the capitals that constitute capital in general.

Circulation is, according to Marx, the ‘first totality among economic categories’, since it provides the forms for the interaction of all economic units. That interaction has a particular character. ‘The

totality of the social process, circulation is also the first form in which not only the social relation – as is the case with a coin or with exchange-value – but also the movement of society itself can be seen as a fact independent of individuals.²⁶ The transformation of produced commodities into money requires an effective demand for those commodities; the retransformation – on a larger scale – of this money into the elements of production presupposes the existence of the requisite means and materials of production, on the one hand, and of a sufficient quantity of labor power (embodied in workers), on the other.

It is this role of circulation in the social reproduction process that gives rise to the idea of 'the economy' as an autonomous system of forces, to be studied by a science of economics. Though the individual exchanges that constitute circulation 'originate from the conscious will and particular purposes of individuals', wrote Marx in the *Grundrisse*, 'nevertheless the totality of the process appears as an objective relationship arising spontaneously; a relationship which results from the interaction of conscious individuals, but which is neither part of their consciousness nor as a whole subsumed under them'.²⁷ The economy, experienced – in the absence of any conscious social regulation of production – as a set of constraints independent of individual wills, seems a general condition of human existence rather than a feature of a particular form of social life.

The social capital, constituted by the interlinked circuits of individual capitals, cannot be conceptualized simply as a quantity of value expanded (if all goes well) by embodiment, in turn, in money, the factors of the production process, the product of that process, and money again. The social totality has a class structure. The surplus value whose appropriation means that a sum of value has functioned successfully as capital is the economic representation of surplus labor performed by wage-laborers, and is measured by the excess of the value of their product over the value of their labor power, itself equivalent to that of the commodities needed for their personal reproduction. Of the commodity factors of production, one, means of production, is the property of capital, the other, labor power, is the property of labor. The employment of these elements in a new round of production, again on a larger scale than the first round, brings to the fore the class relation of exploitation, in which the worker's activity of today makes possible the expansion of the scale of that activity tomorrow. The overall dominance of capital in

the system shows up in the fact that in both cases purchase and sale is ultimately a relation between capitals, for in the case of the purchase of labor power, the wage flows through the worker's hands to the capitalist producer of means of consumption.

Considered without regard for its historical specificity, as an example of ongoing social life, the reproduction of this social totality is (like that of every other) a matter of producers' transformation of raw materials into culturally determined forms of use-value. Considered with regard to its specifically capitalist form, this reproduction process is organized by a relation between capitals producing production goods and those producing consumption goods. Here we see the dual nature of the commodity, as use-value and exchange-value, reappearing in the dual character of social reproduction as a renewal of both the physical requirements of life and value relations.²⁸ The physical requirements – means of production and consumption – are produced as commodities, products of capitals. Hence social reproduction takes the economic form of an interaction between what Marx calls two departments of capital, in which the actual producers figure only as an element of the productive form of capital.

Class is thus reproduced by way of commodity-exchange relations. Paradoxically, in consequence of this, the categories of the market with which Marx's investigation began lose their independence as explanatory of the state of the social system at any time. For Marx's analysis of social reproduction in terms of the two departments of capital demonstrates that market categories are just, as he might say in an Hegelian moment, forms of appearance of capital. This must be the case since, as Marx observes, 'the circuits of the individual capitals ... when considered as combined into the social capital, i.e. considered in their totality, do not encompass just the circulation of capital, but also commodity circulation in general'.²⁹ The circulation of commodities is the circulation of capital.

The demand for means of production is obviously equal to that portion of capital investment set aside for this purpose. But the workers' demand for consumption goods is also equal to a portion of capital, namely the variable capital that purchases labor power.

In so far as the capitalist simply personifies industrial capital, his own demand consists simply in the demand for means of production and labor-power. ... In so far as the worker converts his

wages almost wholly into means of subsistence ... the capitalist's demand for labor-power is indirectly also a demand for the means of consumption that enter into the consumption of the working class.³⁰

Finally the demand for luxury goods is equal to that amount of surplus value not accumulated as capital but devoted to capitalist consumption. Thus demand is constituted entirely by the value of the product of capital, as successfully realized in exchange and then reinvested or spent for capitalists' consumption; its growth is therefore determined by the rate of profit of the social capital and the conditions determining that profit's reinvestment.

One important consequence of this is the untenability of under-consumption explanations of economic crisis. As Marx observes, 'it is a pure tautology to say that crises are provoked by a lack of effective demand or effective consumption'.³¹ The important question is, rather, what determines effective demand, and the answer to this must be capital accumulation, itself limited by the profitability of capital. It follows from this – and this is a point of great significance – that economic crisis raises, not the issue of a maldistribution of income (to be overcome by some redistributive mechanism), but that of the existence of capital as a class relation.

A related matter is the misunderstanding, shared by various distinguished commentators on Marx's work, that Marx intended the reproduction schemes that are the centerpiece of the third part of Volume Two to model equilibrium conditions for capitalism, so that major crises of accumulation could be explained as due to divergences from the paths they represent.³² For one thing, Marx's schemes cannot depict the exchange relations constituting the actual circulation of commodities, since these relations are defined in price terms, not the value terms utilized in the schemes.³³ For another, Marx assumes no tendency on the part of the economic system towards interdepartmental (or any other) equilibrium: in his view, the 'conditions for the normal course of reproduction, whether simple or on an expanded scale' represented by the reproduction schemes 'turn into an equal number of conditions for an abnormal course, possibilities of crisis, since, on the basis of the spontaneous pattern of this production, this balance [between departments in the schemes] is itself an accident'.³⁴

By 'crisis' Marx means here what elsewhere he calls 'particular crises (*particular* in their content and extent)' in which 'the eruptions are only sporadic, isolated, and one-sided', in contrast with 'world market crises', in which 'all the contradictions of bourgeois production erupt collectively'.³⁵ In a system in which goods are produced as commodities offered for sale by individual capitals, 'too much may be produced in individual spheres and *therefore* too little in others; partial crises can thus arise from disproportionate production (proportionate production is, however, always only the result of disproportionate production on the basis of competition)'.³⁶ Interdepartmental disproportionalities, like economic disequilibria generally, are normal to capitalist reproduction. As Paul Mattick explains, because such disproportionalities, like maldistributions of capital among branches of production generally,

can also in turn be overcome by way of these same crises, the process of reproduction can be represented [in the schemes] as crisis free, just as an equilibrium of supply and demand, which in real life does not exist, can be imagined. Crises of this kind, arising exclusively from the disproportionalities of the system, are only an expression of the anarchy of capitalism and not of the exploitative character of the relations of production that underlie this anarchy; they are resolved, therefore, by the redistribution of surplus value, without the production of additional surplus value.³⁷

To explain 'world market crises', the system-wide economic convulsions in which the duality of use-value and value becomes visible in the form of a conflict between human needs and the demands of capital accumulation, calls in contrast for an analysis focusing on the conditions of surplus-value production (treated in Volume One) and the relations between surplus value produced and the quantity required for accumulation (discussed in Volume Three).

The function of the reproduction schemes, as of the argument in Volume Two generally, is to demonstrate how the economic forms of value (and so surplus value) condition the reproduction of society as the organization of the human production and consumption of use-values. In this way Book II of *Capital* opens the way to the investigation carried out in Book III of the rate of profit as determinant of accumulation and so of crisis.

Notes

1. M. Rubel (ed.), *Oeuvres de Karl Marx. Economie*, Vol. II (Paris: Gallimard/Pleiade, 1968), pp. 501–2. See also the discussion of Engels as editor on pp. cxixff. The same goes for Volume III of *Capital*, of course; this error can be seen, for instance, in Rosdolsky's description of Engels's edition of that book as 'the final version of Marx's work' (R. Rosdolsky, *The Making of Marx's 'Capital'*, Pluto, London, 1977, p. 40).
2. K. Marx, *Contribution to the Critique of Political Economy* (1859), in Karl Marx and Frederick Engels, *Collected Works* (henceforth MECW), vol. 29, International Publishers, New York, 1987, p. 261.
3. See the outline in the introduction to the *Grundrisse* (which still includes as a planned first section a general introduction, later dropped): Karl Marx, 'Outlines of the Critique of Political Economy (Rough Draft of 1857–58)', MECW, vol. 28, International Publishers, New York, 1986, p. 45.
4. K. Marx and F. Engels, *Letters on 'Capital'*, trans. A. Drummond, New Park, London, 1983, p. 51.
5. Marx to Kugelmann, 20 December 1862, in Marx and Engels, *Letters*, p. 80.
6. *Ibid.*, pp. 80–81; 'Critique of economic categories', Marx to Lassalle, 22 February 1858, Marx and Engels, *Letters*, p. 51; see my 'Theory as Critique: On the Argument in *Capital*', in Fred Moseley and Martha Campbell (eds), *New Investigations of Marx's Method*, Humanities Press, Atlantic Highlands, 1997.
7. See Marx's letter to Engels, 31 July 1865, in Marx and Engels, *Letters*, p. 96.
8. Duncan K. Foley, *Understanding Capital. Marx's Economic Theory*, Harvard University Press, Cambridge, Mass., 1986, p. 89. Foley is cited here only as a recent and prominent representative of a common misunderstanding among economists. For a critique of a similar misconception on the part of Ernest Mandel, see Paul Mattick, *Economic Crisis and Crisis Theory*, M.E. Sharpe, White Plains, 1981, pp. 175ff.
9. K. Marx, *Capital*, Vol. III, trans. David Fernbach, Penguin, Harmondsworth, 1981, p. 927.
10. K. Marx, *Capital*, Vol. I, trans. Ben Fowkes, Penguin, Harmondsworth, 1976, p. 125, quoting the opening of the *Contribution*.
11. K. Marx, 'Results of the Immediate Process of Production', in *Capital*, Vol. I, p. 1015.
12. K. Marx, 'Results', p. 954.
13. 'It is the connection between class structure and the organization of the process of social reproduction that explains the puzzles of value: why social labor is representable not as such but only in the form of quantities of money, and why nevertheless money prices are not equal to labor-time contents' (P. Mattick, Jr, 'Some Aspects of the Value-Price Problem', *International Journal of Political Economy*, vol. 21

- (1991–92) no. 4, p. 42; see this essay as a whole for a detailed discussion of this matter).
14. K. Marx, 'Outlines', p. 341; 'appears' here has the same significance as in the first sentence of Volume One of *Capital*: it signals the form in which a social reality is represented in the categories of economic thought and action. Marx uses the word in its Hegelian sense: appearance is not illusion. Capitalists (and those who deal with them) experience real systemic constraints on their activities in the form of the activities of other capitalists, just as it is only in this form that these constraints make themselves felt.
15. *Ibid.*, p. 378.
16. K. Marx, *Capital*, Vol. III, p. 205.
17. Karl Marx, *Capital*, Vol. II, trans. David Fernbach, Penguin, Harmondsworth, 1978, p. 133.
18. *Ibid.*, p. 136.
19. K. Marx, 'Outlines', p. 378.
20. K. Marx, *Capital*, Vol. II, p. 427.
21. *Ibid.*, p. 429.
22. K. Marx, *Capital*, Vol. II, p. 185.
23. K. Marx, *Capital*, Vol. III, p. 117.
24. K. Marx, 'Results', p. 975.
25. I translate, in the absence of access to the original, from the French translation in M. Rubel (ed.), *Oeuvres*, Vol. II, p. 509. Compare *Capital*, Vol. I, p. 125: 'The wealth of societies in which the capitalist mode of production prevails appears as an "immense collection of commodities"; the individual commodity appears as its elementary form'; and 'Results': 'The result of the process [of capitalist production] is not individual goods, but a *mass of commodities* ... each one of which is the incarnation of both the value of the *capital* and of the surplus-value it has produced' (*ibid.*, p. 954).
26. M. Rubel (ed.), *Oeuvres*, Vol. II, p. 506. Marx observes that this was already noted by Quesnay, in whose *Tableau Économique* 'The numberless individual acts of circulation are ... immediately grouped together in their characteristic social movement as a mass circulation between major economic classes of society that are defined by their function' (*Capital*, Vol. II, p. 435).
27. K. Marx, 'Outlines', pp. 131–2.
28. See K. Marx, *Capital*, Vol. II, p. 470.
29. *Ibid.*, p. 428.
30. *Ibid.*, p. 197.
31. *Ibid.*, p. 486.
32. Partisans of disproportionality explanations of crisis, from Tugan-Baranowski and Rudolf Hilferding to Roman Rosdolsky and Ernest Mandel, should join the builders of equilibrium growth models in pondering Marx's assertion that 'Capital is just as much the constant positing of, as it is the constant transcendence of, proportionate production. The existing proportions must constantly be transcended through the creation of surplus values and the increase of productive forces. But to demand that production should be expanded

- instantaneously, simultaneously, and in the same proportions, is to impose external demands on capital, which in no way correspond to anything arising from capital itself' ('Outlines', p. 341). For a critique of underconsumption and disproportionality readings of Marx's crisis theory, see Paul Mattick, *Economic Crisis and Crisis Theory*, ch. 3.
33. Nor have the reproduction schemes any relevance – as they have been thought to have by critics of Marx who understand them as depictions of equilibrium conditions – to the problem of the 'transformation of values into prices' discussed in Vol. III. See P. Mattick, Jr, 'Some Aspects', pp. 55–6.
34. K. Marx, *Capital*, Vol. II, p. 571. See also the manuscript 'Theories of Surplus Value' (Karl Marx, *Economic Manuscript of 1861–63*, MECW, Vol. 32, International Publishers, New York, 1989, p. 124): 'all equalizations are *accidental* and although the proportion of capital employed in individual spheres is equalized by a continuous process, the continuity of this process itself equally presupposes the constant disproportion which it has continuously, often violently, to even out'.
35. K. Marx, 'Theories of Surplus Value', p. 163.
36. *Ibid.*, p. 150.
37. P. Mattick, *Economic Crisis and Crisis Theory*, pp. 101–2.

3

Beyond the 'Commerce and Industry' Picture of Capital

Patrick Murray

Marx's goal in Volume Two of *Capital* is to show that what circulates in a capitalist economy is *capital* and to flesh out the consequences. This is a taller order than it might seem, just because the pitfalls in getting to know capital are so many. A natural way of looking at the production and distribution of wealth in a capitalist society is to break it down into a generalized circulation of wealth whose basic forms are money and commodities, buying and selling, accompanying a process of production that, without any determining social form, simply transforms material inputs to create new wealth. This pictures a *capitalist* economy as a *commercial* and *industrial* one. Oddly the picture excludes capital itself, for capital is not simply commodities, money or the use-values needed for production (raw materials, labor, instruments of production). It does not belong to the nature of any of those to produce surplus value (profits, rents, interest), yet bearing surplus value is what defines capital.¹

In this middle volume Marx deepens *Capital's* initial analysis of the double character of the commodity (as a use-value having an exchange value) to reveal and investigate the consequences of this fact: commodities in capitalism are use-values which have the specific social form of *capital*. Capitalistically produced commodities do not have simply an exchange value; their sale realizes surplus value. They are *commodity capital*, and this makes a world of difference. Similarly money used to purchase the elements of capitalist production processes functions as *money capital*, and the easily neglected role of money capital in the circulation of industrial capital is closely examined. Finally the purchased elements of capitalist production (means, materials, and labor power) are

recognized to exist in the form of *productive capital*. To call things what they are is a demand of science Marx heeds.

A capitalist economy is necessarily a commercial one (that is, one where wealth generally takes the commodity form), but the much more revealing and complex truths Volume Two exposes are (1) that, in capitalism, all commercial transactions are, as a rule, caught up in the circuits of capital and (2) that a commercial economy is a capitalist one: there is no generalized commodity circulation apart from the circulation of capital. Regarding the first point, Marx writes: 'The circuits of the individual capitals, therefore, when considered as combined into the social capital, i.e. considered in their totality do not encompass just the circulation of capital, but also commodity circulation in general' (428).² Where commodity circulation is generalized, as a rule, commodity exchanges involve capital in the form of money capital or commodity capital (or both); nonetheless Marx insists (a) on the assumption that all commodity exchanges are governed by the rules of simple commodity circulation – equal values are freely exchanged – and (b) that the same exchange may belong to the circulation of capital for one bargainer but to simple commodity exchange for the other, as when a capitalist purchases labor power or when a capitalist sells consumption goods to either a capitalist or a wage-laborer.

Regarding the second, more telltale point, Marx states, 'It is only on the basis of capitalist production that commodity production appears as the normal, prevailing character of production' (117). The whole examination of generalized commodity circulation and the forms proper to it, then, must be seen as describing certain *aspects* of the actual phenomenon, namely, the circulation of capital, not an independent, free-standing phenomenon called 'generalized commodity circulation'. Herein lies the hinge of Marx's deep critique of liberalism as the one-sided appreciation of capitalism's cheery and egalitarian commercial face.

The comforting but shortsighted 'commerce and industry' picture of capital's circulation is bound up with a blunder made in reading *Capital*, which is to think that use-value drops out of sight in *Capital* after the first page or two, once Marx has ascertained that a commodity both is a use-value and has an exchange value. According to that view (held by Paul Sweezy and many others), once Marx dispatches the topic of use-value with a handful of banal opening remarks,³ he turns his full attention to the social forms distinctive to capitalism, that is, the value forms. And there

use-value purportedly becomes irrelevant. Roman Rosdolsky debunked this error,⁴ but it dies hard⁵ and the full scope of its debilitating effects needs to be made known. For holding that view blocks efforts to learn what the distinctive social forms of capitalism, that is the value forms, are and to recognize their powers; it makes Marx's critique of capitalism either invisible or unintelligible.

In fact, use-value considerations never drop out of *Capital*, though, where they come into play, it is due to their involvement with specifically capitalist social forms, the value forms. This occurs in two ways: (1) when use-value factors enter into the make-up of a social form proper to capitalism – as they always do – and (2) when capitalist forms determine use-values not just formally but materially, which is what 'real', in contrast to 'formal', subsumption under capital involves.

The fundamental case of the *first type* is the capital form itself. The use-value characteristics of what commodity exchangers bring to market, whether means or materials of production, labor power or consumption goods, are irrelevant in so far as market participants act simply as buyers and sellers. But they matter to the capital form: unless workers are separated from the means and materials of production, the indispensable use-value for industrial capital, labor power, is missing from the marketplace. Here, in the determination of the capital form, class division enters simultaneously with specific use-value factors. Use-value factors enter into the determination of several other of the most important categories explored in Volume Two: productive and unproductive labor, fixed and circulating capital (in contrast to the more fundamental pair, constant and variable capital), industrial capital's turnover time and the two 'departments' of production (means of production and means of consumption) that structure Marx's account of the reproduction of the total social capital.

If capital presupposes a class division of specific use-values such that the means and materials of production are in the hands of the capitalist class, its reproduction requires that the circulation of capital renew this class division of specific resources. With his 'reproduction schemes' in Part Three, Marx demonstrates how capital accomplishes this by showing the way the yearly product of Department II (means of consumption) is divided between the wage-laborers and capitalists, while the entire product of Department I (means of production) circles back to the capitalist

class. This nicely rounds out Volume Two's exposition of the use-value factors constitutive of capital.

Marx's insistence on simultaneously addressing the material (use-value) and formal (value) dimensions of the circulation of capital stems from the fundamental observation that underlies his 'historical materialism': 'All production is appropriation of nature on the part of an individual within and through a specific form of society.'⁶ Marx is a materialist who believes in the reality and power of social forms.

Real subsumption is all about the power of capitalist social forms *materially* to reshape wealth and its production. Attending to this phenomenon – which is unrecognizable on the assumption that use-value considerations immediately drop out of the investigation of capital – highlights the pertinence of Volume Two today. The concept of the real subsumption of processes involved in industrial capital's turnover establishes the proper horizon for explaining the tendencies behind a variety of current trends, such as 'lean' and 'just-in-time' production, electronic financial transactions or new direct marketing schemes, that are attracting attention under headings such as 'post-Fordism' or 'flexible accumulation'.⁷ And attending to phenomena of real subsumption reveals important historical dynamics to capitalist development that may put pressures on capitalism's capacity to reproduce itself over the long run.⁸

PICTURING CAPITAL'S CIRCULATION WITHOUT CAPITAL

Volume Two of *Capital* tracks the turnover of industrial capital, first considering individual capitals and then, in Part Three, the total social capital. Marx emphasizes how different and more complex a task this is than the examination of simple commodity circulation that he undertook in Chapter 3 of Volume One: 'The way in which the various components of the total social capital, of which the individual capitals are only independently functioning components, alternately replace one another in the circulation process – both with respect to capital and to surplus-value – is thus not the result of the simple intertwining of the metamorphoses that occurs in commodity circulation, and which the acts of capital circulation have in common with all other processes of commodity circulation, but rather requires a different mode of investigation' (194). How use-

value figures in the analysis of the circulation of the total social capital is one crucial difference.

Part One paves the way by examining 'The Metamorphoses of Capital and Their Circuits'. Its purpose is properly to determine *what capital is* while dispelling misconceptions that capital is any one of these: commodities, money, or means and materials of production united with living labor. Simply to identify capital with commodities or with money is wrongly to reduce an internally more complex value form (capital) to value forms proper to simple commodity circulation. To identify capital with means and materials of production united with living labor is utterly to fail to recognize capital for what it is – not a thing, and not a historical constant, but a bizarre and astoundingly powerful (asocial) social form of wealth turned 'automatic subject': 'Capital, as self-valorizing value, does not just comprise class relations, a definite social character that depends on the existence of labor as wage-labor. It is a movement, a circulatory process through different stages, which itself in turn includes three different forms of the circulatory process. Hence it can only be grasped as a movement, and not as a static thing' (185). The circulation of capital involves not simply a flow of materials but metamorphoses, *a flow of forms*. In the necessity of the metamorphoses of capital from money to the elements of production, to commodities, and back to money, further consequences of the value-form analysis from Chapter 1 of *Capital* are unfurled.

Marx's presentation of the three different forms that industrial capital necessarily takes on and casts off, money capital, productive capital and commodity capital, along with the three corresponding circuits, is intended (1) to demonstrate – in good Hegelian fashion – the dialectical unity of the three forms and circuits (which is to say it shows that each form and each circuit is an abstraction from the *actual* circulation of industrial capital) and (2) to expose the peculiarities of (industrial) capital which naturally give rise to misinterpretations that one-sidedly fixate on one or the other of its necessary forms and circuits. Indeed, toward the end of his treatment of each of the three forms and corresponding circuits, Marx matches each with one or another school of political economy that fixates on that particular form and circuit: money capital with the monetary system and mercantilism,⁹ productive capital with classical political economy, and commodity capital with Quesnay's physiocratic *Tableau économique*.¹⁰

The root of (industrial) capital's peculiarities, and in particular of the necessity for the three forms and three circuits, lies in the value form itself, that oddly asocial social form. Thus, in Volume One, Marx had already begun laying the groundwork for his criticism of the 'commerce and industry' picture of capital's circulation when he identified the failure of classical political economy to attend to the *form* (as opposed to the magnitude) of value as 'one of its chief failings'.¹¹ Marx examined the value form in the first chapter of *Capital*, concluding that value is the residue of the social form of labor in capitalism and that value's peculiar nature is to be (1) asocial in just the sense made famous by Adam Smith's metaphor of the 'invisible hand'; that is, the value-producing labor process is governed by the blind nexus of self-interested parties to 'the great scramble' of the market and (2) necessarily expressed as exchange value, as a thing, money.¹² The uncanny consequence of (1) and (2) is that the capitalist production process appears to lack a social form; it appears to be mere 'industry', to which 'commerce' is merely a handy supplement. 'Commerce' can only supplement 'industry' because there is nothing about 'industry' to necessitate money and 'commerce'. By contrast, Marx argues that the capitalist production process does have a determinate social form, value, which, as it cannot appear itself – what does the residue of 'socially necessary abstract labor' look like? – must appear as money.

These oddities of the value form create a situation more baffling than that presented by a ventriloquist, for, while the ventriloquist appears not to be speaking, just as the capitalist production process appears not to have a social form, at least what is 'thrown' by a ventriloquist is recognizable as a voice. But who would identify what is 'thrown' by value, a bare thing, money, as a social form? Nevertheless money talks.

In Volume Two, Marx identifies how the value form shapes the circulation of (industrial) capital so as to make the 'commerce and industry' picture naturally appealing:

As a specific and distinct form or mode of existence that corresponds to the particular functions of industrial capital, money capital can perform only money functions, and commodity capital only commodity functions; the distinction between them is simply that between money and commodity. In the same way, industrial capital in its form as productive capital can consist only of the same elements as those of any other labor process that

fashions products: on the one hand the objective conditions of labor (means of production), on the other productively (purposively) active labor-power. As industrial capital within the sphere of production can exist only in the combination corresponding to the production process in general, and thus also to the non-capitalist production process, so it can exist in the sphere of circulation only in the two forms of commodity and money that correspond to this. (161)

Owing to the value form, industrial capital necessarily takes the forms of money which, in so far as it is money, behaves no differently than money generally does in commodity circulation; of commodities which, in so far as they are commodities, behave no differently than commodities generally do in commodity circulation; and of means of production joined with active labor power, which is just what is generally the case in a production process – but with no sign of a distinctive social form governing that process. The capitalist production process thus appears to be 'disembedded' (in Karl Polanyi's terminology) from any specific social form or corporate conception of the good, though this appearance is only a *trompe l'oeil* caused by the actual social form of production (value) and its organization around the peculiar and coercive collective 'good' of capital accumulation. Thus, owing to the oddities of the value form, the circulation of industrial capital does offer footholds for the multiple errors of political economy and common sense that involve slurring the distinctions between money and money capital, commodities and commodity capital, the production process in general and the capitalist production process. Capital naturally casts the 'commerce and industry' shadowgraph.

Before considering how these natural misperceptions of capitalism rely on and reinforce the blunder about the role of use-value considerations mentioned earlier, we now probe the 'industry' side of the 'commerce and industry' picture by elaborating on a match alluded to earlier: 'The circuit of productive capital is the form in which the classical economists have considered the circuit of industrial capital' (166). This is to pursue the topic, just noted, of slurring differences between the production process taken in abstraction from any determinate social form – the mere general abstraction that we have been marking with the term 'industry' – and the actual capitalist production process (which is governed by definite social forms, the value forms).¹³

In the middle of the chapter on the circuit of commodity capital, Marx returns to this identification of classical political economy with the circuit of productive capital and begins to fill in the picture for us:

The general form of the movement $P \dots P'$ is the form of reproduction, and does not indicate, as does $M \dots M'$, that valorization is the purpose of the process. For this reason, classical economics found it all the more easy to ignore the specifically capitalist form of the production process [that is, to treat capitalist production merely as 'industry'], and to present production as such as the purpose of the process – to produce as much and as cheaply as possible, and to exchange the product for as many other products as possible, partly for the repetition of production ($M-C$), partly for consumption ($m-c$). In this connection, since M and m appear here only as evanescent means of circulation, the peculiarities of both money and money capital could be overlooked, the whole process then appearing simple and natural, i.e. possessing the naturalness of shallow rationalism [*flachen Rationalismus*]. (172)¹⁴

Fixating on the circuit $P \dots P'$, in which the roles of money and even the commodity as determinate social forms appear to be matters of mere expediency, stiffened the classical political economists' disposition, one shared by its important critic and forerunner of neoclassical economics, Samuel Bailey, to play down the significance of the commodity and money forms, thereby making their failure to grasp the nature of the value form more intractable. Oblivious to the necessity of money's role as the manifestation of the peculiar, asocial social form of capitalist production, value, they naturally enough pictured production as devoid of any particular social form, hence as a 'simple and natural' process: 'industry' churning out 'wealth'.¹⁵

That picture of the capitalist production process as 'industry' pumping out 'wealth', suggested by the title of Adam Smith's masterpiece, *The Wealth of Nations*, deserves a few comments. First, the celebration of 'industry' and 'wealth' is an expression of what may be called 'wealth fetishism' or 'wealthism', inasmuch as it declares the endless spurting of contextless 'wealth', that is, use-values purportedly lacking any definite social form traceable to the production process (such as the gift, commodity or commodity capital form), to be the purpose of production. By contrast, in Book I of the *Politics*, Aristotle observed that true wealth is limited, making the

point that nothing should count as wealth but what contributes to the attainment of some identifiable human good, which inescapably stands in relation to the good of the *polis*.¹⁶ Second, the fiction of 'wealth' operative here is itself a by-product of the value form, which displaces the appearance of social form into a thing, money. Third, though 'wealthism' is a by-product of the value forms constitutive of the capitalist mode of production, the notion that what drives capitalism is the restless desire to accumulate 'wealth' is a falsehood stemming from the incapacity of common sense and various economic theories to recognize the actual social forms ruling capitalism. For it is the uncanny impulsion to accumulate surplus value, not 'wealth', that keeps capital's heart throbbing.¹⁷ Finally 'wealthism' paints a conveniently false picture of the reality of capitalism; it gives capitalism a thin but tolerable tale to tell about itself:¹⁸ to speak with the French,¹⁹ it provides a 'meta-narrative' of material progress that is only an 'alibi'.

USE-VALUE FACTORS CONSTITUTIVE FOR VALUE FORMS

The 'commerce and industry' shadowgraph of the circulation of capital, which places generalized commodity circulation to one side (with its characteristic value forms, the commodity and money, buying and selling) and a production process without any determinate social form to the other – a representation of capitalism that leaves capital itself out – and the blunder of denying the actual intermingling of use-value and social form in capitalism are bound up with one another. For proper attention to the co-involvements of use-value and value in capitalism compels us to outgrow the 'commerce and industry' picture. Conversely that sketch omits those co-involvements.

Obliviousness to the use-value (and social class) factors constitutive of the capital form itself keeps the 'commerce and industry' picture in the dark about capital. In conceptualizing simple commodity circulation, 'commerce', use-value comes into play only in these three meager ways: a commodity must be a use-value of some sort (any old sort), it must be a use-value for a stranger or someone being treated as a stranger,²⁰ and specific physical properties such as rarity, compactness and durability enter into the selection of the money commodity. On the 'industry' side of the picture, conceptualizing the production process strictly in use-value terms allows no

place for the *determination* – not the modification – of production by any specific social form.²¹ So use-value makes up the 'industry' side of the picture and purports to stand alone independently of social form. (Recall that, in *Capital*, use-value enters in where it determines or is determined by the value forms.) However, as Marx observed in the *Grundrisse*, 'there is no production in general'; production always has a determining social form.²² While it is useful to abstract general traits of production, 'industry' is a bad abstraction, a shadow pretending to be real. The irony is that the popularity of the representation of the circulation of capital as generalized commodity circulation paired with a production process lacking any particular social form is itself an ideological outcome of capital's takeover of production. Capital shadows itself over.

Marx's achievement in Volume Two is to take us out of the shadows, shedding the 'commerce and industry' picture in favor of the concept of the circulation of *capital*, and to educate us to the many instances of 'thick' co-involvements of use-value and value factors as they affect the circulation of the total social capital. The following subsections will examine several of the most important such instances, beginning with capital itself.

Capital

Marx wastes little time in the first chapter of Volume Two in getting to this key point: *specific use-value (and class) factors enter into the very constitution of capital and wage labor*. As noted above, use-value does enter into the constitution of the commodity, but only in highly abstract ways. And it is precisely the spell of that abstractness which deflects attention from the more specific use-value factors that make capital and wage labor possible. To the abstract patterns of thought into which generalized commodity exchange habituates us, capital just looks like money and the capitalist a buyer, while labor power is just one more commodity and its owner, the wage-laborer, a seller. So what is new to fuss about? Marx criticizes the answer that says that what is new with capitalism is that labor power is paid in money, not 'in kind'. He writes: 'It is quite immaterial, as far as the money is concerned, what sort of commodities it is transformed into. ... Thus once labor-power is found on the market as a commodity, its sale taking place in the form of a payment for labor, in the wage form, then its sale and purchase is no more striking than the sale and purchase of any

other commodity. What is characteristic is not that the commodity labor-power can be bought, but the fact that labor-power appears as a commodity' (114). What must be presupposed for labor power to take the commodity form? That is the question, not what form payment for that commodity takes.

That labor power appears as a commodity – and capital's being hangs on the fact that it does – depends upon definite use-value and class factors: 'Before the sale, this labor-power exists in a state of separation from the means of production, from the objective conditions of its application. In this state of separation, it can be directly used neither for the production of use-values for its possessor, nor for the production of commodities which he could live from selling' (114). The class aspect is that workers are separated from the means and materials of production, while capitalists own them. The use-value factor is so obvious that it is easy to overlook: this class division pertains to those use-values that make up the means and materials of production, those use-values that we come to know in Part Three as the products of Department I. A class division based on some other use-value consideration, say, who gets luxury consumer goods and who does not, will not do. No separation of workers from the means and materials of production – no capital.²³ Capital cannot afford the blasé marketplace mentality for which specifics about use-values do not matter.

For capital is all about the accumulation of surplus value, but surplus value, like value generally, originates in the production process; thus use-value considerations intrinsic to the production process are intrinsic to capital. 'Whatever the social form of production, workers and means of production always remain its factors. But if they are in a state of mutual separation, they are only potentially factors of production. For any production to take place, they must be connected. The particular form and mode in which this connection is effected is what distinguishes the various economic epochs of the social structure' (120). The capitalist way to make this connection involves generalized commodity exchange, the market, where workers appear as sellers of a commodity, labor power, and capitalists its buyers. But *because of the specific use-value factors* in play here, namely, that when the capitalist goes to market as capitalist it is to purchase the necessary elements of the production process, the *money* of the capitalist is transmuted into a new, more complex value form, *money capital*, 'the money advanced functioned as money-capital because it was converted through

circulation into commodities with a specific use-value' (122) and the commodities that compose *the elements of the production process* become, after purchase, *productive capital*.

In his second chapter Marx recaps these points: 'the act $M-C$, insofar as it is $M-L$, is in no way simply the substitution of commodities in use form for commodities in money form, but includes other elements that are independent of the general circulation of commodities as such' (151). Those 'other elements' are the use-value and class factors involved in the separation of workers from means of production. These factors are presupposed by the complex value form, capital. To fail to recognize this constitutive role for use-value factors 'thicker' than those pertinent to the commodity and money forms, then, is to fail to grasp capital.

That failure, Marx observes, is endemic to the capital form, for generalized commodity circulation is the presupposition and constant by-product of the circulation of capital. And the error that use-value factors quickly drop out of sight in *Capital* becomes an *idée fixe* through the power exercised over our imaginations by the abstract forms characteristic of generalized commodity circulation: the commodity and, especially, money: 'money is the independent and palpable form of existence of value, the value of the product in its independent value form, in which all trace of the commodities' use-value has been effaced' (137). The unhinged money form is a 'frightful leveler,' writes Simmel.²⁴ Money's glare whites out capital.

Productive and Unproductive Labor

Marx defines *productive labor* as labor that enters into the 'immediate process of production' of capital or, what amounts to the same thing, labor that produces surplus value. *Unproductive labor* is wage-labor that is not productive labor. So the distinction between productive and unproductive labor is made within forms specific to capitalism; it has nothing to do with puritanical musings about what is 'truly useful' and what not.²⁵

The distinction between productive and unproductive labor arises irresistibly because of the attention that circulation receives in Volume Two. Several momentous consequences that commodity circulation has for the realization, rate, distribution and accumulation of surplus value naturally give rise to the illusion that surplus value is produced in the sphere of circulation.²⁶ Marx emphatically

opposes this error as it seems to provide 'proof that capital possesses a mystical source of self-valorization that is independent of its production process and hence of the exploitation of labor' (204). Against this fetishizing of capital, Marx insists: 'Circulation time and production time are mutually exclusive. During its circulation time, capital does not function as productive capital, and therefore produces neither commodities nor surplus-value' (203). Marx recognizes that circulation 'is just as necessary for commodity production as is production itself, and thus agents of circulation are just as necessary as agents of production' (205). But the necessity of the labor involved in commodity circulation does not make it productive.²⁷

In the important Chapter 6, 'The Costs of Circulation', we find matters a little more complicated than suggested thus far. Here Marx distinguishes between circulatory functions that are necessitated strictly by the peculiar formal properties of capital, that is, functions performed strictly to accomplish the metamorphosis of commodity capital into money or money capital into productive capital, and other functions. Those other functions include productive ones. 'Those circulation costs that proceed from the mere change in form of value, from circulation in its ideal sense, do not enter into the value of commodities. The portions of capital spent on them constitute mere deductions from the capital productively spent, as far as the capitalist is concerned. The circulation costs that we shall deal with now are different in nature. They can arise from production processes that are simply continued in the circulation sphere, and whose productive character is thus merely hidden by the circulation form' (214). Transportation costs are of this latter, productive sort. Transportation adds value (and surplus value) *because it affects the use-value of commodities*: 'the use-value of things is realized only in their consumption, and their consumption may make a change of location necessary, and thus also the additional production process of the transport industry. The productive capital invested in this industry thus adds value to the products transported' (226-7). Storage costs are more complicated, but the appeal to the contrast between use-value and social form is again decisive. Keeping a productive stock and a consumption fund is common to all forms of social production. Expenditures on storage, then, are productive insofar as they are necessary, from the use-value point of view, for the free flow of industrial capital but unproductive when they result from interruptions of the formal

changes from commodities to money.²⁸ The fact that, in capitalism, transportation and certain storage costs appear to belong to commodity circulation (though they actually belong to production) reinforces the illusion that the mere changes of form in commodity circulation can account for surplus value.²⁹

The point remains that effort devoted strictly to the metamorphosis of commodity capital into money ($C-M$) or money capital into productive capital ($M-C$) is unproductive: 'The general law is that all circulation costs that arise simply from a change in form of the commodity cannot add any value to it' (225-6). So, when Marx says that circulation excludes production, he means circulation in a restricted sense that pertains only to the formal changes capital must undergo; the broader, everyday understanding of circulation includes productive expenditures.

No value and, *a fortiori*, no surplus value is created in the restricted sphere of circulation for a simple reason: in this sphere no use-value is (preserved or) added to the commodity, and if no use-value is (preserved or) added, no value is added. For, while a use-value need not be a value, value depends on use-value.³⁰ As a consequence, value-producing labor has a double character: it is 'socially necessary abstract labor' and it is 'useful labor'.³¹ Just as, throughout *Capital*, Marx unpacks the significance of 'socially necessary abstract labor', he likewise continues to unfold the significance of the fact that value-producing labor is 'useful labor'. That is what is going on here. Use-value figures in the determination of what counts as productive labor: for labor to be productive it must preserve or enhance use value. The labor required for circulation in the restricted sense does neither; that is why it is unproductive.³²

Fixed Capital and Circulating Capital

The distinction between fixed and circulating capital falls within the category of productive capital and turns on how different elements of productive capital transfer value to products: *fixed capital*, having physically endured the production period, transfers only a portion of its value to the product in the course of the production period of a commodity and it continues to function as a useful factor of production and transfer more of its value in one or more subsequent production periods; *circulating capital*, not having physically endured the production period, transfers all of its value to

the product in each production period and it is not able to function as a useful factor of production in a subsequent production period. Drawing this distinction correctly requires the ability to grasp the actual co-involvement of value and use-value factors in capitalist production. The difficulty of the task is suggested by Marx's history of the efforts of political economists including Quesnay, Smith and Ricardo: they all fell into one pitfall or another and never did succeed in properly drawing the distinction.

Given the purposes of Volume Two, the distinction between fixed and circulating capital holds plenty of interest in its own right, for differences between fixed and circulating capital can have a tremendous impact on the turnover of industrial capital and thereby on the realization, distribution, rate and accumulation of surplus value. What boosts the voltage of the whole discussion, however, is that political economy's failure to get the distinction right ties in with even more profound errors: its pervasive naturalization of distinctively capitalist forms; its failure to grasp in a coherent theory the source of surplus value, which was to fail to grasp capital; and, as a result, its abysmal readiness to attribute to capital the power to generate surplus value of itself. But just how are the errors in properly conceptualizing the distinction between fixed and circulating capital tied in with these fundamental failures to know capital?

Within the tradition of political economy, Marx distinguishes several different mistakes stemming from the inability to grasp how use-value *and* value factors enter into the concepts of fixed and circulating capital. One mistake is to confuse *circulating capital*, which is a form of productive capital, with *capital of circulation* (commodity capital and money capital), a mistake that turns on not recognizing the difference between the strictly formal metamorphosis that occurs when commodity capital is transformed into money or money capital into the elements of production (productive capital) and the material and formal metamorphosis that takes place in production when use-values are altered and value is produced or transferred.³³ Thus a distinction that turns on the way that specific elements of the production process wear out and transfer their value to products gets jumbled up with one based on purely commercial considerations. As Marx observes, if circulating capital is mistaken for capital of circulation, 'It is impossible to see here why one particular kind of capital should be more fixed or more circulating than another' (305). That is so because of the 'thinness'

of the use-value considerations proper to commodity circulation – a commodity must be a use-value, but any old use value will do – as opposed to the 'thicker' use-value considerations proper to fixed capital. Here is one way the 'commerce and industry' picture interferes with the proper understanding of this distinction.

If the first error erases the role of specific use-value factors in the distinction by collapsing the distinction between capital of circulation and productive capital (where the co-involvement of use-value and value factors is 'thicker'), a second error rests on reducing the distinction to use-value features alone and thereby naturalizing the distinction. Marx distinguishes two problems with this reduction of the distinction to use-value features: 'certain properties that characterize the means of labor materially are made into direct properties of fixed capital, e.g. physical immobility, such as that of a house. But it is always easy to show that other means of labor, which are also as such fixed capital, ships for example, have the opposite property, i.e. physical mobility. Alternatively, the formal economic characteristic that arises from the circulation of value is confused with a concrete [*dinglich*] property; as if things which are never capital at all in themselves, could already *in themselves* and by nature be capital in a definite form, fixed or circulating' (241).

The first problem is to think that particular use-value features, such as mobility and immobility, can settle the issue of whether something counts as fixed or circulating capital. But the distinction depends on *function*, not properties alone: 'It is only the function of a product as a means of labor in the production process that makes it fixed capital' (240). An ox used to pull the plow of a capitalist farmer is fixed capital, whereas an ox bred by a capitalist rancher to be sold for food is circulating capital. Thinking you could decide whether an ox is fixed or circulating capital just by inspecting its properties (for example, durability) is like thinking that you could decide whether 'work' is a noun or a verb just by staring at the letters. The second problem is thinking that any use-value property could make something fixed or circulating capital *independently of the social form* of the production process in which it functions. To think that way naturalizes the distinction. But the determining factor in deciding whether or not something counts as fixed or circulating capital involves not simply use-value functions but the way *value* is transferred to products – and value is a determinate social form.³⁴ In the language of the present chapter, the trouble here amounts to mistaking a distinction within *productive capital* for

an 'industrial' one. Once again, the 'commerce and industry' picture impedes understanding.

A third and especially devastating error is to conflate the distinction between *fixed and circulating capital* with an even more telling distinction within productive capital, that between *constant and variable capital*. Variable capital is the labor power component of productive capital; it is called 'variable' since it is the one element within productive capital whose consumption *produces* (as opposed to transfers) value, and as such it is the sole source of surplus value. Constant capital is the rest of productive capital; while its value can be *transferred*, it does not *produce* any value or surplus value. Since the production of surplus value is the *raison d'être* of capital, the distinction between variable and constant capital is the key that unlocks the secrets of the capitalist mode of production. Because of the way that it gives value to products, variable capital (labor power) counts as circulating capital just as much as do those elements of constant capital that wholly transfer their value to products within a production period. This 'permits the similarity of form that variable capital and the fluid [circulating] component of constant capital have in the *turnover* to conceal the basic difference that they have in the *valorization process* and in the formation of surplus-value, and in this way the whole secret of capitalist production is still further obscured' (278).³⁵ Once again we see Marx the social epistemologist at work, noticing how the peculiar social forms of capitalism throw its investigators off the track.

What really appalls Marx is compounding the second and third errors; that is, binding the naturalization of the distinction between fixed and circulating capital to the collapse of the constant v. variable capital distinction into it. If the distinction between constant and variable capital is identified with that between fixed and circulating capital, and if the latter distinction turns on use-value properties alone then surplus value, hence capital, must spring from a strictly natural source and must have nothing to do with specific social forms. On the one hand, 'The capitalist production process is thus successfully transformed into a complete mystery, and the origin of the surplus-value present in the product completely withdrawn from view' (303). On the other hand, in our ignorance we are led into the temptation of the 'Trinity Formula', that is, to attribute the power to produce surplus value to strictly natural factors (the means and materials of any labor process), thereby making a fetish of capital.

In wrapping up his remarks on this particularly sorry chapter in the history of political economy, Marx observes: 'What is also brought to fulfillment here is the fetishism peculiar to bourgeois economics, which transforms the social, economic character that things are stamped with in the process of social production into a natural character arising from the material nature of these things' (303). That fetishism is a natural consequence of the persistent failures of the political economists to comprehend the actual and diverse co-involvements of use-value and value in the capitalist mode of production. In the commission of their errors they are aided and abetted by capital's shadowgraph, the 'commerce and industry' picture of the circulation of capital.

The Turnover of Capital

Time itself is the use-value factor of primary interest where the turnover of industrial capital is concerned, though the use-value features already encompassed in the distinction between fixed and circulating capital enter in importantly as well. Turnover time is the time it takes to complete a full circuit of industrial capital. That circuit includes the purchase, with money capital, of the elements of production, the completion of a production process (a production period) and the sale of the commodity produced. Turnover time is the sum of production time and circulation time proper. Production time can in turn be subdivided into working time and non-working production time (during which the work process is interrupted in order to accomplish some alteration, such as drying paint, necessary to produce the commodity) and circulation time proper can be subdivided into selling time and buying time.

The details of the way different durations of these several periods affect capital's turnover become quite complicated, especially as the account must factor in the difference between fixed and circulating capital and the consequences of capital's necessary metamorphoses into and out of the money form during the course of its turnover. The latter is an aspect of the story that brings home some very practical consequences of the fact that value must be expressed in money, and it underlines the point that it is the *capitalist* production process that is under study, not the fiction 'industry'. For present purposes it is enough to recognize that the durations of the several components of turnover time have a profound affect on the realization, distribution, rate and accumulation of surplus value – shorter

is better – and that the durations of those periods depend upon a host of use-value factors including the availability and mix of labor power and materials, the state of scientific and technical development as it affects production time, the speed of communication and transportation, the effectiveness of marketing strategies and the sorts of financial 'instruments' in use.

In Volume One of *Capital*, the whole problematic of 'relative surplus value' uncovered a surplus value-based scientific and technological dynamism to capitalist production. It is in the interest of the capitalist class as a whole to increase the productivity of those industries whose products are consumed by wage laborers in order to keep down or lower the cost of labor power and thereby, all things being equal, to maintain or increase the net amount of surplus value capitalists realize. Furthermore, because of the competitive 'treadmill effect' involved with value-producing labor as 'socially necessary abstract labor' (if my workers are more productive than the average, each hour of their work counts for more than an hour's worth of value) it is in the interest of capitalists in whichever branch of production to increase productivity in order to increase *their share* of the total surplus value realized. The surplus value-based drive for more productivity disclosed in Volume One reveals an uncanny historical dynamic to the intermingling of use-value and value in capitalism. The conclusions of Volume Two regarding the power that increasing the velocity of capital's circulation has to redistribute and to step up the realization, rate and accumulation of surplus value redouble our reasons to recognize in capitalism's nexus of use-value and value a historical dynamism of unforeseen and unprecedented power. To Volume One's 'More!' Volume Two answers, 'Faster!'

Capital's Two 'Departments': the 'Reproduction Schemes'

The 'reproduction schemes' of Part Three, which show how the total social capital can be reproduced, *both materially and formally*, are probably the best known contribution of Volume Two. Our limited objective in bringing them in here is to indicate how they round out Marx's Volume Two presentation of the co-involvement of use-value and value in capital. Up to the inquiry into the circulation of the *total social capital*, Marx could abstract from the issue of what sort of commodity any individual industrial capital was producing. Up to this point the 'commercial' assumption about the use value of

commodities – that they have one – sufficed. When we come to the circulation of the total social capital, however, that 'thin' condition is no longer good enough.

As long we were dealing with capital's value production and the value of its product individually, the natural form of the commodity product was a matter of complete indifference for the analysis, whether it was machines or corn or mirrors. ... In so far as the reproduction of capital came into consideration, it was sufficient to assume that the opportunity arose within the circulation sphere for the part of the product that represented capital value to be transformed back into its elements of production, and therefore into its shape as productive capital, just as we could assume that worker and capitalist found on the market the commodities on which they spent their wages and surplus-value. But this purely formal manner of presentation is no longer sufficient once we consider the total social capital and the value of its product. The transformation of one portion of the product's value back into capital, the entry of another part into the individual consumption of the capitalist and working classes, forms a movement within the value of the product in which the total capital has resulted; 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. (470)³⁶

The question that our attention to the co-involvement of use-value and value factors in Volume Two can answer for us is this: In devising the 'reproduction schemes', why does Marx have *two* (and only two) 'departments' and why are they differentiated as they are, that is, between means/material of production (Department I) and means of consumption (Department II)? (After all, one can imagine any number of schemes for dividing the total yearly product up along use-value lines into any number of 'departments'.) The answer takes us back to the purposes of Volume Two and what we learned earlier of the way 'thicker' use-value (and class) factors enter into the capital form. The purpose of Volume Two is to show how *capital* circulates and reproduces itself in and through its process of circulation. But capital is a nexus of material factors and social forms; its reproduction, then, requires that it be reproduced

materially and formally. We learned earlier that the capital form presupposes that those use-values serving as the means and materials of production, the product of Department I, must be in the hands of the capitalist class to assure that labor power goes up for sale. The reproduction of the capital *form*, then, has a *material* (and social class) requirement and it is this that requires Marx to make the distinction between the two 'departments' as he does. To show that capital can reproduce itself formally, Marx has to show that Department I goods keep cycling back into the hands of the capitalist class, which is just what the 'reproduction schemes' demonstrate.

REAL SUBSUMPTION OF CIRCULATION UNDER CAPITAL³⁷

Writing of formal and real subsumption under capital in the manuscript, *Results of the Immediate Production Process*, Marx claims that real subsumption presupposes formal subsumption.³⁸ Why should it? Both formal and real subsumption change use-values. Formal subsumption alters them by changing their *form* – that which makes anything what it is – making them be something new, whether money capital, commodity capital, productive labor or circulating capital. Formal subsumption under capital, then, already involves the intermingling of use-value and social form. Real subsumption involves material alterations of use-values actuated by the demands of capital, say, writing television sitcoms around 'commercials' or interrupting televised sporting matches with 'TV time-outs'. Here lies our answer. Real subsumption presupposes formal subsumption because the whole reason for making the material changes is that they matter to capital: use-value and value must already be involved with one another; that is, formal subsumption must already be in place. Notice that the 'commerce and industry' picture of the circulation of capital and the concomitant blunder of believing that use-value drops out after the second page of *Capital* disable us from conceptualizing either the formal or the real subsumption of circulatory functions under capital, which happen to be the chief topics of Volume Two.

What we have been studying thus far can be fairly characterized, then, as an inquiry into the formal subsumption of circulatory (productive and distributive) functions under capital, which is where the brunt of the conceptual work takes place. Now we turn our

attention from the formal to the real subsumption of circulation under capital.

The concept of the real subsumption of the circulation of socially produced wealth under capital discloses a multitude of surplus value-based tendencies for the material transformation of circulatory functions that we can sensibly sort into three primary categories: (1) shortening turnover time; (2) reducing expenses associated with storage, whether incurred in the 'immediate production process' or in commodity circulation proper; and (3) reducing the costs involved with money and accounting. These three, however, are not the only important ones. Two others worth mentioning are the tendency to develop technologies and labor force management policies that help assure having the right technical mix of means/materials of production and labor power and the (perhaps surprising) tendency to break down production processes so that they can be expanded in small increments to alleviate both the problem of having to pool lots of money to expand and the problem of stagnating inventories.

The actual trends fanning out from these and other form-based tendencies are multiplying, as both the growing literature on 'flexible accumulation' and the daily business pages will attest. Volume Two, then, adds new specificity to Marx's account of the consequences of real subsumption under capital for the shape, direction and velocity of technical innovation and change. Our limited purpose here is to point to the concept of the real subsumption of the circulation of wealth under capital as a needed resource in the task of knowing these changes for what they are.

CONCLUSION: WHAT IS WRONG WITH THE 'COMMERCE AND INDUSTRY' PICTURE AND WHY IT PERSISTS

Let us start with what is right about the 'commerce and industry' picture of the circulation of capital. 'Commerce' identifies a set of necessary aspects of the phenomenon of the circulation of capital: the circulation of capital encompasses, reproduces and generalizes the sphere of simple commodity circulation, continually reinforcing the validity of its characteristic forms, the commodity, money, buyer and seller. Marx repeatedly states that, insofar as capital operates within the horizon of commodity exchange (that is, in functioning as money capital and as commodity capital), it is governed

by the laws of simple commodity circulation, the laws of 'commerce'. Moreover certain functions that are necessary for the reproduction of capital are governed simply by those laws: the money that consumers (whether capitalists or wage laborers) spend 'unproductively' functions simply as money, not money capital. And, despite all the careless talk about 'human capital', the good that wage laborers bring to market, their labor power, functions for them strictly as a commodity, not as commodity capital. On the other side of the picture, 'industry' identifies use-value aspects of the capitalist 'immediate production process' which belong to the phenomenon of the circulation of capital. Marx granted this truth already in his account of the 'labor process' (as contrasted with the 'valorization process') in Chapter 7 of Volume One, but Volume Two elaborates on that general presentation in many ways (as we saw, for example, in the discussion of productive labor above). For these reasons it is better to speak of the 'commerce and industry' representation of the circulation of capital as a *shadowgraph*, which does accurately represent certain aspects of an actual object, than as a *mirage*, which bears no such resemblance. Surely the elements of truth in the 'commerce and industry' picture partially explain its persistence.

Where the 'commerce and industry' picture goes wrong returns us to Marx's fundamental observation: all production has a determining social form. The notion of 'industry' does not respect this truth. It does not recognize the force of Marx's dictum that the investigation of a mode of production must treat it as a nexus of material (use-value) factors and social forms – *all the way down*. Thus 'industry' is imagined to exist without any determining social form, and 'commerce' is consequently pictured as running alongside it rather than belonging to it. This fundamental misconception comes to the surface in many errors and shortcomings of the 'commerce and industry' picture.

The characteristic concepts of that picture – commodity, money, buyer, seller, industry – fail to answer correctly the ineluctable scientific question, 'What is it?' What can you say for a picture of the circulation of capital that cannot tell what capital is? And that representation leaves us equally tongue-tied when it comes time to speak of money capital, productive capital and commodity capital, of capitalist and wage labor. Because this representation fails to grapple with the value form, it does not recognize money to be the necessary manifestation of the value (and surplus value) produced

in the 'immediate production process of capital' and it therefore cannot grasp the necessity of the three distinct circuits of industrial capital and their consequences. In particular, obliviousness to the necessity of money in the capitalist mode of production yields a flurry of omissions and mistakes regarding the role of money capital. Among those mistakes is the promotion of 'wealthism': 'wealth' being what 'industry' pumps out, in contrast to Marx's judgment: 'Capitalist commodity production, for its part, whether we consider it socially or individually, similarly presupposes capital in the money form, or money capital, both as the prime mover for each business when it first begins, and as a permanent driving force' (431).

We have seen how the inability to think straight about the nexus of use-value and social form (value) in capitalism, which is presupposed and reinforced by the 'commerce and industry' picture, resulted in the political economists' fumbling of key conceptual pairs: productive and unproductive labor, constant and variable capital, fixed and circulating capital. And the 'commerce and industry' picture's blindness to the co-involvement of use-value and social form determinations in the turnover of industrial capital kept from view the whole phenomenon of real subsumption and, with it, the social form-based dynamism of capitalist production. Anyone confined to the 'commerce and industry' picture has to grasp at straws in order to explain the actual scientific and technological dynamism of capital.

The way of representing the circulation of capital we have been calling here the 'commerce and industry' picture has the persistence and propagational powers of a 'stink tree'. This is so for a variety of reasons, one of which has already been mentioned: that it contains truths whose truth conditions are continually reproduced by the circulation of capital. Seeing what is false about it is difficult for a couple of reasons. It requires a readiness to recognize the reality and power of social forms that is scarce in an intellectual milieu still largely defined by the war on forms waged by modern philosophy and science. The social forms characteristic of capitalism are bizarre and self-obscuring, points Marx makes much of, starting with his analysis of value and the value form in Chapter 1 of *Capital*. Money does not look like a social form; neither does the 'immediate production process' appear to be organized by any definite social form or any definite social conception of the good; and the idea that there is a necessary relationship between money

and the 'immediate production process' in capitalism is not come by easily. Compared to the intellectual demands of the 'commerce and industry' picture, the degree of conceptual complexity demanded by the phenomenon of the circulation of capital is forbidding.

Finally the uncomplicated world of 'commerce' is high-minded and progressive: 'The sphere of circulation or commodity exchange, within whose boundaries the sale and purchase of labor-power goes on, is in fact a very Eden of the innate rights of man. It is the exclusive realm of Freedom, Equality, Property and Bentham.'³⁹ What picture emanating from political economy could be more congenial to liberalism? And with 'industry' busily pouring out 'wealth', who wants to be the spoiler? Readers of *Capital*, Volume Two, know the answer.⁴⁰

APPENDIX: A CRITIQUE OF ERNEST MANDEL ON PRODUCTIVE AND UNPRODUCTIVE LABOR

Ernest Mandel addresses the topic of productive and unproductive labor in his introduction to David Fernbach's translation of *Capital*, Volume Two. The thrust of the position that Mandel develops there is that Marx's views on the distinction, particularly on how to classify service industries, vacillated during the 1860s, until Marx settled on the position Mandel claims to find in Volume Two: service industries (industries that produce no separable, free-standing product that could be taken to market) cannot involve productive labor. It will be argued below that this is the wrong conclusion and, furthermore, that the reasoning Mandel offers in support of it is deeply flawed. This topic gains in importance as the fraction of for-profit business activities in the service sector increases. If Mandel is right that labor in the service sector is unproductive, the expansion of that sector must make a growing deduction from the total surplus value and put a worsening downward pressure on the rate of profit. If the service sector is productive, however, no such consequences follow. On the contrary, owing to short turnover times, service industries may even give profitability a boost.

Mandel offers this as the first of two definitions of productive labor between which Marx's thinking supposedly wobbled: 'all labor which is exchanged against capital and not against revenue' (41-2). The second defines productive labor as 'Commodity-producing labor,

combining concrete and abstract labor (i.e. combining creation of use-values and production of exchange-values)' (43). Mandel believes that this second definition 'logically excludes "nonmaterial goods" from the sphere of value production' (43). Why? Because of a basic thesis of *Capital*: 'there can be no production without (concrete) labor, no concrete labor without appropriation and transformation of material objects' (43). Here we come to what will prove to be the nub of the problem with Mandel's view, namely, how he understands Marx's concept of concrete labor.

Mandel devotes special attention to the question of 'nonmaterial goods'. (Keep an eye on those scare quotes.) Attempting to build momentum for his interpretation that Marx was vacillating on the distinction between productive and unproductive labor, Mandel says that, in *Theories of Surplus-Value*, 'Marx tends to classify these [services] as commodities, in so far as they are produced by wage-earners for capitalist entrepreneurs. Although in Volume Two he does not explicitly contradict this, he insists strongly and repeatedly on the correlation between use-values embodied in commodities through a labor process which acts upon and transforms nature, and the production of value and surplus-value.' Mandel thinks that Marx comes to hold the view (arriving at it only with difficulty) that a commodity must be a use-value – which it must – but that a use-value must be some independently existing object which is the result of 'concrete labor' that 'acts upon and transforms nature'. Here is the wedge that will keep services from being considered commodities, hence service labor from being considered productive labor.

Mandel grants that Marx explicitly (*Capital*, I, p. 644) includes certain teachers as productive laborers but draws this lesson that 'only indicates that Marx had not yet completed his articulation of the contradictory determinants of "productive labor" – on the one hand, exchange against capital rather than revenue, and on the other, participation in the process of commodity production (which involves the unity-and-contradiction of the labor process and the valorization process, use-value and exchange-value, concrete and abstract labor)' (43). But there are no 'contradictory determinants' to articulate. Rather, something is suspect about Mandel's whole suggestion of two different definitions of productive labor. On the one hand, surely Marx never thought that the mere production of a commodity (as opposed to commodity capital) qualified labor as productive; so the second definition is either flatly wrong or implic-

itly includes the first definition. On the other hand, the second definition is encompassed in the first, for, as Volume Two stresses, the production and sale of commodities belongs to the circulation of capital, and capital exists only in its circulation.

Mandel finds evidence in the following text from Volume Two of a general exclusion of 'personal service industries' from the realm of productive labor: 'If we have a function which, although in and for itself unproductive, is nevertheless a necessary moment of reproduction, then, when this is transformed, through the division of labor, from the secondary activity of many into the exclusive activity of a few, into their special business, this does not change the character of the function itself'(43). The trouble is, this begs the question, which is: Are 'personal service industries' unproductive to begin with? For the same reason, Mandel's follow-up, 'If this is true of commercial travellers or book-keepers, it obviously applies all the more to teachers or cleaning services' (43), is literally true: if the work of teachers and house cleaners is non-productive, then ..., but what Mandel means to say, namely that, if commercial travellers or bookkeepers are non-productive workers (as they are), then surely teachers and house cleaners are, is simply a non sequitur. We need first to know *why* the former types are unproductive and then see if those considerations pertain to the latter types.

Here we glimpse the false naturalization of the concept of productive labor to which Mandel falls prey. Mandel begs the question because he has already answered it in his own mind with the notion that the *natural* form of labor in 'personal service industries' (rather than its social form) gives grounds enough to exclude all such labor from being productive. Mandel acts as if there were a division based on *natural* characteristics between labors that are productive (or at least candidates for being productive) and those that are unproductive (or not candidates for being productive). This, we believe, is far from Marx's view. It amounts to a failure to think straight about how use-value and value figure in the distinction.

The nub of the problem with Mandel's line of thought is that he treats the notion of 'concrete labor' as if it were a critical category, as if there were two types of actual labor, concrete and non-concrete; the former can produce commodities, the latter cannot.⁴¹ (And labor in service industries is, by nature, of the 'non-concrete' sort.) That is not how the category of concrete labor works in Marx's thought. For Marx, *all* human labor is concrete in this general sense. There is no actual human labor to contrast with

Marx's general category of concrete labor; there is no actual, 'non-concrete' labor, no labor that fails to involve the 'appropriation and transformation of material objects'. (What bad idealism to imagine there is!) So there is no natural class of actual labors which could be precluded from counting as productive by virtue of those labors failing to be concrete, thus failing to be commodity-producing.

Mandel's position trades on a peculiarity about the usage of the word 'commodity'. The term may mean a separable product, as Mandel takes it, or it may be, more generally, anything useful, including a 'useful effect' that has an exchange value, this second being the proper definition. Thus Marx writes, with the transportation industry in mind: 'There are however particular branches of industry in which the product of the production process is not a new objective product, a commodity.' Here Marx bows to the first usage of the term. But he goes on to say of the transport industry: 'The useful effect can only be consumed during the production process; it does not exist as a thing of use distinct from this process, a thing which functions as an article of commerce and circulates as a commodity only after its production. However the exchange-value of this useful effect is still determined, like that of any other commodity, by the value of the elements of production used up in it (labor power and the means of production), plus the surplus-value created by the surplus labor of the workers occupied in the transport industry' (135). This passage from Volume Two simply contravenes Mandel's position: Marx says that the transportation industry (including the transportation of people) sells commodities and does so on a capitalist basis, meaning that transportation workers can be productive workers.⁴²

We take Mandel's general rule: 'all forms of wage-labor which exteriorize themselves in and thus add value to a product (materials) are creative of surplus-value and hence productive for capitalism as a whole' (44) to mean that only free-standing products can be commodities and that only those workers who produce such products can be productive laborers.⁴³ Hence service industry workers, who do not bring independently existing products to market, cannot be productive laborers. This is the wrong conclusion, drawn, as we have shown, for the wrong reasons. There is a difference between a free-standing product and a 'useful effect', but both are material. Likewise we can distinguish between the labor that produces a free-standing commodity and the labor that performs a service for purchase, but both are concrete. The meta-

physics underlying Mandel's normative notion of 'material goods' and concrete labor brings to mind the words of heavy-metal guitarist Ted Nugent: 'If I can't bite into it, it doesn't exist.' As for service industries, not only can they be productive of surplus value (adding to the aggregate surplus value) when organized capitalistically, but, because for them that portion of the turnover time of industrial capital represented by $C'-M'$ equals zero, it follows that, *ceteris paribus*, service industries would be favored by capital.⁴⁴

Mandel's fixation of the distinction between productive and unproductive labor on the *natural* difference between a useful effect that issues in a separable product and one that does not (as in the case of transportation) – his getting the relationship between use-value and value categories wrong – leads him not only incorrectly to exclude true service industries from the category of productive labor but to the opposite mistake, counting unproductive labor as productive because it issues in a tangible product: 'Similarly [to the production of films and television shows, the similarity being that they all result in independently existing products] wage-labor employed in making advertising films is productive, whereas the cajoling of potential clients to purchase or order such films is as unproductive as the labor of commercial representatives in general' (45). But advertising is unproductive for the same reason as the cajoling is: it is all about the formal change from $C'-M'$. The fact that, in the course of their work, advertisers produce tangible objects like films does not make their work productive.

Notes

1. 'Capital essentially produces capital, and it does this only as long as it produces surplus-value' (*Capital*, Volume III, p. 1020).
2. Page numbers with no further indications refer to the David Fernbach translation of Karl Marx's *Capital*, Volume II.
3. See *Capital*, Volume I, pp. 125–6.
4. See Roman Rosdolsky, *The Making of Marx's 'Capital'*.
5. In his 1991 book, *Postmodernism, or, The Cultural Logic of Late Capitalism*, Frederic Jameson advises: 'the reader needs to remember that "use value" at once drops out of the picture on the opening page of *Capital*' (231).
6. *Grundrisse*, p. 87.
7. See, for example, David Harvey's *The Condition of Postmodernity*.
8. In his *Time, Labor, and Social Domination*, Moishe Postone emphasizes the historical dynamism of capitalism resulting from the real subsumption of use-values under capital, and he conceptualizes the

- build-up of 'shearing pressures' that could compromise the reproduction of capitalism.
9. See pp. 141–2.
 10. See p. 179.
 11. *Capital*, I, p. 174, n.34.
 12. On this topic, see Patrick Murray, 'The Necessity of Money'.
 13. On general as opposed to determinate abstractions, see Patrick Murray, *Marx's Theory of Scientific Knowledge*, ch. 10.
 14. Here I substitute the preferable phrasing of the Moscow translation, 'shallow rationalism' (p. 92), for Fernbach's 'superficial rationality'. Compare the passage with *Grundrisse*, p. 303.
 15. See Moishe Postone's 'Anti-Semitism and National Socialism', for a fascinating exploration of the way in which the tendency to naturalize productive capital while vilifying money capital and commodity capital played a role in Nazi anti-Semitism as part of a misguided and virulent form of anti-capitalism.
 16. Compare these excerpts from Marx's *Grundrisse*: 'Do we never find in antiquity an inquiry into which form of landed property etc. is the most productive, creates the greatest wealth? Wealth does not appear as the aim of production ... The question is always which mode of property creates the best citizens. Wealth appears as an end in itself only among the few commercial peoples – monopolists of the carrying trade – who live in the pores of the ancient world, like the Jews in medieval society ... Thus the old view, in which the human being appears as the aim of production, regardless of his limited national, religious, political character, seems to be very lofty when contrasted to the modern world, where production appears as the aim of mankind and wealth as the aim of production' (pp. 487–8). This passage should not be taken to imply that Marx envisions or urges a return to antiquity.
 17. Consider the laconic remark of James Roderick, then Chairman of US Steel: 'The duty of management is to make money, not steel' (as quoted in David Harvey's *The Condition of Postmodernity*, p. 158).
 18. 'Commerce' chimes in with a more high-minded story of human rights and the dignity of the person.
 19. Jean-François Lyotard and Jean Baudrillard, respectively.
 20. 'A thing can be useful, and a product of human labor, without being a commodity. He who satisfies his own need with the product of his own labor admittedly creates use-values, but not commodities. In order to produce the latter, he must not only produce use-values, but use-values for others, social use-values' (*Capital*, Volume I, p. 131). Engels elaborates on this passage, pointing out that these others are such as can be related to as commodity exchangers, a thought that I intend 'strangers' to carry.
 21. 'Determine' pertains to what makes a thing what it is; something lacking form is indeterminate and therefore, on Aristotelian principles, lacks actuality. 'Modify' operates at a different metaphysical and conceptual level; here we are dealing with something actual, something that is determinate, has form and is undergoing some al-

- teration, which may or may not involve a change of form. In this case the issue is not What is it? but, assuming we already know that, How does it act? or What is it changing into?
22. *Grundrisse*, p. 86.
 23. 'The introductory act of circulation, the purchase and sale of labor-power, itself depends in turn on a distribution of the social elements of production which is the presupposition and premise of the distribution of social products, viz. the separation between labor-power as a commodity for the worker, and the means of production as the property of non-workers' (pp. 461–2). And the reproduction of the total social capital requires the reproduction of this separation of Department I goods from wage laborers.
 24. See Georg Simmel's classic, 'The Metropolis and Mental Life'.
 25. For more on this topic, see the criticism of Ernest Mandel's views in the appendix to this chapter.
 26. Marx lists several sources of the illusion on p. 204.
 27. Not only is the labor involved in circulatory functions unproductive, but it does not perform the gratuitous function of transferring the value of the constant capital involved (whether fixed or circulating) to the commodities. Consequently expenditures on constant capital for circulatory functions do not enter into the value of the end commodities; they are pure losses.
 28. See pp. 224–5.
 29. Marx approvingly cites Ricardo's correction of J.B. Say on just this point. (See p. 227, n.9.)
 30. 'A thing can be a use-value without being a value ... nothing can be a value without being an object of utility. If the thing is useless, so is the labor contained in it; the labor does not count as labor, and therefore creates no value' (*Capital*, I, p. 131). By 'an object of utility' we should understand simply a useful object. Marx considered utility theory to be an ideological by-product of generalized commodity circulation.
 31. 'We use the abbreviated expression "useful labor" for labor whose utility [usefulness] is represented by the use-value of its product, or by the fact that its product is a use-value. In this connection we consider only its useful effect' (*Capital*, I, p. 132).
 32. At this point we might ask: if the use-value considerations involved in determining whether or not labor is productive are this 'thin' – the labor must preserve or add use value of some sort, any old sort – then why could not the concept of productive labor come within the purview of the 'commerce and industry' picture? The answer is that in the concept of productive labor the 'thin' use-value notion of 'useful labor' is co-involved with a value category, namely, surplus value (or capital, if you like), that is more complex than any of the value categories of commerce (commodity, money, buyer, seller).
 33. Marx makes these points in the following criticism of Adam Smith's views: 'What Adam Smith here calls circulating capital is what I intend to call *capital of circulation*, capital in the form pertaining to the circulation process, pertaining to the change of form mediated by

exchange (material change and change of hands), i.e. commodity capital and money capital, in contrast to the form pertaining to the production process, that of productive capital. These are not particular ways in which the industrial capitalist divides his capital, but rather different forms that the same capital value, once advanced, successively assumes and discards throughout its *curriculum vitae*. Adam Smith lumps these together with the distinctions of form that arise within the circulation of the capital value, in its circuit through its successive forms, while the capital value exists in the form of *productive capital*' (p. 271). That last point is perhaps better expressed a few pages later: 'He [Smith] places the merely formal commodity metamorphosis which the product, the commodity capital, undergoes in the circulation sphere and which mediates the commodities' change of hands, on the same level with the bodily metamorphosis which the various elements of the productive capital undergo during the production process. Without further ado, he lumps together the transformation of commodity into money and money into commodity with the transformation of the elements of production into the product' (p. 275). See also pp. 247, 278, 280, 282, 290 and 305.

34. 'This differing behavior of the elements of productive capital in the labor process, however, forms only the starting-point of the distinction between fixed and non-fixed capital, and not the distinction itself, as is already shown by the fact that it obtains equally for all modes of production, non-capitalist as well as capitalist. Corresponding to this different material role is the way in which value is surrendered to the product, to which further corresponds the way in which value is replaced by the sale of the product; and it is only this that constitutes the distinction in question. Thus capital is not fixed simply because it is fixed in the means of labor, but rather because a part of the value laid out on means of labor remains fixed in these, while another part circulates as a value component of the product' (p. 276).
35. See also pp. 296–7.
36. See also p. 508.
37. 'Circulation' here includes the production process.
38. See *Results of the Immediate Production Process*, p. 1019.
39. *Capital*, I, p. 280.
40. For very helpful comments on an early version of this chapter, I want to thank Christopher J. Arthur, Martha Campbell, Mino Carchedi, Paul Mattick, Fred Moseley, Geert Reuten and Tony Smith. I also want to thank Chris Arthur for a number of editorial suggestions that were right on the mark.
41. By the same token, Mandel supposes a natural distinction between 'material goods' and 'non-material goods'. There is a natural distinction to be made – it is the one between free-standing goods and 'useful effects' – but the way Mandel misconstrues the distinction is bad metaphysics and bad economics.
42. Mandel allows that transportation workers can be productive, but for a different reason. They can be productive when they complete

the use-value of some tangible product. The service of transportation itself cannot be a commodity by Mandel's lights.

43. Here Mandel reverts to a position held by Adam Smith, who, unaware, did distinguish productive from unproductive labor on two incompatible bases.
44. It is true that, in *Results of the Immediate Production Process*, Marx, while clearly granting that service labor could be productive, explicitly dismissed its economic significance: 'On the whole, types of work that are consumed as services and not in products separable from the worker and hence not capable of existing as commodities independently of him, but which are yet capable of being directly exploited in *capitalist* terms, are of microscopic significance when compared with the mass of capitalist production' (1044–5). This empirical conclusion has no bearing on the conceptual issue at stake; moreover there is no reason to assume that, 130-odd years later, we should arrive at the same factual judgment.

References

- Baudrillard, Jean (1975) *The Mirror of Production*, trans. Mark Poster, Telos Press, St Louis.
- Baudrillard, Jean (1981) *For a Critique of the Political Economy of the Sign*, trans. Charles Levin, Telos Press, St Louis.
- Harvey, David (1989) *The Condition of Postmodernity*, Basil Blackwell, Oxford.
- Jameson, Frederic (1991) *Postmodernism, or, The Cultural Logic of Late Capitalism*, Duke University Press, Durham, NC.
- Lyotard, Jean-François (1984) *The Postmodern Condition: A Report on Knowledge*, trans. Geoff Bennington and Brian Massumi, University of Minnesota Press, Minneapolis.
- Mandel, Ernest (1978) 'Introduction' to Karl Marx, *Capital*, Volume II, trans. David Fernbach.
- Marx, Karl (1977) *Capital: Volume One*, trans. Ben Fowkes, Vintage Books, New York.
- Marx, Karl (1978) *Capital: Volume Two*, ed. Friedrich Engels, trans. David Fernbach, Penguin Books, Harmondsworth, in association with *New Left Review*.
- Marx, Karl (1967) *Capital: Volume Two*, ed. Friedrich Engels, International Publishers, New York (Moscow translation).
- Marx, Karl (1973) *Grundrisse*, trans. Martin Nicolaus, Penguin Books, Harmondsworth, in association with *New Left Review*.
- Marx, Karl (1977) *Results of the Immediate Production Process, Capital: Volume I*.
- Moseley, Fred (ed.) (1993) *Marx's Method in 'Capital'*, Humanities Press, Atlantic Highlands, NJ.
- Murray, Patrick (1988) *Marx's Theory of Scientific Knowledge*, Humanities Press, Atlantic Highlands, NJ.
- Murray, Patrick (1993) 'The Necessity of Money: How Hegel Helped Marx Surpass Ricardo's Theory of Value', in Moseley (ed.), *Marx's Method in 'Capital'*.

- Postone, Moishe (1986) 'Anti-Semitism and National Socialism', in Anson Rabinbach and Jack Zipes (eds), *Germans and Jews Since the Holocaust*, Holmes and Meier, New York.
- Postone, Moishe (1993) *Time, Labor, and Social Domination: A Reinterpretation of Marx's Critical Theory*, Cambridge University Press, Cambridge.
- Rosdolsky, Roman (1977) *The Making of Marx's 'Capital'*, Pluto Press, London.
- Simmel, Georg (1971) 'The Metropolis and Mental Life', trans. Edward A. Shils, in David Levine (ed.), *Georg Simmel: On Individuality and Social Forms*, University of Chicago Press, Chicago; appeared originally in *Social Sciences III Selections and Selected Readings*, vol. 2, 14th edn, University of Chicago, 1948.

4

The Capital/Consumer Relation in Lean Production: The Continued Relevance of Volume Two of *Capital*

Tony Smith

Many social theorists assert that in leading sectors and regions of the contemporary economy a transition is occurring from 'Fordism' to the 'lean production' system of production and distribution. The present paper considers the contemporary significance of Volume Two of *Capital* in light of the alleged rise of lean production. The first task is to sketch briefly the nature of the transition in question.

FROM FORDISM TO LEAN PRODUCTION

The term 'Fordism' refers to an ideal type used to describe a form of capitalism hegemonic in certain sectors and regions in the mid-twentieth century. This ideal type is a synthesis of various features, including the following:

1. a labor process organized around assembly lines in which each worker is assigned a specific task to be performed repeatedly;
2. an extensive system of formal job classifications and work rules premised upon a relatively strict separation of mental and manual labor;

3. a vast expansion of indirect labor, including a bureaucratic apparatus of supervisors and middle managers, quality control departments, and so on;
4. the stockpiling of extensive inventories at each stage of the production and distribution process 'just in case' problems arise that threaten to disrupt production and distribution;
5. the mass production of standardized goods and services;
6. 'hands-off' relationships between assembly firms and their suppliers and distributors; and
7. mass consumer markets.

It can be questioned whether these features are sufficient to justify the assertion that Fordism counts as a distinct epoch in capitalism. Mass production and mass consumer markets arose in the nineteenth century, well before Henry Ford started operating in Michigan (Hounshell, 1984; Walker, 1989; Glick and Brenner, 1991). This issue need not be resolved here. For our purposes the more interesting question is whether a new stage in the economic evolution of capitalism is now emerging.

Each of the seven features just mentioned contributed to the crisis of Fordism that broke out in the late 1960s and early 1970s. There have been a wide variety of responses to this crisis, determined by different capital strategies, different balances of class forces, different governmental policies, and so on (Bonefeld and Holloway, 1991). Despite the great complexity and unevenness of economic processes many social theorists hold that one path of development has special significance, the path leading from Fordism to lean production. The following set of 'stylized facts' describes this path as it has been articulated in the lean production literature.

First, the fragmentation and atomization of detail labor reached a limit point in Fordism.¹ Further growth appears to require a reintegration of the labor process and a greater stress on social cooperation in the workplace ('the team concept') (Aoki, 1988).

Second, the attempt to impose a strict separation of manual labor and mental labor also reached a limit point. In the long term the greatest productivity advances have been shown to come from incremental changes in the production process (Dertouzos *et al.*, 1991). In order to undertake these incremental changes successfully the insights and creativity of the labor force must be mobilized. This is termed *kaizen*, or 'continuous improvement' (Imai, 1986).

Third, the costs of indirect labor, that is, labor that does not add value to the final product,² reached a limit point in Fordism. This includes supervisory labor, quality control, maintenance work, cleaning, and so on. These costs can be reduced if the operator on the shop floor and in the office becomes a multiskilled laborer capable of self-direction, as opposed to the detail laborer of past epochs of capitalism. The multiskilled worker incorporates quality concerns, machine maintenance and cleaning assignments into the labor process (Koike, 1988).

Fourth, the costs associated with inventories built up 'just in case' they were needed reached a limit point as well. If each step in the production and distribution process is completed as needed, that is, 'just in time' for the results to be used by the next stage in the process, inventories can be kept low. In this approach final assembly is completed only when an order comes in, partially finished goods are produced only when needed for final assembly, and suppliers deliver parts and raw materials to the plant only when they are required for production.

Fifth, in Fordism fixed constant capital was invested in single-purpose machines, that is, machines capable of producing a single sort of output. The owners and controllers of capital naturally wished to receive as great a return as possible from their investment, and so they were predisposed to extend product runs of their standardized products. Also the unit costs of a new sort of output were quite high initially, since the machines that had been operating would have to be replaced. With the introduction of general-purpose machines (computer numerically controlled machine tools, robots, desktop computers and so on) a new type of output can be produced simply through reprogramming the machines, without much effect on unit costs. And so a tendency arises for there to be shorter runs of more diverse products.³ While scale and volume have hardly become irrelevant,⁴ in lean production the greatest profits are won from tailoring goods or services to the specific needs of particular customers in a way that cannot be easily duplicated by others.⁵

Sixth, the just-in-time approach obviously implies that relations between assembly firms and their suppliers and distributors cannot be of the 'hands-off' variety characteristic of Fordism. In lean production suppliers, assemblers and distributors must share information, technologies and personnel among themselves. This sharing allows advances such as 'concurrent engineering', in which the

design of parts made by suppliers is undertaken alongside the design of the final product by the assembly firm. As a result of closer relations within networks of firms, more and more aspects of production and distribution can be 'outsourced' without the overall process of production and distribution breaking down.

Seventh, and finally, in lean production the consumer is integrated in the production process in a qualitatively new way. Consumer demand sets off the 'just-in-time' chain of events. And as product cycles shorten, lean production firms must take advantage of information technologies to respond to shifts in consumer demand in something close to real time.

The authors of an influential study of the global automobile industry, *The Machine That Changed the World: The Story of Lean Production*, believe that the lean production system is in the process of proving its superiority to both Fordist mass production and craft production:

In the end we believe lean production will supplant both mass production and the remaining outposts of craft production in all areas of industrial endeavor to become the standard global production system of the twenty-first century. (Womack *et al.*, 1990: 278)

This is a very controversial claim.⁶ The present paper, however, seeks to pursue a different line of inquiry: if we assume for the sake of the argument that this claim is broadly accurate, how ought we to assess the contemporary relevance of Marx's *Capital*?

In the three volumes of *Capital*, Marx presented a general theory of capitalism, that is, an account of what he took to be the general logic of capital. In the terms of Lakatos's philosophy of science, the systematic ordering of economic categories in *Capital* makes up the 'hard core' of a Marxian research program, orienting empirical investigations of concrete phenomena in capitalism (Smith, 1997). If the results of this research are ultimately inconsistent with the underlying hard core, the research program as a whole is called into question.

In Volume One of *Capital*, Marx asserted that there is a fundamental antagonism between capital and wage labor at the point of production. Many business theorists and mainstream social scientists hold that concrete research into lean production leads to results that are inconsistent with this view of the general nature of

capitalism. They argue that the 'empowerment' of the workforce and the creation of the multiskilled 'knowledge worker' transcend the alienation characteristic of earlier labor practices (Womack *et al.*, 1990; Tapscott and Caston, 1993). In a previous article we defended the continued significance of the first volume of *Capital* by showing that structural coercion, exploitation and the real subsumption of labor under the alien force of capital continue to characterize capital/wage labor relations in lean production (Smith, 1994a). The remainder of the present paper examines central themes of Volume Two of *Capital* in light of lean production.

In Volume Two, Marx took over the conclusion of Volume One that capital accumulation rests upon the exploitation of wage labor in the production process. As Marx later wrote,

This immediate production process does not exhaust the life cycle of capital. In the world as it actually is, it is supplemented by the *process of circulation*, and this formed our object of investigation in the second volume. (Marx, 1981/1894: 117)

In the beginning parts of Volume Two, Marx explored the connection between capital accumulation and circulation through examining the time and the costs it takes for capital to complete the capital circuit $M-C \dots P \dots C'-M'$.⁷ There are certain obvious and straightforward ways the lean production system corroborates this aspect of Marx's general theory of capital. They will be discussed in the following section. The third section introduces an aspect of the lean production system that profoundly calls into question both Volume Two and Marx's general theory of capitalism. In the concluding section a response to this challenge will be presented.

CIRCULATION TIME AND INVENTORY COSTS IN LEAN PRODUCTION

Marx pointed out in Volume Two that, if more circuits of capital are completed within a given period, more capital can be accumulated within that period:

During its circulation time, capital does not function as productive capital, and therefore produces neither commodities nor surplus-value ... The more that the circulation metamorphoses of

capital are only ideal, i.e. the closer the circulation time comes to zero, the more the capital functions, and the greater is its productivity and self-valorization. (Marx, 1978/1885: 203; see also 326, 388–9, 391–2)

From this angle lean production can be seen as an attempt to reduce the turnover time of capital in response to the crisis of Fordism. Many of its concrete features thus justify the emphasis Marx placed on reducing turnover time in his general theory of capital. The just-in-time approach, for example, is designed to make each stage in the production and distribution process respond rapidly to the demands of the succeeding stage, thereby reducing circulation time. All of the innovations designed to reduce 'slack' and make production and distribution 'lean' – such as the elimination of separate quality control departments – are also clearly designed to reduce circulation time. So too are general purpose machines such as robots, computer-controlled machine tools and automatic guided vehicles; they all speed up the process of transforming raw materials into finished products. The drive to shorten product cycles through concurrent engineering is another feature of the lean production model aiming at a reduction of circulation time.

The disaggregation of production through 'outsourcing' must be added to this list. If the stages of production and distribution are all undertaken by a vertically integrated company, a considerable amount of capital is tied up over an extended period of time prior to final sale. In subcontracting arrangements the different stages of the production and distribution process are assigned to different units of capital, each of which proceeds through its own circuit at a much faster rate than capital invested in the vertically integrated firms of Fordism.⁸

A second issue explored in Volume Two of *Capital* concerns the specific role played by inventories in the general circuit of capital. Marx established that, if inventories of unsold commodities build up, at the very least storage costs will cut into the amount of surplus that can be appropriated in a given time period (Marx, 1978/1885: 214ff, 326). Accumulation may even break down completely; perishable inputs and outputs can spoil before playing their role in the accumulation process,⁹ or their prices may fall significantly between the time they are produced and the time they are sold (Marx, 1978/1885: 361–2; 392).

Here, too, Volume Two provides a theoretical framework for comprehending contemporary developments in capitalism. An explicit goal of the just-in-time system is to reduce inventories at every step in the process of production and distribution. The amount of raw materials and partially completed parts shipped by suppliers are reduced; buffers of parts used in production are reduced; relations with distributors are coordinated in order to minimize stocks of unsold inventories. All these measures confirm Marx's thesis in Volume Two that inventories play a crucial role in the process of capital accumulation.

Final sale, the culmination of the $C'-M'$ stage, is, of course, a part of the general circulation of capital. Thus the general drive to reduce circulation time includes the specific imperative to reduce the time taken up by sales:

According to the varying speed with which the capital sheds its commodity form and assumes its money form, i.e. according to the briskness of the sale, the same capital value will serve to a very uneven degree in the formation of products and value, and the scale of the reproduction will expand or contract. (Marx, 1978/1885: 124)

The general importance of inventories in the circulation process likewise holds in this particular context:

The circuit of capital proceeds normally only as long as its various phases pass into each other without delay. If capital comes to a standstill in the ... last phase, $C'-M'$, unsaleable stocks of commodities obstruct the flow of circulation. (Marx, 1978/1885: 133; see also 183ff, 222ff, 331)

Further, fixed capital investment is lost whenever fixed capital is depreciated (physically or morally) prior to the time when it has been fully amortized, and so sales must occur prior to this depreciation if the investment is to be recouped (Marx, 1978/1885: 153, 185, 250, 264). An analogous point holds for circulating constant capital: if raw material prices decline before a stock of commodities produced with those raw materials is sold, the capital invested in those raw materials is devalued (Marx, 1978/1885: 188–9).

As we shall see below, lean production incorporates a continuous feedback loop between capitalist enterprises and consumers

designed to help capital proceed through the $C'-M'$ stage of the capital circuit as rapidly as possible. From this perspective lean production appears to be consistent with Marx's general theory of capitalism as articulated in Volume Two. From another perspective, however, this aspect of lean production calls the very foundation of Marxism into question.

LEAN PRODUCTION: THE INSTITUTIONALIZATION OF CONSUMER SOVEREIGNTY?

Marx certainly did not neglect the theoretical importance of consumption activity. He could not have been more insistent that, if no one is willing to purchase a commodity, the labor that has gone into producing it has been socially wasted; if a commodity has no use-value, it has no value. Consumer behavior thus has an absolutely central role in Marxian value theory. It must also be recalled that for Marx the formation of new consumer desires in capitalism is connected to an extension of human capacities and emancipation from the confines of traditional societies, where rigid customs trapped human development within a narrow set of roles:

[A condition of production founded on capital is] (t)he discovery, creation and satisfaction of new needs arising from society itself; the cultivation of all the qualities of the social human being, production of the same in a form as rich as possible in needs, because rich in qualities and relations ... [Capitalism involves] the developing of a constantly expanding and more comprehensive system of different kinds of labour, different kinds of production, to which a constantly enriched system of needs corresponds. (Marx, 1973/1953: 409)

To concentrate solely on the negative side of consumption in capitalism would be one-sided, and hence undialectical and mistaken. That said, it remains true that perhaps the single most important element in the 'hard core' of the Marxian research program is the proposition that capital accumulation has become the ultimate end of economic life, subsuming all other aspects of the social world to its imperatives. In specific terms, in Marx's view the circuit of

capital accumulation provides the overarching framework within which consumer activity is subsumed as a subsidiary moment:

The volume of the mass of commodities brought into being by capitalist production is determined by the scale of this production and its needs for constant expansion, and not by a predestined ambit of supply and demand, of needs to be satisfied. (Marx, 1978/1885: 156)

In contrast, perhaps the single most important element of the 'hard core' of Marxism's most significant competing research program, neoclassical economics, is the proposition that Marx had everything topsy-turvy: the final purpose of economic activity in capitalism is the satisfaction of consumer demand, and the accumulation of capital is simply a means towards that end. Marxists, of course, have always regarded this notion of consumer sovereignty with hostility, considering it a legitimating ideology masking the essential social relations of capitalism.

It is extremely interesting to note that the leading ideologues of contemporary capitalism, the advocates of lean production, in effect grant that Marx's view was plausible with respect to Fordism. In their view, in Fordism unique individuals confronted mass produced standardized commodities, with an unbridgeable gulf between. So long as this gulf persisted the commodity necessarily remained alien to the consumer, something that did not quite 'fit' his or her specific needs and desires.¹⁰ As a result of this gulf the satisfaction of the wants of individual consumers was not the ultimate goal of economic life. These theorists, however, insist that this alienation of consumers from commodities is not an inherent feature of capitalism. As a result of the technical and organizational changes associated with lean production, the commodity is now no longer a standardized product, but something that closely reflects the unique tastes of individual consumers or narrowly defined consumer segments. With the establishment of a continuous feedback loop between consumers and the product design process, the alienation of the consumer from the object of consumption approaches the vanishing point:

Defining businesses from the producers' point of view, as was done in the industrial [that is, Fordist] economy, is simply no

longer workable. One hallmark of the ambiguous, new economy is the need to define business in terms of customers' changing needs. (Davis, 1987: 195)¹¹

On this view the consumer is the sun around which lean production turns; consumer sovereignty is now being instituted on a mass scale for the first time in human history. If this thesis is correct, economic evolution in capitalism has accomplished something that all of neoclassical economics with its vast mathematical sophistication could not do: provide a convincing empirical refutation of the core Marxian belief that consumer needs must be a secondary matter in capitalism. It is thus worth examining the continuous feedback loop connecting capital and consumers in more detail, based on descriptions found in the lean production literature.

The first step in this loop is the gathering and processing of information regarding patterns in consumer behavior. Various types of information technology are employed to this end, including scanners that instantaneously record consumer purchases at the point of sale; cable or multimedia technologies that enable home shopping; networked computers capable of transmitting consumer preferences directly from distributors to producers; computer memory sufficient to store extensive data bases on individual customers; software allowing these data bases to be manipulated and updated in real time; toll-free numbers for consumers' questions and complaints; interactive voice mail; computer bulletin boards that let firms monitor product user groups; and so on. Firms can also choose to purchase data from information providers (Tapscott and Caston, 1993: 108).

Greater information-gathering and processing capacity allows much more nuanced information regarding consumer desires, information that can be continuously updated. In principle, this information allows lean production enterprises to define the limit point of a 'segment of one', as they discover the product features desired by each individual consumer (Winger and Edelman, 1990).

The next stage is to provide a good or service that has the specific product features desired by individual consumers. When this occurs on a mass scale, the result differs from both the customization of artisan labor and the mass production of the traditional factory. This new phenomenon has been termed 'micromass consumption' or 'mass customization' (Davidow and Malone, 1992: 5; Davis, 1987: *passim*). Production occurs on an extensive scale as

with the mass production of Fordism, but this production is customized to meet the unique needs of individual consumers or narrowly defined groups of consumers.¹²

Mass customization can occur in a variety of fashions. In certain sectors computer screens tied to customer data bases instantaneously provide sellers with extensive information regarding special needs of individual customers. Hotels, airlines and financial services are examples of industries customizing the products or services they sell to the unique needs of their individual clients (Womack, *et al.*, 1990: 169-93; Tapscott and Caston, 1993: 67, 158). In other sectors mass customization can be attained through the design of open-ended products. These are multipurpose consumer goods that can fulfill a variety of different consumer needs depending upon how they are programmed. When the programming is left in the hands of customers, consumers are no longer merely passive recipients of commodities. They are now integrated into the design process as 'prosumers', helping to produce what they consume (Toffler, 1980). Other examples of 'prosumer' activities include printing out your own airline tickets, undertaking home banking, performing diagnostics and repair on electronic machines, using camcorders to produce your own movies, and so on.

Other technologies of mass customization provide manufacturers with the ability to produce a diverse product range, to deliver their products to consumers quickly and to respond rapidly to sudden shifts in consumer demand. The replacement of single-purpose ('dedicated') machinery with general purpose machinery is of great significance in this context. Computer-aided design (CAD) and computer-aided manufacture (CAM) programs allow new products to be introduced without having to replace the machinery controlled by the computers running these programs. This means that the imperative to extend product runs in order to recoup the costs of the machines loses its force.

Once designs have been specified, they can be transmitted instantaneously to computers operating on the shop floor, setting in motion the production of products embodying that design. In this manner the time between the commencement of the initial design phase and the delivery of a new product line to consumers is shortened considerably. In Japan, the goal is to have a car roll off the assembly line with the specifications ordered by an individual consumer and deliver it to that consumer within 72 hours of the order being made. Japanese auto manufacturers also cut the period

between the beginning of a new design process and the bringing of the new car to market to 46 months, as opposed to the 60 months taken by Fordist firms in the USA. This time advantage means that lean production enterprises can design cars taking into account more recent shifts in consumer preferences.¹³ With shorter life spans, Japanese firms produced fewer units of every model than US or European manufacturers did prior to adapting lean production (five hundred thousand versus almost two million) (Womack *et al.*, 1990: 111, 124). Also essential here are advances in transportation technology that deliver the manufactured item in a timely fashion.¹⁴

Mass customization requires organizational innovations as well as technical innovations. The just-in-time production system abolishes large stocks of unsold inventory and partially finished products, removing one reason for the reluctance of Fordist firms to make quick changes in product lines (Tapscott and Caston, 1993: 85, 98). The decentralization of decision-making, sometimes referred to as the move to the 'horizontal corporation' (Byrne, 1993), allows a more rapid response to shifts in consumer demand than the bureaucratic hierarchies of the typical Fordist firm. Replacing the detail laborer with teams of multiskilled workers removes another barrier. Product design teams including service and marketing representatives alongside product engineers warrant special mention.¹⁵ These teams enable product designers to take into account up-to-date knowledge of consumer trends. They also provide a site where customer complaints and questions can be transformed into ideas for product innovations. The move to concurrent engineering is another organizational change enabling corporations to adjust to shifts in consumer preferences more rapidly. This term refers to the process whereby the different parts going into a final product are designed simultaneously, including parts produced by subcontractors (Clark and Fujimoto, 1989).

The feedback process connecting consumers and manufacturers is completed with the monitoring of consumer response to the introduction of the new product or service. Information-gathering technologies enable capitalist enterprises to measure levels of customer satisfaction, to determine whether the complexity of the product design matches the competence levels of consumers, and so on. Lean production technologies and organizational forms allow a close to instantaneous shift in product mix and product design in response to this feedback, thus beginning the cycle anew.

All of these features of lean production confirm Marx's emphasis in Volume Two on the importance of reducing the time capital is tied up in the $C'-M'$ stage of the capital circuit. The challenge to Marxian theory does not lie here, but with the question of the proper categorization of the social relations underlying this stage of the circuit. If we abstract from transactions among different units of capital, the $C'-M'$ process defines the capital/consumer relation. The advocates of lean production claim that this relation is now qualitatively different from what it was in earlier stages of capitalism. The very logic of the capitalist system has been transformed in a way Marxian theory is incapable of grasping. Enterprises and consumers are now connected in a long-term relationship where the satisfaction of consumer desires has become the goal of economic activity: 'The goal of ... corporations is to maximize the binding energy between themselves and their customers. This is done by maximizing customers' satisfaction and by enlisting the customer into a co-destiny relation' (Davidow and Malone, 1992: 222).

In this 'co-destiny relation' consumers invest the money required to purchase the commodity and the time necessary to educate themselves regarding the company's product line. In return they receive up-to-date information regarding available products, a higher level of service, the opportunity to provide feedback affecting future product development, special discounts and perhaps permission to tap into a company's data base to track their orders and shipments. Consumers develop a stake in the company's future as a result of this expenditure of time and money. This is a long-term commitment; it may take years for an enterprise to become credible, to build a service infrastructure, to establish deep relationships with customers, but when it does, it can enjoy customer loyalty through a number of product generations.¹⁶ With so many resources going into the maintenance of this co-destiny relation, the customer is said to be *in* the lean production firm, not outside it. In fact, customers are supposedly 'inside' the firm in as deep a sense as the firm's stockholders:

Ultimately, the customer ... will most resemble the shareholders of that corporation. Both will share a common commitment to the company's long-term success ... (T)he consumer of expensive goods such as cars or appliances, may have an even greater stake than the shareholder, in that he or she will be less likely to jump

to a competitor for only a marginal gain. (Davidow and Malone, 1992: 229)

Most of the attention on the lean production model has been directed towards the capital/wage labor relation and the relations among different units of capital in networks. Just as central to the analysis of this model, however, is the capital/consumer relation. If the claim that lean production truly institutes consumer sovereignty could be redeemed, the Marxist analysis of capitalism in Volume Two and elsewhere would be undermined. Can this claim be redeemed?

A CRITICAL LOOK AT THE CAPITAL/CONSUMER RELATION IN LEAN PRODUCTION

We grant for the sake of the argument that in lean production consumer demand is incorporated into design and production in a qualitatively new way, arguing that, even under this assumption, the language of consumer sovereignty mystifies and distorts the true state of affairs. The argument can be divided into two parts. The first concerns the limits of consumer power in lean production, and the second the ways in which consumer activity remains a subordinate moment within the circuit of capital accumulation.

The Subservience of the Consumer in the Age of Mass Customization

The first point to note here is that the role of consumers in the design process can increase without undermining the asymmetry of power between capital and consumers. Three questions are relevant in this context: Which group had the power to institute the changes in the capital/consumer relation? What was its motivation for doing so? And which has more power to ensure that its interests will be met as the transformation continues? With regard to the first question, the transformation in consumer relations was initiated by capital. What Kenney and Florida, who are generally quite sympathetic to lean production, note in their discussion of Japan can be generalized:

Japan is also witnessing the fragmentation of mass consumption in line with the rise of innovation-mediated production. This is

not the illusory, democratic fragmentation championed by U.S. marketers, economists, and post-modern theorists, but rather a structured, rational, and almost planned fragmentation which is informed by the production capabilities of innovation-mediated production. (Kenney and Florida, 1993: 320)¹⁷

The motivation for making this transition is likewise clear. The integration of consumers into the design process in lean production is not an ultimate end in itself, but merely a means to expand capital accumulation. This integration is a strategy undertaken by capital in the hope that it will increase the rate of consumption, a point acknowledged even by one of the most vociferous advocates of this version of capitalism:

Shifting the determination of a product's final configuration downstream, into the space of the consumer, has very practical consequences. Consumers who create and control the manufacture of their goods and services are likely to consume more than people who do not. (Davis, 1987: 55)

Who, finally, has more power to ensure that the transformation of capital/consumer relations furthers its interests? The notion that the consumer in lean production is as much of a stakeholder in the lean production enterprise as stockholders is a classic instance of ideological nonsense. The managers of enterprises remain agents of capital investors, and there are numerous social mechanisms in place to ensure that they generally act in a manner that furthers the interests of those investors. This 'principal/agent' relation does not extend to consumers. There are no representatives of consumer interests serving on boards of directors, overseeing the actions of management.¹⁸

The question of the structural balance of power between capital and consumers is surely fundamental in the present discussion. However a study of the effects of consumption in lean production on the subjectivity of consumers is also of great relevance here. Such a study results in the following points, all of which reinforce the rejection of the claim that lean production institutes true consumer sovereignty.

In the first place, for the circuit of capital accumulation to proceed smoothly, it is not enough that commodities be produced and purchased within a given time period; the objects purchased

must be consumed within a given period as well, so that the consumer can return to the market ready to make the next round of purchases. The shorter the 'socially necessary consumption time', the more quickly capital passes through its circuit, and so the more capital can be accumulated in a given period, everything else being equal. In lean production a reduction in socially necessary consumption time is to be accomplished through shorter product cycles, more frequent design changes and increasing emphasis on fashion (Harvey, 1989). Now the more lean production successfully increases the rate of consumption, the greater the pressure for consumers to define themselves in terms of consumption activity ('you are what you buy'). Tremendous psychic energy must be expended in order to negotiate the proliferation of symbolic values taken on by various commodities. This intensification of consumption profoundly shapes human subjectivity in a way that encourages it to fragment and dissolve; that is, to be less 'sovereign'. The advocates of lean production thus wallow in incoherence: they defend a system that tends to lead to a 'postmodern' fragmentation of the self by means of an appeal to the traditional notion of an integrated ('sovereign') subject.

This point can be made from another angle. Commodities promise a fulfillment they cannot provide; if they did, there would be less reason to return to the market for other commodity purchases. Consumerism, as Adorno and Benjamin noted, has the same structure as drug addiction: purchasing the commodity brings about a temporary high; then you crash and have to make another purchase to get another fix. As the pace of consumption increases, lean production tends to leave the consumer in a state of perpetually unsatisfied desire and anxiety, interrupted by the fleeting rush of a purchase. An addict does not suddenly become 'sovereign' simply because he or she participates in drug design.

Secondly, the drug metaphor of course captures only a tendency in lean production; there will be many consumers for whom the metaphor is not applicable. It might seem that for them, at least, measures to incorporate consumer desires in design and production do remove the gulf between consumers and commodities, thus making the case for consumer sovereignty more plausible. The situation, however, is more complex than this.

Even when consumers purchase commodities that have been customized to their specifications there can still be a gulf between consumers and products. A gap arises whenever purchases contribute

to results that go against collective interests with which consumers identify. This problem tends to arise in capitalism as a result of the limits of the price mechanism as a means for transmitting information. Market prices convey information regarding the effective demand for a commodity, the internal costs of its production (that is, costs the producing firm itself must pay) and prevailing profits rates. Prices, however, are not an efficient manner of transmitting the external costs of production imposed on workers and their communities. Examples of these external costs include the physical and psychological stress inflicted on the workforce and environmental damages.

Let us suppose that a given set of consumers does not wish to inflict avoidable harm on either the workforce or the environment. The prices of the commodities they are considering purchasing do not reveal whether the firms producing these commodities inflict such harm. The information on these matters available to consumers outside of the price mechanism is often unreliable and conflicting, demanding a considerable amount of time and training to sort out. And so consumers who wish to limit environmental degradation and to promote safe work conditions may make purchases furthering precisely what they wish to avoid. In these sorts of cases it makes sense to say that consumers are alienated from the commodities they have purchased, even if these commodities have been customized with them in mind (Smith, 1995).

Our third point concerns another difficulty which stems from the limits of the commodity form. Capitalism certainly possesses an astonishing ability to incorporate diverse forms of experience into the commodification process. Sexuality and its signifiers are offered for sale everywhere, evoking desires and anxieties in equal measure. Art works become objects of commercial speculation. Political activism is replaced by the purchase of T-shirts or compact disks that proclaim support for some cause or other. Commodity exchange can even assimilate rebellions against commodity society; surrealism becomes just another technique employed to get the consumer's attention, and punk sets off a new round of clothing fashions.

Commodification comes at a cost. Something in human life has been impoverished when sexuality, aesthetic experience, political activism and rebellion are reduced to the commodity form.¹⁹ This impoverishment is not removed simply because in lean production many commodities are customized to specifications defined by

individual consumers or small groups of consumers. Immersion in those commodities continues to cut the consumer off from possibilities opened up by non-commodifiable experiences. Lean production, no less than other variants of capitalism, leads to the systematic neglect of consumer wants and needs that do not fit the commodity form. In this sense a gulf remains between the consumer and commodities, regardless of whether those commodities have been customized to the specifications desired by individual consumers.

Fourth, defenders of lean production claim that the consumer is the sun around which the capitalist system now turns. If that is the case, how do we explain the all-pervasive attempts by capitalist firms to manipulate the psychic dispositions of consumers? Inflated if not fraudulent claims intrude into more and more nooks and crannies of everyday life. They are hammered home through the repetition of images and music, by-passing the conscious reasoning process and appealing directly to subconscious desires. Advertising expenditures in the USA jumped from \$61 billion in 1981 to over \$130 billion in 1994 (Rank, 1994). People in the USA today are exposed to 3000 marketing messages a day. By the time of high school graduation, the average 18-year-old in the USA has had 350 000 commercials inflicted upon him or her (Matsu, 1994). This surely counts as the most extensive and sophisticated propaganda system ever seen on the face of the planet.²⁰ And ever-new technologies for distributing advertisements and testing their effectiveness are being devised, including color printers installed in homes that periodically produce coupons and color brochures, television sets in airports and supermarkets that play advertisements continuously, and heat sensors installed in home television sets that feel when a viewer from a particular demographic category is watching the advertisement.

Most manipulative of all, of course, are advertisements aimed at the young, who are less cognizant of the techniques of persuasion (Kline, 1993). There is every reason to believe that such advertisements will increase with the move to lean production. Lean production firms hope to provide consumers with a continuous product growth path, from cradle to grave. Advertisements aimed at children play a crucial role in integrating them into the vaunted 'co-destiny' relation.

Despite all of the above points, it cannot be denied that in lean production the desires of consumers do directly shape processes of

production in a way that is qualitatively new. But talk of consumer 'empowerment' in lean production runs into some of the same difficulties as talk of worker empowerment. I would like to develop this point by drawing out an analogy between formal and real subsumption in the capital/wage labor relation and in the capital/consumer relation.

Wage labor is formally subsumed under capital when contractual agreements between capital and labor bring the labor force under the supervision of capital in factories. The real subsumption of labor occurs when the representatives of capital go beyond mere supervision and transform the details of the labor process to further their interests. The real subsumption of labor is rather obvious when management dictates decrees unilaterally from above, as in Fordism. In lean production things are more subtle. Management mobilizes the intelligence and creativity of the workforce, trying to objectify the insights of workers in a form that can then be appropriated. Once appropriated, these insights can be used against the interests of labor, as they are when workers' suggestions lead to speed-ups and higher stress levels. However different this may be from previous arrangements at the workplace, this too counts as a real subsumption of labor under capital (Smith, 1994a, 1994b).

The distinction between formal and real subsumption can also be drawn in the realm of consumption. Consumers can be said to be formally subsumed under capital when they are tied to capital by contractual arrangements of purchase alone. A process of real subsumption is set off whenever manufacturers and distributors attempt to go beyond this and actively mould consumer demand. The real subsumption of consumers is rather obvious where the manipulations of mass advertising are concerned. But more subtle forms of real subsumption are also possible in the realm of consumption.

In lean production, firms attempt to mobilize consumers' own definition of their needs. The use of information technology to track individual consumer's responses instantaneously and continuously can be seen as an objectification of the consumer's subjectivity and self-understanding. Once this information has been objectified, it can be appropriated by manufacturers and distributors. Information technologies allow enterprises to know the name and address of each person who buys a product and to maintain files on their purchase history²¹ (Hapoienu, 1990; Davis, 1989; McDonough, 1988). Once this information has been appropriated in this manner,

it can be used against the consumers who were its source. With these data they can then send individual messages to each customer ('micromarketing') (Mayer, 1990). Messages addressed to an anonymous mass are less effective than those directed to you personally; the more one knows about you, the more open to manipulation you are.²² This is surely a form of the real subsumption of the consumer under capital.²³

This completes the first half of a defense of the continued relevance of the second volume of *Capital* in the epoch of lean production. The next task is to shift our focus to the circuit of capital accumulation and the place of consumer activity within it.

Consumption and the Reproduction of the Circuit of Capital Accumulation

If we exclude the portion of surplus value devoted to capitalists' consumption, the capital/consumer relation takes the form of a circuit in which wage laborers exchange their labor power for money ($L-M$) and then use that money to purchase commodities for their personal consumption ($M-C$). In Volume Two Marx explored how this $L-M-C$ circuit of consumption remains but a moment in the general process of circulation in capitalism, a moment that stands in a number of functional relations with the circuit of capital, as follows. The circuit of consumption for wage laborers produces the commodity, labor power, which when sold takes on the reified form of variable capital. Engaging in acts of consumption by no means enables wage laborers to escape this reification:

The worker spends the money he receives on maintaining his labour-power, and thus – if we consider the capitalist class and the working class as a whole – on maintaining for the capitalist the only instrument by means of which he can remain a capitalist. (Marx, 1978/1885: 457)²⁴

The purchase of commodities, that is, the $M-C$ stage of the $L-M-C$ circuit, is simultaneously the $C'-M'$ stage of the capital circuit of a firm in Department II, the division devoted to the production of means of consumption (Marx, 1978/1885: 138, 369–70, 384–5, 408, 517–18). In other words, the commodity purchases of wage laborers allow units of capital in Department II to realize

surplus value, to accumulate capital. With this capital they can then turn around and invest in variable capital, continuing the reification and exploitation of their wage laborers.

The variable capital invested in the purchase of labor power ultimately stems from the activity of wage laborers themselves: 'The money that is here advanced to the worker is only the transformed equivalent form of a portion of the commodity value that he himself produces' (Marx, 1978/1885: 151). Again

The constant purchase and sale of labour-power perpetuates the position of labour-power as an element of capital, and in this way capital appears as the creator of commodities, articles of use that have a value; this is also how the portion of capital that buys labour-power is regularly restored by the product of labour-power itself, so that the worker himself constantly creates the capital fund out of which he is paid. (Marx, 1978/1885: 457)

These passages take us to the heart of the Marxian claim that capital accumulation, not consumer sovereignty, is the alpha and omega point of the capitalist mode of production. When we turn to the lean production literature, are any concrete phenomena described that might lead us to question this part of Marx's general theory of capitalism? As far as one can tell, the answer must be no. Not even the most rabid advocate of lean production has ever claimed that one can escape one's class position in the accumulation process through consumer spending on commodities. At this crucial point in the argument the defenders of lean production are silent.

The more closely one considers the way consumer relations in lean production are shaped by class dynamics, the less plausible the claim that consumers are at the center of this version of capitalism. Under the capital form only those needs and wants that have sufficient purchasing power behind them are socially acknowledged. What counts is not 'demand' per se, but *effective* demand. And the first and foremost factor determining the level of a social agent's effective demand is his or her place in the circuit of capital accumulation. Those who own and control capital necessarily tend to enjoy high levels of effective demand, while the consumption opportunities of those who do not necessarily tend to be much more precarious. Lean production does nothing to reverse this; if anything it exacerbates the differences in consumption opportunities

of the two groups. In lean production there is a significant amount of involuntary unemployment.²⁵ There are also growing numbers of part-time and temporary workers, especially among subcontractors. Involuntary unemployment, part-time work and temporary work all significantly squeeze the purchasing power of these (potential) consumers, restricting their ability to enjoy the wonders of mass customization. Lean production is also correlated with a global fragmentation of the workforce, as capital successfully searches for regions where it can combine high levels of productivity with low wages (Shaiken, 1990). The resulting pressure on real wages ensures that the gulf between consumers and consumable commodities will be exacerbated, even for many of those fortunate enough to retain full-time employment.

We must conclude that the arguments asserting that lean production inaugurates a golden age of consumer sovereignty ring hollow indeed. The asymmetry in economic power between units of capital and consumers is, if anything, yet more pronounced in lean production. And talk of consumer sovereignty mystifies an economic system where the imperatives of capital accumulation continue to subordinate all other social considerations. As long as this is so, Marxian theory in general, and Volume Two of *Capital* in particular, will remain the starting-point for any serious attempt to comprehend the social world in which we live.

Notes

1. This point, and those that follow, hold for developments in both the factory and the office.
2. The term 'value' here is not to be taken in the technical sense employed in the labor theory of value, but in the loose sense found in the literature on lean production.
3. To some extent shorter runs of more diverse products can be accomplished with conventional technologies. While US manufacturers chased the dream of full automation, the Japanese learned how to create what were in effect 'multifunctional' machines through combining low-cost conventional machines in manufacturing cells (Warner, 1989: 276). It is also clear, however, that lean production systems tend to evolve such that conventional machines are replaced by programmable multifunctional machines, capable of switching from one production application to another at low cost (Ohno, 1988; Maleki, 1991).
4. Economies of scale play the biggest role in the production of modules that can go into a range of different sorts of final products (Reich, 1991: 112).

5. Reich shows how the most profitable firms in steelmaking, plastics, tool and die casting, semiconductors, software, telecommunications, trucking, rail and air freight, and finance all exemplify this principle (Reich, 1991: 82-3).
6. For the debate between critics and defenders of this thesis see Babson (1995).
7. The $M-C$ stage in the circuit is the investment of money capital in the commodities necessary for production; that is, means of production and labor power. The production process, P , then results in a new commodity, C' , which when sold at its value results in a return (M') exceeding the initial money capital invested. Once deductions for the personal consumption of the capitalist, state taxes and so on, have been made, this money capital can then be invested anew, initiating a new circuit. For an account of the permutations of this circuit explored by Marx, see Arthur, in Chapter 5 of this volume.
8. This by no means implies that vertical integration disappears with lean production. Vertical integration tends to lower input costs, since the final cost of a machine produced within an enterprise is simply the sum of the costs required to produce it, while the price of the same machine purchased from another firm includes the profits of that firm along with the costs of production. David Harvey surmises that there is an equilibrium point at which the trade-off between centralization and decentralization is optimal for accumulation, that is, where lower input costs from further vertical integration would no longer outweigh the increased costs stemming from a longer circulation time (Harvey, 1982). Fordism can be seen as an organizational structure that pursued vertical integration past the point where its advantages compensated for the increase in circulation time. Lean production can be seen as an attempt to correct this imbalance; the disaggregation of production speeds up the circulation process, allowing more capital to be accumulated in a given unit of time. As an added bonus, information technologies now enable core firms to monitor their subcontractors closely, so that many benefits of vertical integration can be enjoyed without its costs.
9. 'The very form of existence of commodities, their existence as use-values, sets certain limits to the circulation of commodity capital $C'-M'$. If they do not enter into productive or individual consumption within a certain interval of time, according to their particular characteristics, in other words, if they are not sold within a definite time, then they get spoiled, and lose, together with their use-value, the property of being bearers of exchange-value. Both the capital value contained in them, and the surplus value added to it are lost (Marx, 1978/1885: 205-6).
10. It is true that in Fordism market segmentation separated the items of mass consumption into distinct niches according to class, geography, age, sex, race and other categories. Soon after Henry Ford proclaimed that consumers could have the Model T in any color they wanted so long as it was black, General Motors proceeded to develop different products for different segments of the automobile

- market, thereby winning market share from Ford. But these segments were defined in relatively broad terms. There was nothing in mass production that approached an affirmation of the individual uniqueness of consumers. This was lost with the move away from the craft labor of artisan workshops.
11. 'The challenge of the new business era, with its virtual products, is to adapt the product to the consumer, not the consumer to the product' (Davidow and Malone, 1992: 219).
 12. 'Mass customization of markets means that the same large number of customers can be reached as in the mass markets of the industrial [that is, Fordist] economy, and simultaneously they can be treated individually as in the customized markets of pre-industrial economies' (Davis, 1987: 169).
 13. See Kenney and Florida (1993: 302-3) for other examples of compressed product life cycles.
 14. Cf. Marx (1978/1885: 12, 225 ff, 327, 329) for discussion of the way a tendency to develop transportation technologies can be derived from the capital form. This tendency is amply illustrated in lean production.
 15. This is a central feature of the management approach termed 'quality function deployment', the goal of which is to reconcile what consumers want with what engineers can build (Hauser and Clausing, 1988; see also Womack *et al.*, 1990: 181).
 16. 'Often incumbency - being the first one in the door - is a special advantage as the customer invests in learning a specific application, achieves benefits from it, and forms the ties that bond with the supplier' (Tapscott and Caston, 1993: 105). This point is extremely important in lean production. When start-up costs are high and product life-spans short, many manufacturers may not see a return on new product lines until the third or fourth generation. This means that the rewards of retaining customers are quite high. It costs five times more to create new customers than to keep old ones, and retaining 2 per cent more customers is equivalent to cutting costs by 10 per cent (Davidow and Malone, 1992: 222, 153).
 17. They provide an example later: 'The Japanese automobile industry is moving toward marketing techniques that resemble those of the high-fashion industry, with constantly changing designs and enforced scarcity through artificially limited numbers or limited time periods in which to order the car' (Kenney and Florida, 1993: 321-2) This 'fashion mentality' has spread to other sectors as well, such as consumer electronics.
 18. For interesting discussions of the way consumer interests might be represented under socialism, see Devine (1988), Elson (1988) and Schweickert (1994).
 19. This claim rests upon an implicit philosophical anthropology; that is, a position regarding the conditions of the possibility of human flourishing and self-realization. There is not space here to develop such an anthropology explicitly. For steps in this direction see Geras (1983).

20. It is possible to categorize advertising as a pervasive system of manipulation without following Adorno and others in the assumption that advertisements (and other artifacts of the culture industry) have removed the possibility of autonomous action. Recipients of advertisements are not passive automatons; they are often able to negotiate their way through the maze of advertising images, formulating meanings for advertisements that do not necessarily coincide with those intended. This does not lessen the manipulative nature of the advertising system. An attempt at manipulation does not suddenly become something else when the attempt fails or only partially succeeds.
21. When the information highway is in place and more of our lives becomes mediated by digital transmissions, amassing these sorts of data bases will become immensely easier.
22. Future developments along these lines can be anticipated: 'Suppose color preferences are genetically linked to personality; people who respond to the color red may be more predisposed to consider new stimuli, while people who respond to blue are more likely to be persuaded by intimidating messages. So replies to color-coded direct-mail campaigns would generate letters tailored to genetically based personality correlations. Assuming that more and more genetically linked behavioral traits were discovered, advertisers and marketers could build genographic databases of their customers - just as they build demographic and psychographic databases today' (Schrage, 1993).
23. This has political dimensions as well. Politicians will be able to customize a different version of their agenda to each voter, based on data bases collecting information on what that individual voter has watched and purchased on multimedia information systems.
24. Assume that there are x workers, each of whom is paid \$100. As Marx wrote, 'With this capital of x times 100, the capitalist class buys a certain quantity of labour-power, or pays wages to a certain number of workers - first transaction. The workers use this sum to buy a certain value of commodities from the capitalists - second transaction. This process is constantly repeated. The sum of x time 100 can therefore never enable the working class to buy the part of the product which contains the constant capital, let alone the surplus-value which belongs to the capitalists. The workers can buy with x times 100 only a portion of value which represents the value of the variable capital advanced' (Marx, 1978/1885: 422; see also 155, 194, 197-8, 290-91, 454ff, 515-24).
25. Kenney and Florida write that, in Japan, where the lean production model has been instituted the longest, 'automation is not an immediate threat to consumer demand because of the long-term employment commitment' (Kenney and Florida, 1993: 317-18). In this passage they suddenly forget what they otherwise know quite well: in Japan and elsewhere only a relatively small percentage of the workforce in lean production systems enjoy job guarantees. In these societies unemployment continues to occur as the result of technical

changes, shifts in demand, opportunities for speculation and cyclical downswings; it is simply shifted to smaller firms on the periphery of the 'core' firms.

References

- Aoki, Masahiko (1988) *Information, Incentives and Bargaining in the Japanese Economy*, Cambridge University Press, Cambridge.
- Babson, Steve (1995) *Lean Work*, Wayne State University Press, Detroit.
- Bonefeld, Werner and J. Holloway (eds) (1991) *Post-Fordism & Social Form*, Macmillan, London.
- Byrne, John (1993) 'The Horizontal Corporation', *Business Week*, 20 December: 76-81.
- Clark, Kim and T. Fujimoto (1989) 'Reducing the Time to Market: The Case of the World Auto Industry', *Design Management Journal*, Fall.
- Davidow, William and M. Malone (1992) *The Virtual Corporation: Structuring and Revitalizing the Corporation for the 21st Century*, Edward Burlingame Books/HarperBusiness, New York.
- Davis, Stanley (1987) *Future Perfect*, Addison-Wesley, Reading, Mass.
- Davis, Stanley (1989) 'From "Future Perfect": Mass Customizing', *Planning Review*, March/April.
- Dertouzos, Michael, R. Lester, R. Solow and the MIT Commission on Industrial Productivity (1991) *Made in America: Regaining the Productive Edge*, MIT Press, Cambridge, Mass.
- Devine, Pat (1988) *Democracy and Economic Planning*, Polity Press, Cambridge.
- Elson, Diane (1988) 'Market Socialism or Socialization of the Market?', *New Left Review*, no. 172.
- Forester, John (ed.) (1989) *Computers and the Human Context*, MIT Press, Cambridge, Mass.
- Geras, Norman (1983) *Marx and Human Nature*, Verso Press, London.
- Glick, Mark and R. Brenner (1991) 'The Regulation Approach: Theory and History', *New Left Review*, no. 188.
- Hapoienu, Spencer (1990) 'The rise of Micromarketing', *The Journal of Business Strategy*, 37-42, December.
- Harvey, David (1982) *The Limits to Capital*, Oxford University Press, New York.
- Harvey, David (1989) *The Condition of Postmodernity*, Blackwell, Cambridge.
- Hauser, John and D. Clausing (1988) 'The House of Quality', *Harvard Business Review*, May-June: 63-73.
- Hounshell, David (1984) *From the American System to Mass Production, 1820-1932*, Johns Hopkins Press, Baltimore.
- Imai, Masaaki (1986) *Kaizen*, McGraw-Hill, Cambridge, Mass.
- Kenney, Martin and R. Florida (1993) *Beyond Mass Production: The Japanese System and Its Transfer to the U.S.*, Oxford University Press, Oxford.
- Kline, Stephen (1993) *Out of the Garden: Toys, TV and Children's Culture in the Age of Marketing*, Verso Press, New York.
- Koike, Kazuo (1988) *Understanding Industrial Relations in Japan*, St Martin's Press, New York.
- Maleki, Reza (1991) *Flexible Manufacturing System*, Prentice-Hall, New York.
- Marx, Karl (1973/1953) *Grundrisse*, Vintage, New York.
- Marx, Karl (1978/1885) *Capital: Volume II*, Penguin, New York.
- Marx, Karl (1981/1894) *Capital: Volume III*, Penguin, New York.
- Matsu, Kono (1994) 'From Advertising to Subvertising', *Adbusters*, Winter: 77-80.
- Mayer, Martin (1990) 'Scanning the Future', *Forbes*, 15 October.
- McDonough, John (1988) 'A Culture of Choice', *Advertising Age*, 9 November: 164-7.
- Moseley, Fred and Martha Campbell (eds) (1997) *New Investigations of Marx's Method*, Humanities Press, Atlantic Highlands, NJ.
- Ohno, Taiichi (1988) *Toyota Production Systems*, Productivity Press, Cambridge, Mass.
- Rank, Hugh (1994) 'Serious Ads and Other Channel Grazing Hazards', *Adbusters*, Winter: 42-3.
- Reich, Robert (1991) *The Work of Nations: Preparing Ourselves for 21st Century Capitalism*, Knopf, New York.
- Schrage, Michael (1993) 'Will DNA Be The Next Marketing Tool?' *San Francisco Chronicle*, 12 December: D1.
- Schweickert, David (1994) *Against Capitalism*, Cambridge University Press, New York.
- Shaiken, Harley (1990) *Mexico in the Global Economy: High Technology and Work Organization in Export Industries*, Center for U.S.-Mexican Studies Monograph Series, 33, San Diego.
- Smith, Tony (1994a) 'Flexible Production and the Capital/Wage Labour Relation in Manufacturing', *Capital & Class*, no. 53.
- Smith, Tony (1994b) *Lean Production: A Capitalist Utopia?* The International Institute for Research and Education, Amsterdam.
- Smith, Tony (1995) 'The Case Against Free Market Environmentalism', *Journal of Agricultural and Environmental Ethics*, vol. 8, no. 2.
- Smith Tony (1997) 'Marx's Theory of Social Forms and Lakatos's Methodology of Scientific Research Programs', in Moseley and Campbell.
- Tapscott, Don and A. Caston (1993) *Paradigm Shift: The New Promise of Information Technology*, McGraw-Hill, New York.
- Toffler, Alvin (1980) *The Third Wave*, William Morrow, New York.
- Walker, Richard (1989) 'Machinery, Labour and Location', in Wood.
- Warner, Timothy (1989) 'Information Technology as a Competitive Burden', in Forester.
- Winger, Richard and D. Edelman (1990) 'The Art of Selling to a Segment of One', *Business Month*, January: 79.
- Womack, James P, D. Jones and D. Roos (1990) *The Machine that Changed the World: The Story of Lean Production*, MIT Press, Cambridge, Mass.
- Wood, Stephen (ed.) (1989) *The Transformation of Work?*, Unwin Hyman, London.

5

The Fluidity of Capital and the Logic of the Concept

Christopher J Arthur

'Capital can be understood only as motion, not as a thing at rest.'
(Marx)

INTRODUCTION

Capital, Volume Two (Book II, 'The Process of Circulation of Capital) is the site of a key feature of Marx's method. For the importance of his introduction of the concept of 'circuits of capital' (outlined in Part One, chs 1–4) cannot be overestimated. Whereas neoclassicals explicitly, and the classicals for the most part (if implicitly), as well as many Marxists, all deploy as a key analytical construct the notion of equilibrium, for Marx it is the concept of a *circuit* that characterizes his grasp of capital. Furthermore, except in a special case, the circuit does not return to the beginning but is part of a spiral of accumulation, theoretically therefore much more appropriate to the study of the real world, which knows no equilibrium but is strongly marked by growth.

It should be more widely recognized that economics was shunted down the wrong line when it became obsessed with the notion of equilibrium. We must reverse the verdict of Bortkiewicz, who complained about Marx's 'successivist prejudice'¹ and say that successivism is just what is profound and right about Marx's insight. For the life and reproduction of capital is essentially in the form of a circuit. This itself may be viewed as the imbrication of three circuits, according to Marx. Philosophically the intertwining of the three circuits Marx distinguished is by no means a trivial matter. It can, we hope to show, be illuminated if we bear in mind as its

background Marx's knowledge of Hegel's *Logic*, and especially therein the theory of the syllogism.

It is of course necessary to situate Book II, 'The process of circulation of capital', and the discussion of the circuit therein, as a successor to Book I, 'The process of production of capital'. This is what we now turn to consider. After that some attention will be given to the early drafts before addressing Book II proper.

FROM 'BOOK I' TO 'BOOK II'

Right from the start, Marx stressed that capital is essentially a processual form. In the circulation form $M-C-M'$, he said in Book I, value 'presents itself as a self-moving substance' for which commodities (C) and money (M) are both mere forms; value therefore now becomes 'value in process, money in process, and, as such, capital'.² Likewise, already in the first book, he stressed that, not only is capital 'value in process', this process forms a *cycle*. 'The transformation of a sum of money into means of production and labour power is the first phase of the movement.' After the second phase, the process of production, 'commodities must then be thrown back into the sphere of circulation' so as to complete their final phase of sale. 'This cycle, in which the same phases are continually gone through in succession, forms the circulation of capital.' And he added: 'The detailed analysis of the process will be found in Book II.'³

The upshot of the first book of *Capital* is that Marx established the form of industrial capital as the following circuit: $M-C \dots P \dots C'-M'$, in which *M* and *C* stand for money and commodities and *P* indicates the interruption of the circulation process by the operation of production. He points out in Book II that all the attention then was on the significance of production for capital's valorization, but now the circuit as a whole is to be investigated. The notion of circuit arises out of Book I, then, because we learnt there that capital is value-in-process, that it cannot therefore be studied in its fixity (whether in money, or means of production, or stocks of commodities). Thus Marx's conception of capital is that it exists essentially as a circuit of successive moments. For the key aspect of the value-form of capital is its continual *advance*, through its reflux to itself of its increment, and the spiral of valorization set in train therewith.

It is already clear in Book I that the concept of valorization itself involves the comparison of *successive* quantities. Indeed, in our view, it is only this that establishes the category of value with any substantial content; it is the key argument Marx deployed against relativists like Samuel Bailey. He does so in Book II itself, in fact, so let us draw on that.

Bailey insisted with fanatical persistence that the only notion of value required by political economy was that of exchange value, and not any intrinsic value; and, indeed, as long as values existing contemporaneously are concerned he had a very strong case, as also when he attacked the notion of absolute value hankered after by the Ricardians to solve the problem of a standard measure. However, Bailey rejected also the purpose of the Ricardians here, to measure value across time, asserting boldly that this made no sense because exchange value existed only in real exchange relations, and there could not be real relations of this sort across time. This last is the point on which Marx took issue with him. Time is of the essence of all economies, but of *capital above all*. For the whole idea of valorization rests conceptually on just such a comparison of capital value across time. It is between these times that capital accomplishes its circuit of transformations. Marx distinguished 'the *circulation* of money', which Bailey would have had no trouble understanding as a mediation of commodity circulation, from the '*circuit* of money – i.e. – the *return* of money to its starting point – in as much as this forms a moment of the turnover of capital' (416).⁴

Marx says that the 'sequence of metamorphoses of capital in process implies the continuous comparison of the change in value brought about in the circuit with the original value of the capital' (185). This whole idea Bailey believed to be a product of self-thinking abstraction, an unreal illusion; but, as Marx points out, on the contrary, the movement of abstraction *in practice* makes it a reality. It acts, therefore it exists.

Those [such as Bailey] who consider the autonomization [*Verselbstständigung*] of value a mere abstraction forget that the movement of industrial capital is this abstraction in action. Here value passes through different forms, different movements in which it is both preserved and increases, is valorized.(185)

Bailey, says Marx, does not see that 'value functions as capital only in so far as it remains identical with itself and is compared

with itself in the different phases of its circuit, which are in no way "contemporary", but rather occur in succession' (186).

EARLY DRAFTS

In examining the evolution of Book II, 'The Process of Circulation of Capital' there are to be noted three drafts prior to those on which Engels based the edition we have in Volume Two.

Draft 1 is that in the latter part of Marx's *Grundrisse*.⁵ It was written in 1858, and for the purposes of this paper it does not have much to offer of detail, but it does distinguish already the three forms of capital: commodity capital, money capital and 'capital in the productive process'. *Draft 2* consists of little more than isolated passages in the 1861–3 manuscript (as Engels noted⁶). However, for present purposes, these are of interest because Marx not only clearly distinguished money capital, commodity capital and productive capital, but also for the first time differentiated, and set out, the associated three circuits of capital. *Draft 3* is the first separate version of 'Book II', and was designated by Marx in his folio as 'Mss. 1'.⁷ It was written in 1865 and was not used by Engels in his collation of Volume Two. One interesting variant conception is present in it: the elucidation of *four* circuits, not the three of 1861–3 or of the final version. Discussion of this point may be found in Appendix A below.

Although Marx did not distinguish the separate circuits of capital in his *Grundrisse*, as he does in Volume Two, he gave a striking account of what is involved in the circuit as such. Already here Marx stated the basic principle of the circulation process: all those presuppositions which originally (that is at the start of Book I) 'appear as prerequisites of its becoming – and therefore could not arise from its action *as capital* – now appear as results of its being'. Capital, setting out from itself, 'itself creates the presuppositions for its maintenance and growth'.⁸ It maintains itself through maintaining them. So we can start the next section with capital already conceptualized: 'Now we begin not with capital in the process of becoming, but with capital which has become.'⁹

As self-positing value, capital is 'the subject of circulation', and circulation is 'its life process' whose movement is 'its process of valorization'.¹⁰ Marx therefore comments: 'the true nature of capital emerges only at the end of its circulation':¹¹ for it does not just

return to itself but in doing so grows; the transformations it undergoes result in 'a spiral development'.¹² However a delicate dialectic has to be played out here, for in the circuit the guarantee of valorization depends on capital assuming a certain fixity in appropriate forms, namely money, means of production, product, and so forth. Marx explains this point as follows:

While capital as the totality of circulation is *circulating capital*, the transition from one phase to another, it is, in each phase, also posited in a specific determination, confined to a particular form, which negates it as the subject of the movement as a whole. In each particular phase capital, therefore, is the negation of itself as the subject of the various transformations.¹³

To understand the use of 'negation' here, it is worth bearing in mind that Hegel habitually characterized the movement from the universal to a specific determination as 'negation'. At all events, it is clear that upon the process of determination capital is *fixed* in a certain substance, for however long it takes to gather itself for the next transition. 'The various modes of this fixation constitute different capitals, commodity capital, money capital, capital as conditions of production,' says Marx.¹⁴ At the same time, Marx refers to 'the distinction between *circulating capital* and *fixed capital*' as a 'form-determination'; it is not really a matter of two different kinds of capital but of the same capital posited as 'the unity of the process or as one of its specific moments'.¹⁵ In the dialectic of fluidity and fixity, capital maintains its identity with itself through its flow; we are not faced with a Heraclitean flux, nor a set of things disconnected from each other, but a truly dialectical concept: identity and difference unified *in motion*.

Marx stresses that the process of reproduction of capital is conditioned by these distinctions and their dissolution, by its *flow*, which is more or less hindered, or is arrested entirely if it is detained too long in one of these spheres.¹⁶ The fact of this fixity means capital risks getting 'tied up for certain intervals' (133), an important problem treated at length in Book II.

We are dealing here with a whole which is perfectly present in each and all of its moments since these are determined by their participation in the whole as themselves forms of capital: 'In so far as capital in every moment of the process is itself the possibility of transition into its next phase ... each of the moments appears as

potentially capital – hence commodity capital, money capital – alongside the value which posits itself as capital in the production process'.¹⁷ All fixity has to be relativized in the fluidity of circulation as a total process. As a result of this totalization, in the circuit the separate existence of circulation in the narrow sense and of production 'are reduced to a mere semblance'.¹⁸

Because the system of determination takes the form of a circuit, 'the point of departure is posited as the point of return and the point of return as the point of departure'.¹⁹ In making this last remark, Marx logically raises the possibility of breaking up the circuit in several different ways; *as a circuit* it no longer has to start from money (as the process of valorization was depicted in Book I). This next step was made explicitly for the first time in the manuscript of 1861–3. After distinguishing 'commodity capital, money capital and productive capital'²⁰ Marx set out different circuits on this basis, justifying this as follows:

Viewing the process in its continuity, and thus as a flowing unity of the circulation and production process, we can start from each of the points, whether they seem to be intermediate or end points, as from our point of departure. Thus, first, from *money* as the starting point of a single production process; second, from the *commodity* (product) as the intermediate result of the production process; finally from the production process itself.²¹

He called these 'three forms of the reproduction process' and provided schemas of them which, although the notation differs, are recognizably those of Volume Two as we have it.²²

THE CIRCUITS OF CAPITAL

We turn now to Volume Two proper, assembled by Engels on the basis of as yet unpublished drafts, the chapters on circuits being based mostly on drafts written in 1877 and 1878. (See Appendix B for remarks on Engels's editing.)

Here a careful and comprehensive account of the circuit of capital in general, and of the three particular aspects from which it can be illuminated, is given. The discussion of the circuit (in Part One, chs 1–4) is clearly on a higher level of abstraction than that of later chapters on costs and turnover, in which capital is concretized

as a temporal and spatial form. (This almost *logical* character of the discussion makes it properly comparable with certain themes in Hegel's *Logic*, as will be shown later.)

With regard to the total process of the capital circuit, Marx gives the following important summary:

The two forms that the capital value assumes within its circulation stages are those of *money capital* and *commodity capital*; the form pertaining to the production stage is that of *productive capital*. The capital that assumes these forms in the course of its circuit, discards them again and fulfils in each of them its appropriate function, is *industrial capital* – industrial here in the sense that it encompasses every branch of production pursued on a capitalist basis.

Money capital, commodity capital and productive capital thus do not denote independent varieties of capital, whose functions constitute the content of branches of business that are independent and separate from one another. They are simply particular functional forms of industrial capital, which takes on all three forms in turn. (133)

Let us now run through the relevant chapters so as to grasp in review the outlines of Marx's argument. Each of the three 'functional forms of industrial capital' is made the basis of a specific view of the circuit. The topic of Chapter 1 is that of the circuit of money capital. Marx explains this first version of the circuit as follows:

The circuit of capital comprises three stages. As we have depicted them in Volume 1, these form the following series:

First stage: The capitalist appears on the commodity and labour markets as a buyer; his money is transformed into commodities; it goes through the act of circulation *M–C*.

Second stage: Productive consumption by the capitalist of the commodities purchased. He functions as capitalist producer of commodities; his capital passes through the production process. The result: commodities of greater value than their elements of production.

Third stage: The capitalist returns to the market as a seller; his commodities are transformed into money; they pass through the act of circulation *C–M*. (109)

In considering the whole circuit, namely: $M-C \dots P \dots C' - M'$, Marx refers to 'the different forms with which capital clothes itself in its different stages, alternately assuming them and casting them aside' (109). Notice the importance of the metaphor of 'clothing' here. It indicates the conceptual character of capital as something that cannot be immediately identified with *any* of the forms M , P , C . It is rather their unity, a process going on through their connection in a circuit of *transformation* of capital. Already, then, we can see here the superiority of Marx's conception over empiricist concepts of capital which would reduce it to a single form, for example money, or produced means of production.

Marx goes on to explain the point that money, for example, is not *in itself* capital; it is so only in relation to the other elements of the circuit, a whole within which the moments are internally related. Of course it is equally true that it is important capital should assume the money form because money is required to pay for labour power and means of production. Yet 'Capital value in its monetary state can perform only monetary functions, and no others. What makes these into functions of capital is their specific role in the movement of capital, hence also the relationship between the stage in which they appear and the other stages of the capital circuit' (112). Isolated from this determination, $M-C$ would be expenditure of a revenue whose object would be consumption of diverse use-values, including services.

Having started with money capital, the next stage is 'the transformation of money capital into productive capital'. Money capital functions both to bring together the factors of production (a use-value question) and therewith to form them *as* capital (a value question) (120-21). When it is asked what Marx means by 'productive capital' it is striking to see that this comprehends, besides means of production, labour power itself. This conceptualization marks off his understanding of capital and the shapes it assumes (the 'clothing' it assumes and casts off, as he put it) from that of the majority of bourgeois economists who call produced means of production by the term 'capital' and see this 'factor' in combination with 'labour' as what is productive. For Marx, capital as value in motion invests itself, in its phase as productive, in means of production *and* labour power. The latter does not, therefore, enter the process *alongside* 'capital' but *as capital* (so-called 'variable' capital).

This is only possible of course because capital finds labour power can be constituted as a *value form* insofar as the wages system is evolved. Capitalist production presupposes the appropriation of all the 'objective' and 'subjective' preconditions of production in value form and hence their constitution as elements of capital. Of course, it is a basic fact of the distribution of resources in capitalist society that all commodities are privately owned and thus only available through purchase. Because of the social division of labour, inputs to one industrial capital are generally products of other capitals. We see here, then, that not only does a single capital have its essential form as a circuit but this circuit necessarily intertwines with others in such a way that the total social capital exists as a circuit of circuits.

Marx addresses this in more detail in Chapter 3, where it forms a transition from this part to such matters as reproduction schemes. But the point here, in Chapter 1, Marx says, is that, if 'the material conditions of commodity production confront him to an ever greater extent as the products of other commodity producers, the capitalist must appear to the same extent as a money capitalist, i.e. his capital must function in a greater measure as money capital' (119).

With regard to those inputs which are not products, some – notably labour power and land – nonetheless are priced. So again money payments are required. At the same time it is important to note about this circulation phase that this form of capital is only possible on the basis of a certain social relation whereby labour is excluded from its object. This presupposition is a function of the universality of the capitalist production process. Money can purchase labour power and thus transform itself into productive capital only because of this. Thus Marx argues that the circuit of capital is not logically possible unless a class of wage labourers exists (143). In particular, 'the capital relation arises during the process of production only because it is inherent in the act of circulation, in the different fundamental economic conditions in which buyer and seller confront each other, in their class relation'.²³ This relation is reproduced through the system's own effectivity.

Next Marx considers the transformation of productive capital into commodity capital. Finally, at the end of the whole circuit, if the value of the output C' is realized as M' , then the capital value and surplus value exist again in the same form of value as that

advanced (127). However there is an internal relation involved in the merely quantitative measure of this sum, for part of M' is valorized value:

M' exists as a capital relation; M no longer appears as mere money, but is expressly postulated as money-capital, expressed as value that has valorized itself ... M' thus appears as a sum of values which is internally differentiated, undergoes a functional (conceptual) self-differentiation, and expresses the capital-relation. But this is expressed simply as a result, without the mediation of the process whose result it is. (128)²⁴

We are here, in Chapter 1, dealing with the money circuit of capital to which Marx gives expositional priority over the other circuits he develops later. This is justified, as is always the case with dialectical exposition, by its abstractly perspicuous character. Only in the shape of money does value possess 'an independent form by means of which its identity with itself may be asserted'.²⁵ Only here do both start and finish of the circuit come to capital as an homogeneous entity; it measures itself against itself as pure quantity and hence determines whether or not its current employment generates acceptable 'wealth' (given this social form of measure of wealth of course).

Marx draws attention to certain special features of the circuit of money capital ($M \dots M'$). Since 'money is the independent and palpable form of existence of value' (137) it thereby expresses the 'drive' of capital for valorization, within which aim productive activity appears simply as a middle term between M and M' . As such an aim, M' has no point except to reopen a new circuit. Given this repetition of the circuit, Marx points out, we can separate off other points with which to start and finish a cycle, namely $P \dots P$ and $C' \dots C'$ (142). Hence he turns in the next chapters to examine the circuit again from these angles.

In Chapter 2, it is stated that the circuit of productive capital has the general formula: $P \dots C'-M'-C \dots P$ (144). Here 'circulation proper appears only as the mediator of production' (144) and hence money only as an evanescent form. Indeed Marx says this circuit 'constitutes a critique' of the first in so far as it demonstrates that money has no independence as locus of valorization (153). For 'within the circuit of industrial capital money capital performs no other functions than that of money, and these money functions

have the significance of capital functions only through their connection with the other stages of the circuit' (157). More generally 'neither in the form C' nor in the form M' is the valorization that has taken place a *function* of the money capital or the commodity capital' (161); whereas it is the case with productive capital, of course.

But conversely it is a mistake to derive the properties of productive capital from its mode of existence as the means of production and so on. At this material level, $P \dots P$ cannot be distinguished from non-capitalist labour processes. Once again, it is form that makes a difference and, once again, the form of the matter is given in the totality of the relations and processes established in and through the circuit of capital (161).

Turning now to Chapter 3, the circuit of commodity capital, $C'-M'-C \dots P \dots C'$, here again empiricism fails us if we are to understand exactly what is meant by this latter form (C'). It is neither 10 000 lb of yarn, nor is it its value of £500, if it is to be grasped *as capital*. 'It is only an internal relation, not an external one' that makes the yarn into commodity capital, namely, the relation comprised 'in the magnitude of its value compared with the value of the productive capital contained in it before it was transformed into commodities' (123). Moreover Marx argues that, in so far as C' is necessarily a result of valorization (whereas M' and P could be taken merely in their simplicity as advanced capital), C' has the inner complexity of being capitalized (167-8).

It might be thought there is something more than a little sophisticated about the attempt by Marx to differentiate this form from the others on the ground that it starts from already valorized value. For, taken in isolation, a bushel of corn in a warehouse is simply a product not a value and, even if considered as having value, logically it might represent a potential loss as much as a gain. Any putative surplus value is simply not visible any more than it is visible in M' or P . However Marx is not going to admit taking C' in isolation. He insists that it be taken within the totality of determinations that constitute it not just as a commodity but as valorized value; this makes it special because the presumed increment of value could not have been yet 'creamed off' prior to sale in the way that, for all we know, it might have before capital advanced in the other two forms is recycled.

Even though $M \dots M'$ sets the aim of capital and $P \dots P$ reproduces it, what is reproduced above all through the movement of

circulation and production is the material wealth of the social whole, as the Physiocrats saw, said Marx, praising their perspicacity here.²⁶ Marx also draws attention to the fact that these different circuits are different grounds for particular studies, for example turnover ($M \dots M'$), reproduction ($P \dots P$) and interrelations of capitals ($C' \dots C'$). One advantage of the form $C' \dots C'$ is that it serves as a point of transition to broader questions because the division of the total social product is implicitly raised in this context (177–9, 173–4). Indeed this form will be important, says Marx, 'where the movement of individual capitals will be dealt with in its relationship with the movement of the total social capital' (234).

In the fourth chapter Marx provides an overview of the three figures, and sums up in the following key passage:

If we take all three forms together, then all premises of the process appear as its result, as premises produced by the process itself. Each moment appears as a point of departure, of transit, and of return. The total process presents itself as the unity of the process of production and the process of circulation; the production process is the mediator of the circulation process, and vice versa.(180)²⁷

The dialectical character of Marx's understanding is obvious here. All moments are purely internally related figures of a given whole of self-positing capital which unifies its own phases and exists in their unity. In their distinction they are thus, says Marx: 'I expresses the drive of valorization in its *form*; II starts with the valorization process itself; III begins and ends with *valorized value*' (180). That industrial capital normally exists in, and reproduces, all phases simultaneously means that 'the entire circuit is the *real unity* of its three forms' (181, also 183). 'The forms are therefore fluid forms, and their simultaneity is mediated by their succession' (184). Hence capital can be grasped only 'as a movement and not as a static thing' (185). This last point is clearly key to Marx's whole dialectical conception.²⁸

All the circuits, as well as each, are unified in the notion of self-positing value, valorization. It is one of the great merits of Marx that he achieved this understanding of capital as a circuit or, as he says, more properly a spiral. When we say value unifies the circuit as a circuit of capital's self-valorization it is important to notice that this is not empirically given but a theoretically established connec-

tion. Philosophically Marx, unlike bourgeois economists, has conceptual depth to his theory.

It is necessary to grasp the inner moments of capital, as well as its own phases of motion, as *internally related* to each other, for in isolation its moments lose this determinate economic meaning, being reduced to determinations characteristic of simple circulation or production in general. The technical name appropriate for characterizing the manner in which capital and its specific functioning emerges in the relationships of the three moments of its circuit, all of which have their own functional specificity – all as such *less* than capital – is 'supervenience', we suggest. This is a special case of the phenomena of 'emergent properties' in which the emergent property does not merely passively reflect the epiphenomenal effects of the functioning of the 'original' or 'basic' elements, but itself has an active principle or law which turns its determinants into determined determinants and hence shapes the functioning of the base elements in accordance with the requirements of the emergent function. In this case the emergent function of valorization dictates the terms on which $M-C$, $C \dots P \dots C'$ and $C'-M$ are undertaken; that is, circulation and production become dominated, not by the use-value considerations 'originally' to the fore, but valorization. The original functions become 'sublated' – to use a technical term from dialectic.

So capital does not appear in its *complete* determinacy in any of its phases but supervenes upon them. The shapes can stand alone and operate as money, commodity and so on, but not thereby as *capital*; only in the circuit does this function emerge for them. Thus the three shapes of capital, M , C , P , are not species of an abstract genus but internal self-differentiations of a single whole and acquire their potency as shapes of capital only within this whole.

Only as shapes of capital, its bearers, do they become posited as definite functional forms of capital. Capital itself is an emergent form that cannot be reduced to a particular inner moment or phase of its cycle of activity – just as 'life' itself lies in, yet is supervenient upon, the parts of an organism and its development. The particular functions of the various phases of capital in the circuit become universal functions of valorizing capital 'only through their connection as functional forms which industrial capital has to go through' (161).²⁹ In sum, only through these stages is capital *constituted* as capital, and these forms of its movement are constituted as *its* forms only by virtue of the real unity of the circuit. If the circuit is

analytically broken down into its parts, into *disconnected* stages, there is no longer any trace of capital; all that is left is simple circulation and the immediate process of production.³⁰

REDUCTIONISM

With respect to Marx's exposition of the three forms of the circuit, it is noticeable that he does not just turn from one to another because he has analytically or empirically listed the possibilities; rather each is said to remedy defects in the one-sidedness of the others. Therefore, while it is perfectly reasonable to select a particular circuit for the purposes of illuminating a special topic (as was noted above), it must not be taken as the sole reality. If one circuit is mistaken for the whole and absolutized, this gives rise to a corresponding reductionism. This is what Marx remarks when, in connection with each circuit examined, he points to a particular economic doctrine that adopts this standpoint to the exclusion of the others. Abstracted from the whole system of circuits each leads to a one-sided interpretation of valorization if not corrected by giving due weight to the others, and to their inseparability in the whole process.

Let us begin with the circuit of money capital. This brings into view the *formal* identity of the circuit with itself. But it appears as if M' is independently valorized in its own right (128); the incremental increase appears grounded simply in M (128). As the 'palpable form of existence of value' (137) it thereby expresses the 'drive' of capital for valorization, within which aim productive activity appears simply as a necessary evil, as a middle term between M and M' . 'Hence money capital as money breeding money' is how it is thought of (138). Marx relates 'the illusory character' of the circuit of money capital to the standpoint of Mercantilism, which concentrates on this 'money form' of valorization (141). A factor here is that, in the circuit as a whole, consumption appears 'only as productive consumption' (138). 'We therefore find among the exponents of Mercantilism long sermons to the effect ... that a capitalist nation should leave the consumption of its commodities ... to other more stupid nations, while making productive consumption into its own life work' (139).

With regard to the circuit of productive capital, Marx identifies this as the standpoint of Classical Political Economy (166). For,

insofar as circulation appears as an evanescent moment of what is fundamentally a production period, $P \dots P$ represents capital 'in a form in which it *must* function once more as productive capital', hence a form of 'reproduction' (172). But, often neglecting the character of social form present, Classical Political Economy thereby missed that the point of production and reproduction is valorization. Hence it often ignored the specifically capitalist form of this production and thought production was for the sake of production, frequently understood in a purely *natural manner*; that is, economy was all about reproducing a natural system. For Classical Political Economy, money appeared as an inessential mediator of productive activity. Hence it confused valorization with a natural process of growth and lacked any grasp of it as a historically specific social form. Mercantilism's fixation on the form of value is complemented by the way Classical Political Economy ignored the question of form, a criticism we are familiar with from Volume One of *Capital*.

The circuit of commodity capital – represented in the standpoint of Physiocracy – has the danger of giving a one-sided representation of the whole circuit and exhibiting its own typical reductionism, too:

In figure III the commodities on the market form the permanent premise of production and reproduction. Hence, if attention is fixed exclusively on this, all the elements of the production process seem to proceed from commodity circulation and to exist only as commodities. This one-sided conception overlooks the elements of the production process that are independent of the commodity elements. (179)³¹

It is in this same context that we might locate Sraffa and his followers. Certainly they have to be located somewhere in our discussion; for they are clearly concerned with a circuit of capital: '*Production of commodities by means of commodities*'! It is also clear that they are heavily reductionist, neglecting value determinations and the social relations of production. But on the basis of which circuit can this one-sidedness be explained? Not $M \dots M'$, obviously. Crucial is that the starting and finishing point is a set of Cs , and the whole circuit is reduced to a cycle concerned with reproduction in these terms; they ignore social form to the point at which price is a mere balancing coefficient to ensure social reproduction defined in strictly physical terms; indeed the Sraffian obsession with balanced

reproduction in which output is recycled as input is hardly an advance beyond the notorious 'corn model'. The social relations of production are lost to view by the taking as given of a production function. Class relations come in only with distribution.

Of course, a merit of Sraffians is that, in basing themselves on this circuit, they are led to consider that an input must have been an output of some other circuit of capital, and hence to consider the interchange between departments. But in reducing reproduction to a technical balance the Sraffians collapse the function of productive capital to an unproblematic transition between C' and C' ; hence their perception of both corn models, and total automation, as analytically continuous with the capital circuit proper. Such reductionism is characteristic of the dangers inherent in privileging the commodity capital circuit; but the focus in Physiocracy was on naturally produced wealth, whereas the Sraffians claim to be concerned with factory output and *its* reproduction – a kind of industrial Physiocracy.

It seems, then, that all three separate circuits carry with them the possibility of some kind of reductionism. So the appropriate thing to say is that all three versions of the circuit express something valid but limited; hence industrial capital cannot be identified with any version of the circuit, but requires a comprehensive account of the imbrication of the three circuits; only the whole is true to its concept.

THE HEGELIAN BACKGROUND

The superiority of Marx's conception of capital over its rivals, and especially the presentation of the circuit of capital in three forms each mediating the others and the whole mediating itself in them, appears to owe not a little to Marx's reading of Hegel's *Logic*. At any rate, such a comparison throws some light on the merit of his articulation of capital's inner dialectic.

As is well known, Marx acknowledged the influence of Hegel's *Logic* in a general way but without specifying this in any detail. We will show not only that there is a general connection between the procedures of the two thinkers, but that striking insights into the relations of Marx's circuits may be gained from Hegel's *Logic* and especially therein the dialectic of 'The Concept', central to which is his theory of the syllogism which examines successively its media-

tion in the universal, the particular and the individual judgments. (It is true that Marx does not mention syllogisms explicitly in Book II. However, we know that he was interested in such a logic, for he deployed it in other contexts.³²) Let us then first recall what Hegel says about all this and consider how far it illuminates Marx.

In his *Science of Logic*, Hegel acutely remarks that, faced with the already existing categories, the problem was 'to render this material fluid'.³³ Even more than with logical forms, this is true of the forms of value including the shapes in which capital establishes itself; and it is a great merit of Marx's discussion that he grasps capital in its fluidity. The close relationship between the shapes of capital in its circuit and their binding into a whole, as demonstrated by Marx, has exactly the character of 'the Concept' as described by Hegel. When Hegel speaks of 'the Concept', he is not talking of the concept of a man or of a state and so on but of what they all have in common, the concept of a concept we might say, or the concept in absolute terms. As such a category *the* Concept 'contains the three moments: universality, particularity and individuality'.³⁴

At first sight, we might think that a particular determination of the Concept could not be 'universality' just insofar as it is a *specific* determinateness alongside others, especially when Hegel is talking here, not about particular concepts, but about the universal concept. In fact the pattern in which a category appears as a species of its own genus is common in Hegel's logic. It happens because the logical way of sundering the Concept into specific moments plays off its pure universality in the abstract against its particularity and individuality, while the Concept as a unity has true universality insofar as all moments are combined in it. The determination of pure universality appearing over against other moments is only universality in an abstract sense, the merely universal to the exclusion of the correlative moments that are needed to secure its wholeness.

The Concept 'possesses its determinateness [*Bestimmtheit*] in that it differentiates itself within itself and is the unity of these fixed [*verständigen*] and determinate differences'.³⁵ The meaning of 'determinateness' here is that of something fixed as a result of the process of determination. Notice the exact analogy with Marx's account of capital as a process which is fixed in certain moments of the circuit, that is, as money, commodity and so on.

'Since each of its moments is posited as inseparably united with it, the Concept is a *totality*,' Hegel says; thus each of the moments of

the Concept 'can only be grasped on the basis of and together with the others'.³⁶ (Again the parallel with Marx's concept of the circuit, and its phases, leaps to the eye.)

Now Hegel makes a move to the splitting of this totality into 'judgments' in which one moment is connected to another (as when we say 'roses [a universal] are red [a particular predicate]'). The parallel here with the capital circuit is with the various phases such as $M-C$, in which, through exchange, the content of one form of value is identified with another. At first it seems that in the judgment the organic life of the Concept has evaporated. For in the judgment the moments of the Concept are posited as indifferent to one another and their unity in the judgment appears as an external connection, one not posited through the unity of the Concept. It becomes so posited in a dialectical movement through the syllogism which mediates these fixed extremes.³⁷ (Thus the movement $M-C$ shows M and C are separate, yet in this movement posited as identical values; but the necessity of this transition, as united with others in the circuit, is not given as such until the whole set of circuits is articulated.)

Hegel goes on to concretize this account of 'the Concept', therefore, in his doctrine of the syllogism which subjects three judgments to a logical ordering. Through this, the syllogism connects its three moments: universality, particularity and individuality. For example, 'All men are mortal'; 'Socrates is a man'; 'Therefore Socrates is mortal' – is a case in which the individual Socrates is determined as a particular instance of a universal truth.

It is not necessary to go into the details of syllogistic figures, or Hegel's commentary on them, for present purposes; it is merely necessary to note that, given the three moments, it is possible to construct three figures correspondingly grounding each in turn, and to note what Hegel says about the dialectic involved. The key thing he stresses is that the mediating item may alter according to the different figures of the syllogism. Thus no single syllogism is sufficient to capture the intelligibility of the Concept as a whole because in any single syllogism a valid argument deriving one moment from the others takes the truth of the premises as given. Therefore only a *system* of syllogisms, in which each moment in turn is grounded, can adequately comprehend the rational whole that is the Concept.³⁸

This calls to mind the way Marx develops the circuit of industrial capital as a system of circuits; we even find that there are three circuits corresponding to the three figures of the syllogism!

Hegel remarks that 'each moment becomes itself the whole and the mediating ground'³⁹ in turn, just as we have seen Marx treating in turn the three circuits of capital; and Hegel ends up with 'a circle of mediations that reciprocally presuppose each other',⁴⁰ just as in Marx. Finally, if the system of syllogisms is taken as a whole then 'the distinction of mediating and mediated has disappeared,' says Hegel. 'That which is mediated is itself the essential moment of what mediates it, and each moment appears as the totality of what is mediated.'⁴¹ Just so with the different shapes of capital and the various roles they play simultaneously in the whole circuit of industrial capital. But because industrial capital, as a 'concept', exists only through exchange and production, these moments must be articulated and united through an objective sphere in time and space, namely the circuit and its three forms.

The general lesson from our discussion of Hegel is that the circuit of capital is to be grasped as the unity-in-difference of the three circuits; but not so as to reduce the phases to mere evanescence; it is a question of a unity of *essential* difference. Each moment mediates the other extremes, and conversely mediates itself in them. With Marx we see once again 'the fluidity of the Concept'; capital cannot be identified with any version of the circuit.

But is it possible to go further and argue, more specifically, that, in the circuit in which capital's valorization is achieved, it is in order to distinguish conceptually its universal, particular and individual determinations and to interpret the three circuits discussed above as exemplifying such aspects of it? Everything rational, said Hegel, is 'a universal that through particularity is united with individuality.'⁴² Is this also true of capital and its circuit? A good case can be made for this, as follows: the money capital circuit represents the universal form of valorization meditating itself in the other phases; the circuit of productive capital exemplifies a similar foregrounding of the particularity of the process; and the commodity circuit represents its individuality as a particular product bearing the universal character of valorized value. Let us examine these in turn.

The circuit $M \dots M'$ is recognized by Marx as 'the permanent universal expression of industrial capital'⁴³ in which 'its aim and driving motive – the valorization of value, money-making and accumulation – appears in a form that leaps to the eye' (140). It may properly be designated as the figure in which valorization

concludes with itself in its *universal* form, meaning by this here that it achieves *abstract* identity with itself.

Already in simple circulation Marx had distinguished money as 'the universal mode of existence of value' from the commodity as 'the particular mode of existence of value'.⁴⁴ The circuit of capital contains another mode of value, namely valorized value, *C'*. If exchange of *M* (money capital) for *C* (functioning as productive capital) represents the movement from universal to particular, *C'* (commodity capital) is a candidate for the individual moment we shall argue.

As we noted earlier with respect to the *M ... M'* circuit, in positing the circuit so, the material process of production – wherein valorization actually originates – is of course occluded. In order to focus on that it is necessary to reduce *M* merely to its function of purchasing under their commodity form those particular factors of production that allow a labour process to be simultaneously a valorization process. The circuit *P ... P* therefore brings this into prominence by positing circulation merely as a means of renewing, and expanding, valorization in its particular concrete character – which of course requires its passage through the universal again.

But as particularity something special happens in this form; it is the *concrete* character of the process that becomes important, for the particular commodities bought are productive capital only because as factors of production they can be consumed in such a manner as to yield their potential for producing specific commodities. The values are consumed for the sake of the use-value of transforming their material properties and functions into a new value. This is especially true of labour power, of course; for it is only the fixing of the labour it yields in a particular product that grounds the valorization process.

It is precisely this particularity of productive capital that gives rise to all sorts of technical problems in its movement. Thus the proportions in which a particular process can be expanded 'are prescribed by technical factors' (158,163). This material interest is a sign that productive capital is particularity, negating, as it were, the abstract universality of money capital.⁴⁵ This negation must in turn be negated. This is precisely what is achieved by the presentation of commodity capital as already valorized value, value that has *become* through the mediation of a passage via the above-discussed universal and particular moments. As we have seen, Marx thought that only in this form is capital *necessarily* a form of valorized value (168). The commodity product, as fully achieved valorization, nec-

essarily containing within itself both the original capital value and the surplus value, is the basis of the circuit *C' ... C'*, which may be designated as the *individuality* of valorization.

In Hegel, 'individuality' connotes primarily the notion of 'self-relation'; at the level of the Concept it is said to be 'effective of itself' or 'what produces itself'.⁴⁶ Clearly it is a more complex moment than either the (abstract) universal, or the particular; equally it is clear that Marx's notion of a 'valorized value' has that same complexity and reference to self. For it is both result of accumulation and premise of renewed accumulation. Hegel also specifies that individuality is 'the inner reflection of the determinacies of universality and particularity'.⁴⁷ Just so with *C'*: for all commodities, as the posited unity of use value and value, are qualitatively identical as priced, but each kind is unique in meeting a specific demand, so as values are also particularized bearers of it, while with *C'* we know they incorporate also a surplus. Only with this result, produced accumulation, does valorization become visible as a true *inner* relation of the particular and universal in a mutually fructifying whole. Marx could have referred back to the discussion in Volume One of the representation of value in proportionate parts of the product to illustrate the point that *C'* is valorized value; for in this case the value increment takes the physical particulate form of a part of *C'*, this is what makes it distinct from *M'* which is also valorized value, both being, as Marx stressed, internally related to their predecessors rather than just an amount of stuff externally related to other *C*s and *M*. This is also why *C'* is value in individual form; for as valorized value it is universal as a value, but as valorized it is internally differentiable into particular parts. Thus it reflects both determinations in itself.

Moreover this individuality of the circuit is precisely the form in which it is best related to what has gone before in the argument, and what will come after. It will be recalled that the first sentence of *Capital* stated that wealth in this society appears as a collection of commodities. Now this wealth is to be grasped as its own ground, as result of its own valorization. Even though *M'* sets the aim, and *P* reproduces itself as a site of valorization, what *is* valorized is *C'*, the truly individual aspect. Thus commodities form the material wealth of bourgeois society. Such 'wealth' is not now given as a lifeless aggregate; it is thoroughly *conceptualized* as self-generating and accumulative. As Marx says, *C' ... C'* is also a point of transition, in that the problem of realization of the *C'*, together with the

need to find inputs in the same form, point to the *system* of wealth and relates $C' \dots C'$ to the revolution of the entire 'social capital' (173, 177). It is primarily, therefore, the form in which to consider the confrontation and interchange *between* 'individual capitals' (177–8) and to grasp the overarching individuality of capital as the total social capital. This is precisely how Marx treats it, whereas, he says, considering a valorization process in isolation, $M \dots M'$ or $P \dots P$ may be better (178–9).

In sum, just as in Hegel's logic 'the Concept' is unfolded as a system of syllogisms in which the whole mediates itself, so capital as valorizing value unfolds itself in a system of circuits in which its form determinations mediate themselves and the whole.

Before concluding this account of 'the fluidity of the Concept', it is useful to stand back a bit and ask what is going on in Hegel and Marx. To begin with, it is necessary to register the fact that Hegel, as an idealist, does not consider logic to be merely a technique applied by us, but to have ontological significance. Thus with regard to the the current topic Hegel remarks that, while it might seem that it was our subjective reflection that abstracted its aspects, the Concept 'is *itself* this abstractive process, the opposing of its determinations is its *own* determining activity'.⁴⁸ Given this, we may read Marx's account of the capital circuit, not as his subjective reflections on it, but rather an account of how capital itself, based as it is in a system of exchange predicated on a 'real abstraction', in its own process achieves the positing of such elements as money and commodities as abstract moments of itself and produces its own concept of itself, or itself as a real concept, by supervening upon them in its movement through them.

The fact that capital, as valorizing value, cannot be wholly identified with any stage in which it is temporarily fixed, but is their 'negative unity' – to put it in Hegelian jargon – is reminiscent of the Absolute Idea, which is nothing but the whole movement of its production comprehended, that is recalled, or run over, in thought; whereas here the comprehending movement is the flux of the circuit.

'The Absolute Idea is essentially *process*', said Hegel.⁴⁹ In a similar way, as we have seen, Marx said that capital is essentially *motion*, not a thing at rest, nor even a structured relation of such

things. Its determinateness is indeed secured in its appearance in the moments of its circuit; but such fixed determinations are at the same time the negation of the pure universality of the concept. Capital must always negate such negation and pass on to its next phase. It is the movement of absolute negativity, to put it in terms of Hegel's logic. In his *Science of Logic*, Hegel speaks of the universality of the Concept as 'absolute negativity', an original unity within which its 'determination is not a limitation for the universal', for it maintains itself therein as what it is, 'the soul' of this concrete diversity of shapes of its substance.⁵⁰ (To adapt a simile of Hegel's, the spirit of capital is like the Bacchanalian revelry which brings life to the chain of figures in the frieze on a Greek vase.) Thus if capital is to be self-positing in form, it therefore requires to the fullest extent possible that its shapes be reduced to its own posits, reproduced through its own effectivity.

There is no space here to explain the difference between Marx and Hegel; but one relevant discrepancy between 'the Concept' of Hegel and Marx's notion of capital may be marked. Whereas matter poses no difficulty for the movement of the Concept as it freely develops itself, since in a sense it is its own content, for capital there is always the danger of dissolution should it not be able to move freely in its ether; for capital must *invest itself in matter*, something that may in fact be resistant to it. While everything is inscribed in the value form, this matter is always 'in excess' of this conceptual determination. So here there is a disanalogy with Hegel's Concept in that the material basis of the capital circuit introduces an element of recalcitrance. Marx had already noted this point as early as the chapter on money in Volume One, where he pointed out with regard to the $C-M$ movement that this 'transubstantiation' may be more troublesome than 'the transition from necessity to freedom for the Hegelian Concept'.⁵¹ More specifically, Marx in the first edition of *Capital* drew attention to the requirement that values have a natural material while 'it is only the Concept in Hegel's sense that manages to objectify itself without external material'.⁵² Let us look at an important example.

By virtue of its form, capital aims to appropriate and reproduce all its conditions of existence. Even if this is judged unproblematic in the case of produced means of production, it seems questionable where land and labour are concerned; for land is not produced at all and labour power is reproduced outside the capitalist factory, namely in the 'domestic' sphere. However, while *materially* this is

true, *socially* land and labour are subject to the capitalist system which reproduces their value form. Labour power requires value inputs for its reproduction and it can gain these only through marketing itself as a value. The dull compulsion of economic necessity forces the labourer to make himself available to the capital circuit and the reproduction of the capital relation perpetuates this necessity. Thus the domestic economy is thoroughly subsumed under capital albeit it has something of the character of a 'black box' in the reproduction of the capitalist social formation insofar as this is conceptualized from capital's point of view. The sense in which the domestic economy is an external condition of the capital circuit is therefore rather weak. Ideally all its inputs and outputs are value formed because it is inscribed within the hegemonic commodity capitalist system. Nonetheless there is no doubt that, in depending on land and labour at the material level, capital falls short of the ideality of its concept of self-reproduction.

CONCLUSION

These are the general lessons in dialectic to be drawn from Marx's treatment of the circuit of capital: (1) capital exists essentially as a circuit of successive forms; (2) capital exists essentially as the identity in difference of all its functional forms; (3) each such form is less than capital because it has only the functions appropriate to it as a differentiated form, while at the same time, as integrated in the total form, these very same functions acquire the significance of stages in the process of valorization; (4) so the total form is supervenient in its functioning with respect to the particular forms and their functioning; (5) hence each form of capital, each movement of the circuit, is essentially determined in its ideal significance by its relations to the others and to the whole; (6) hence the circuit can be conceptualized from the point of view of every movement within it; (7) for 'All premises of the process appear as its results'; (8) the actuality of capital is not empirically given, but conceptually established, hence discoverable only by scientific inquiry, *theoretically*; (9) something like the Hegelian dialectic of the Concept is inherent in the circuit; (10) most importantly of all, capital 'can only be grasped as a movement', for arrested it dies.

APPENDIX A: A FOURTH CIRCUIT?⁵³

As we mentioned earlier, in one place Marx divided the circuit into four aspects. This was in 'Mss 1' written in 1865. I do not know when and why Marx dropped this experiment (for a start all the other drafts have not yet been published), but I think it is very instructive to consider how it might have arisen, and what might be said against it. Let us show how it arose, beginning with a comment on the presentation in Volume Two as published by Engels. The three circuits are as follows:

Money capital: $M-C \dots P \dots C' - M'$ (in short $M \dots M'$)

Productive capital: $P \dots C' - M' - C \dots P$ (in short $P \dots P$)

Commodity capital: $C' - M' - C \dots P \dots C'$ (in short $C' \dots C'$)

To begin with, then, it is noticeable that in Marx's schemes of the circuits the term C occurs internally twice, whereas M and P occur only once (other than when they provide the ends of the chain in their own 'proper' circuits). If we designate these C s separately as C_f for the factors of the labour process and C_p for the commodity produced, then the circuit may be explicated as follows:

$$M-C/C_f \dots P \dots C_p/C' - M'$$

in which the expression C/C indicates explicitly the double character of the commodities as values and use values (as ' C ' by itself is, of course). Setting it out in this way, and bearing in mind the possibility of breaking in at any point to set up a particular reading of what is going on (as given above, it is the circuit of money capital), it seems possible to break in at point C_f , as distinct from point C_p , and base a circuit on it.

This is precisely what Marx did in 'Mss 1'. There he set out four circuits, as we shall explain (ignoring Marx's notation of the time). In addition to the three with which we are familiar ($M \dots M'$; $P \dots P$; $C' \dots C'$) he interposed a circuit he designated as that of 'the factors of the labour process', that is to say one starting from C_f in our notation above.⁵⁴ More exactly, it is that of the commodities that in their use-value form serve as factors of the labour process, with their differentiation into means of production and labour power. In the first attempt at differentiating circuits he had not

done this, stating quite clearly that there were three phases to be considered of 'the reproduction process'.⁵⁵ This same view is resumed in Volume Two as we have it.

It seems Marx stumbled on this fourth version of the circuit of capital in the course of writing 'Mss 1'. To begin with, there is no sign of it. Marx lists three forms of capital on his 'contents' page: 'Die Metamorphosen des Kapitals. Geldkapital, Productives Kapital, Waarenkapital'.⁵⁶ He mentions that three different circuits are to be established, but in the process of writing them out – perhaps intending to follow the schemes of 1861–3 – he included, as Roman No. II of three, the $C_f \dots C_f$ circuit, and left out altogether the $C_p \dots C_p$ circuit. Then, after recapping them, as Arabic 1, 2 and 3, he suddenly noticed the necessity of listing the fourth, namely $C_p \dots C_p$ and added it as No. 4. Then he summarized 'all 4 forms': (1) departing from money, (2) from the commodities that constitute the factors of the labour process, (3) from the immediate production process, (4) from the commodity as product of the production process (not, like in No. 2, as its premise).⁵⁷ He goes on to explain them, including form II.⁵⁸ So two interesting questions arise: has the $C_f \dots C_f$ circuit any merit, and what is wrong with it? We propose to deal with these questions in reverse order.

Let us think about what is at issue when Marx presents us with the circuit of capital. Consider $M-(E)-C_f-(P)-C_p-(E)-M'$. This is an alternative representation of the circuit of money capital, which may be presumed to repeat itself indefinitely. Unlike Marx's representation, we see here very clearly that capital exists in three fixed forms (M -universality; C_f -particularity; C_p -individuality) and between each of these is a *process* of transformation, two exchanges (E) in the sphere of circulation and the immediate process of productive consumption (P). Thus a purely logical reason against four circuits is that the structure of this movement falls naturally into three; moreover the moments of the concept, namely universality, particularity and individuality, demand a tripartite organization, such as that in the received version, glossed already above. (However, at the same time, this schema raises the question why the circuit of productive capital does not begin with the point of fixity, C_f , instead of the transition P : this issue will be addressed below.)

But there is a stronger argument if we attend more closely to what these syllogistic elements are. They are judgments connecting two elements, not isolated variables. The syllogism connects these

in a system of inferential movement. So in the same way the figure of a circuit should be broken into its 'judgments'; that is, in this objective context, *transitions* between two elements, not the isolated elements themselves: to consider them in isolation suppresses their potential to become something other, that is, just what is their *truth*.

Note that Marx introduced the whole topic by reference to three phases of *process*, for example discussing not M but $M-C$ (109). For the interesting thing to observe is not M simply but $M-C$, a movement. Thus, in logical language, $M-C/C_f$ is a movement whereby the universal determines itself to particularity. Sticking to a tripartite structure, we could then say that $C/C_f \dots P \dots C_p/C'$, as the process of valorization, is the movement whereby the particular attains individuality. And, finally, $C_p/C'-M'$ is a movement whereby the individual sublimates itself to abstract universality.

Given that Marx has in any case designated the appropriate divisions as *stages of movement*, we are now in a position to redefine more precisely the point at issue if a 'fourth' circuit is to be possible: is there a case for saying that $C_f \dots P \dots C_p$ is not a single movement but is in reality two movements? It is certainly a complex matter but in our view it is still a single movement. For the productive consumption of C_f is the very same process of producing C_p ; the disappearance of C_f is indistinguishable from the creation of C_p as valorized value. When value took the particular form C_f this was tantamount to its embodiment in use-values whose only meaning is to serve as inputs to a process of production; hence they cannot be separated from P . Even more obviously C_p is likewise internally related to P ; P , in truth, is nothing but its production; so we have a whole here. Simpler than the above argument may be to say that C_f and P are passive and active representatives of the same thing, namely productive capital. Capital, in this phase as productive capital, comprehends both the consumption of C_f and the production of C_p in the very same movement.

However it has to be said that the whole of the above discussion, directed towards merging $C_f \dots P \dots C_p$ into a single movement, may not be anything to do with Marx's reasons for dropping a $C_f \dots C_f$ circuit. For in a couple of places in 'Mss 1' he virtually identifies C_f and C_p : 'One sees that to some extent [form 4] is contained in 2';⁵⁹ 'Form 2 is in fact comprehended in form 4'.⁶⁰

In other words, Marx saw them as, in part at least, or, more arguably, in whole, qualitatively identical! This makes little sense at the level of an individual circuit; but if we think about the

movement of the total social capital, it may; at any given moment the economy can be divided into money circulating, commodities circulating and productive consumption. C_f , Marx also seems to argue, is simply a use-value form of (part of?) the C_p .⁶¹ So maybe he thought that two separate circuits here would in effect be counting commodity capital twice. Neglecting capitalist consumption, C_p must in its use-value form be the basis of material reproduction, thus of C_f (in part at least). Marx claimed then that $C_f \dots C_f$ may be taken as subsumed under $C_p \dots C_p$; but we do not accept this argument.

In fact, it seems that $C_f \dots P \dots C_p$ could be distinguished from $C \dots C'$ in that the former understanding concentrates attention on the underpinning of the metamorphoses of value here in a corresponding material transformation, while the latter concentrates on valorization within a circulation form of value. Now the former is clearly a condition of the latter, but more importantly it consists in a movement predicated on the specificity of the commodities as suitable use-values for such a material transformation. When we take the commodities thus, in their bodily determination so to speak, their value determination is, as it were, bracketed for the duration of the production process, or, to put it another way, the dual character of the process (as material labour process and as valorization process) is given only by its placing in a circuit of capital. It has to be succeeded by the validation of the produced commodity on the market as a valorized value.⁶² The middle movement of the circuit involves a change of gear as it were and is not comparable to the movements in circulation. For the commodity (C) which concludes the movement of $M-C$ is determined differently from the same commodity (C_f) as it concerns the movement of productive capital ($C_f \dots P \dots C_p$). (Similarly C_p could be distinguished from C' .) Numerically it is identical; but as a combination of two 'substances', exchange value and use value, it enters different types of relations under each aspect. If one recognizes this, productive capital is best nominated as P in order to emphasize that C_f here is not functioning as a saleable commodity (not even as a stock of saleable means of production) but as productive of another commodity.

Of course the movement is still more complicated by the fact that C_f is itself disaggregable into significantly different parts, namely labour power and means of production. For C_f includes labour power which was *never produced by capital*; this is a very important point and refutes Marx's suggestion that 'form 2 is in fact compre-

hended in form 4'. (True, via a secondary circuit, labour power embodies the wage goods produced as C_p ,⁶³ but that still does not justify identifying the forms of C_f and C_p .) In so far as produced means of production are concerned, these have a quite different 'intentionality' as C_p waiting to be sold so as to realize their value (and surplus value) than they have as C_f , already bought and to be tested materially so as to realize their use-value. Moreover, while the means of production could conceivably be resold instead of used up, capital expenditure on labour power cannot possibly be considered, even latently, in such a manner, for labour power cannot be resold: it is hired or it is not, it cannot normally be traded (although this may happen in special circumstances such as football transfers).

The upshot of this discussion is to demonstrate very clearly that in no way can these commodity forms be identified except very abstractly as in their value form; for their origins and functions are very different. C_f is to be viewed as internally related to the movement of productive capital, not as part of commodity capital. It is true that valorization turns up first in the move $C \dots C'$; but this is no reason to argue that C must form in some way a part of commodity capital C' .

We now turn to the question of whether a 'fourth circuit', a $C_f \dots C_f$ circuit, has any *merit*. Paradoxically the only case to be made for it seems to lie in the fact that it seems to be one of the forms of *reductionism* to which the total circuit is often subject. (It will be recalled that we earlier showed that such reductionism was logically possible in the case of the three circuits discussed, for example $P \dots P$ Marx characterized as the standpoint of classical political economy.)

Popular consciousness, asked to explain accumulation of capital, and aware of the suspect quality of money as store of value, might reply that it is visible in the growing mass of *physical plant*. (If very sophisticated, reference might be made to the growing proletarianization of the population.) Indeed, some neoclassical texts declare capital is produced means of production; thus if they thought in terms of circuitry they would have to focus on the same phenomenon. (Conversely Smith, representing the classicals, thought accumulation of wealth identical with the number of productive labourers and their skills.)

Another point of interest here is that, when challenged to justify a claim that the USSR was capitalist, the believers in this theory frequently referred to the priority accorded to heavy industry in the Five Year Plans; it is obvious they regarded the rapid expansion of this sector as a sure sign of capital accumulation.

In all these reductionist views some mysterious force is posited operative such that the factors of production in their material form have a tendency to grow. More precisely, the focus is on one aspect of C_f , Smith emphasizing productive labour, and the others taking capital accumulation to consist in a growing mass of plant. Value is taken in its *fixity*, a part of C_f , not as its process of becoming, P . P is a movement of valorization; but if $P \dots P$ is taken as a spiral of valorization it is curiously indeterminate, since both P are in process of losing the value of C_f and gaining that of C_p . P is the *process* of valorizing and cannot therefore serve as a fixed point for comparison to register the rate of growth. It is this that explains why, if accumulation is the issue, the focus could shift to C_f , as we saw above. Indeed, although Marx himself named the circuit of expanded reproduction $P \dots P'$ (159–60), when he discussed accumulation he sometimes slipped into such a way of talking, for example: 'the sum of the elements of production proclaims itself from the start to be productive capital' (161); 'the capital value P advanced in the form of the elements of production forms the point of departure' (234).

To return to the problem of the fourth circuit, the fact that the circuit can be misunderstood in this way does not appear to warrant in our own account separating off a $C_f \dots C_f$ circuit; the mistakes discussed are variants of the reductionism involved in taking $P \dots P$ in one-sided ways, if our analysis is right, and if Marx is right the mistake is a variant of a reductionism of the commodity capital circuit.

In sum, the arguments given in this paper for a tripartite division of the whole process, and hence for viewing it as the imbrication of three circuits, are regarded as conclusive – but for our reasons, not for those suggested by Marx.

APPENDIX B: ENGELS'S EDITION OF BOOK II

While Engels gave some account of how he came to produce Volume Two of *Capital* from the various drafts of Marx's Book II, it

is not possible easily to check his work, given that the drafts are not as yet published. Scholars who have consulted the manuscripts, such as Maximilien Rubel and Norman Levine, have cast aspersions on Engels's work, however.⁶⁴ Germane to the focus of this paper is the fact that Levine bases his criticism of Engels precisely on his treatment of Part One of Book II, which contains the very material on the metamorphoses of capital considered in the main part of the present study.⁶⁵

Levine's findings have to be treated with some caution because he shows himself in cognate matters to be unreliable. We refer here to his translation of Engels's reviews of *Capital* Volume One which he presents in a digression from his consideration of Engels's work on Volume Two.⁶⁶ As we have shown elsewhere, he makes Engels say the opposite of what he in fact said.⁶⁷

A key passage for our purposes is considered in detail by Levine, comparing and contrasting the Engels text with Marx's own manuscript. A significant sentence in it is the following: 'The movements of capital appear as the actions of the individual industrial capitalist' who 'thus mediates the circuit by his own activity' (185) According to Levine this does not occur in Marx's manuscript. Instead Marx has: 'The movement imposes itself on the individual capitalist.'⁶⁸ Levine can hardly be wrong about this, one imagines. Taking this together with other evidence he adduces, one might agree with Levine that Engels tended to change the reference of the paragraph from capital's own process to the acts of individual capitalists.⁶⁹ Certainly, in Book II just as in Book I⁷⁰, the capitalist and his activity are subordinated to the movement of capital, according to Marx; *the capitalist* is not the subject on whose activity the circuit is grounded.

Acknowledgements

This paper was given to the International Symposium on Marxian Theory, 1995, Mount Holyoke College (Mass.). The author acknowledges assistance in this respect from The British Academy and The Lipman Trust.

Notes

1. Quoted in Alan Freeman's article, 'Marx Without Equilibrium; *Capital & Class*, 56, 1995, p. 53.
2. *Capital* 1, trans. B. Fowkes, Penguin, Harmondsworth, 1976, p. 256.
3. K. Marx and F. Engels *Werke* (MEW), Band 23, Dietz Verlag, Berlin, 1983, p. 589; Fowkes (*Capital* 1, p. 709) wrongly translates as 'Volume 2'.

4. '416': this number in the text, and subsequent such numbers in the text and notes, are page references to the English translation of *Capital, Volume Two*, by D. Fernbach, published by Penguin, Harmondsworth, 1978.
5. *Grundrisse*, in K. Marx and F. Engels, *Collected Works (CW)*, Lawrence & Wishart, London, 1975–, Vol. 28 & Vol. 29; CW 28, p. 329–CW 29, p. 128.
6. Preface to *Capital, Volume Two*, p. 84.
7. At the time of writing this is the only draft so far published: K. Marx and F. Engels, *Gesamtausgabe, (MEGA)* Dietz Verlag, Berlin, 1976–*Abteilung II*, Band 4.1.
8. CW 28, p. 388.
9. *MEGA II*, Band 1, *Ökonomische Manuskripte 1857/58*, p. 506; *Marx's Grundrisse*, trans. M. Nicolaus, Penguin, Harmondsworth, 1973, p. 619.
10. CW 29, p. 9.
11. CW 28, p. 439.
12. CW 29, p. 9.
13. CW 29, p. 9; *MEGA II* 1, p. 507; *Marx's Grundrisse*, p. 621.
14. *Marx's Grundrisse*, p. 678; ('*fixirtsein*', *MEGA II* 1, p. 559).
15. CW 29, pp. 9–10; *Marx's Grundrisse*, pp. 621–2; *MEGA II* 1, p. 508.
16. *MEGA II* 4.1, p. 178.
17. CW 29, p. 25; *Marx's Grundrisse*, p. 639. So already here in the *Grundrisse* the tripartite division of Part One of Book II appears; but not the explicitly different circuits as in 1861–3 onwards. Furthermore the idea of a circuit is here intermixed with the turnover of capital in time and space (CW 28, p. 458), whereas what is striking about Marx's later analysis of the circuit is its purely formal, almost logical, character.
18. CW 28, p. 439.
19. *Ibid.*
20. CW 32, p. 468.
21. CW 32, p. 480.
22. CW 32, p. 480–81.
23. *Capital, Volume II*, Moscow, 1961, p. 30. Fernbach's translation misplaces 'only' (115).
24. The same point was made more poetically in Book I: 'Value presents itself as a self-moving substance which passes through a process of its own, and for which commodities and money are both mere forms. But there is more to come: instead of simply representing the relations of commodities, it now enters into a private relationship with itself, as it were. It differentiates itself as original value from itself as surplus value, just as God the Father differentiates himself from himself as God the Son, although both are of the same age, and form in fact one single person; for only by the surplus value of £10 does the £100 originally advanced become capital, and as soon as this has happened, as soon as the son has been created and, through the son, the father, their difference vanishes again, and both become one, £110' (*Capital*, 1, p. 256).
25. *Capital*, 1, p. 255.

26. 'It shows great discernment on Quesnay's part that he selected this form in opposition to *M ... M'* (the form fixed on and isolated by the Mercantile System), and not *P ... P'* (as in Smith) (179).
27. Incidentally this passage had already appeared in 'Mss 1': *MEGA II* 4.1, p. 178.
28. For me, it is the most profound remark in the whole of *Capital*. In fact I prefer the rendering given in the epigraph to this paper, taken from the Moscow edition of Volume 2 (p. 105).
29. Repeating p. 157 and p. 112!
30. This is the basis of the 'commerce and industry' picture of the economy treated by Patrick Murray in his contribution to this book; as he says, in this picture capital itself is missing.
31. In another place, Marx draws attention to a similar danger: 'In the case of commodity capital, similarly, profit was occasionally forgotten, and this capital figured, in so far as there was any mention of the production circuit as a whole, simply as a commodity' (172).
32. See his 1857 *Introduction* (CW 28, p. 27) and the 1859 *Contribution* (CW 29, p. 331). See also the capital syllogisms in the *Grundrisse* (CW 28, pp. 205–6); shortly afterwards Marx says rent – capital – wage is a 'syllogism' ('*Schluss*': *MEGA II* 1, pp. 199–200); but the English translations shy away from this, thereby obscuring the meaning of the passage (CW 28, p. 206; *Marx's Grundrisse*, p. 276).
33. *Science of Logic*, trans. A.V. Miller, George Allen & Unwin, London, 1969, p. 575.
34. *Science of Logic* p. 600.
35. *Science of Logic* p. 665.
36. *The Encyclopaedia Logic* (hereafter *Enc. Log.*), trans. T. F. Geraets *et al.*, Hackett, Indianapolis, 1991, § 160, § 164.
37. *Ibid.*, § 165; *Science of Logic*, p. 599.
38. Tony Smith ('Hegel's Theory of The Syllogism and Its Relevance for Marxism', in his *Dialectical Social Theory and its Critics*, SUNY Press, Albany, NY 1993) gives a useful short account of Hegel's theory and its relevance for Marxism (p. 12 esp). He correctly remarks (p.16) that, given a system of syllogisms, if one is mistaken for the whole and absolutized, this gives rise to a corresponding set of reductionisms. As we saw, this is what Marx remarks when, in connection with each circuit examined, he points to a corresponding reductionism characteristic of a certain system of political economy.
39. *Enc. Log.*, § 187.
40. *Enc. Log.*, § 189.
41. *Science of Logic*, p. 703.
42. *Science of Logic*, p. 669.
43. *MEW* 24, p. 65.
44. *MEW* 23, p. 168; *Capital*, 1, p. 255.
45. Indeed, in his *Grundrisse*, Marx goes so far as to say that this phase could be considered one of 'devaluation', albeit 'a moment of capital's valorization process', for here capital loses 'its form as value' and hence this phase has to be complemented by the realization process *C'–M'* (CW 28, pp. 329–30).

46. *Enc. Log.* § 163.
47. *Enc. Log.*, § 163.
48. *Science of Logic*, p. 623 (my emphasis).
49. *Enc. Log.*, § 215.
50. *Science of Logic*, p. 602. Cf. *Enc. Log.*, § 215.
51. *Capital*, 1, p. 197. Marx cites no text here; but strangely enough Hegel himself stressed the difficulty of this transition (*Enc. Log.*, § 159, Remark); so Marx should have said 'even more difficult'.
52. *MEGA II* 5, p.31; and in the footnote Marx cites *Enc. Log.*, § 194 *Zii.* to this effect. Cf. also *Enc. Log.* § 163, Addition: 'the concept is the infinite form or the free creative activity that does not need a material at hand outside it in order to realize itself'.
53. This appendix is based on my paper, 'Marx's Fourth Capital Circuit', in *Capital & Class*, 59, Summer 1996.
54. *MEGA II* 4.1, pp. 145–6, 164.
55. *CW* 32, p. 48.
56. *MEGA II* 4.1, p. 139.
57. *Ibid.*, pp. 144–6; cf. p. 179.
58. *Ibid.*, pp. 164–6.
59. *MEGA II* 4.1, p. 145.
60. *Ibid.*, p. 171.
61. *Ibid.*, p. 147, p. 171.
62. 'While capital is reproduced as value and new value in the production process, it is at the same time posited as "not-value", as something which first has to be realized as value by means of exchange' (*Marx's Grundrisse*, p. 403).
63. Accordingly Marx, in his *Grundrisse*, terms its reproduction the 'fourth moment' of the whole cycle of reproduction (*Marx's Grundrisse*, p. 521).
64. Here I am concerned only with Chapter 4 of Levine's *Dialogue within the Dialectic*, George Allen & Unwin, London, 1984.
65. Levine asserts that the manuscript dealt with in our Appendix A is 'missing' (p. 182); but as explained above (note 7) it has now been published.
66. *Dialogue within the Dialectic*, p. 209–10.
67. 'Engels as Interpreter of Marx's Economics', in Christopher J. Arthur (ed.) *Engels Today: A Centenary Appreciation*, Macmillan, Basingstoke, 1996, p. 175.
68. *Dialogue*, p. 237. However Engels also inserted the phrase lower down about the way the movement 'acting with the force of an elemental natural process, prevails over the foresight and calculation of the individual capitalist' (185).
69. Page 239. But a note of caution has again to be sounded: Levine claims here that Engels systematically changed 'capital' to 'capitalist', for 'nowhere in Marx's paragraph was the word "Kapitalist" used'. Contrary to this, his own rendering shows it appeared once, as we have already seen in the quotation above.
70. *Capital*, 1, p. 92, p. 179, and especially p. 254 where the capitalist is merely 'capital personified'.

6

Money in the Circulation of Capital

Martha Campbell

INTRODUCTION

In Volume One of *Capital*, Marx explains money as the necessary counterpart to the mass of commodities one observes in capitalist societies. Money is necessary, he argues, because all commodities must have one and the same equivalent in exchange. Here Marx takes the presence of commodities for granted. As he will argue later in Volume One, generalized commodity production (or generalized production for sale) occurs only in capitalism. By then, however, he has left the topic of money. It is not until Volume Two, therefore, that Marx considers money in the context of the relation between wage labor and capital. The theory of money in Volume Two is about the new features that emerge from this standpoint: the features of money as a form of capital.

The circulation of capital presupposes monetary circulation along a different path than simple circulation. It also presupposes the interruption of monetary circulation, or the formation of money hoards. The hoards required for the circulation of capital are amassed for the sole purpose of being spent at a later time, that is, for eventual use as means of circulation. For reasons inherent in the circulation of capital, however, spending must be discontinuous and value accumulated independently of capital in its productive form.

As befits the argument of a middle volume, this develops themes of Volume One of *Capital* and provides the grounds for Marx's explanation of the credit system in Volume Three. The reasons that hoards are required for the circulation of capital add to Marx's case that money is necessary. They are, in other words, additional

reasons why moneyless exchange is not merely inconvenient but impossible in capitalism. Further that the circulation of capital requires both the circulation and hoarding of money provides additional evidence for the case Marx makes in Volume One, that these two functions of money mutually require rather than contradict each other. As for the link with Volume Three, Marx argues that the hoards required for the circulation of capital are the source of funds in the credit system (the banking system and stock and bond markets). By showing, in Volume Two, that the conditions for reproduction are unlikely to be met, Marx establishes that the circulation of capital is subject to disruption for reasons that have nothing to do with the state of credit. On the basis of the uses of hoards Marx identifies in Volume Two, and his case that these hoards are the supply of loanable funds in the credit system, he can explain why disruptions in the circulation of capital are manifested in credit conditions whatever their original source.

ASSUMPTIONS

To understand Marx's argument on money, the general assumptions underlying Volume Two must be recognized. These are either conclusions Marx takes to have been established in Volume One or prerequisites for analyzing the circulation of capital, the subject matter of Volume Two. The principal assumptions in the first group are that capitalist society is constituted by the relationship of wage laborers to capitalists (as in Volume One, Marx abstracts from all other social groups, postponing their consideration until Volume Three), that wage labor is the source of surplus value and that the original accumulation has established a monopoly over the elements of production by one group. Marx also takes for granted that capitalist production aims at the creation of surplus value and is, as a result, dynamic and expansionary, tending towards a progressively larger scale.

The principal assumption in the second group is that the circulation of capital proceeds 'normally'. This is capital's transition among its three forms in its 'pure state', in abstraction from realization problems, 'value revolutions' or 'technical revolutions in the production process', fluctuations in the level of economic activity over the cycle, delays in and other 'vicissitudes of circulation' that redistribute capital and surplus value among competing capitals

(Marx, 1885:109, 153, 186, 335, 430, 424).¹ In short, Marx assumes that 'value relations remain constant' (187). As he points out, this does not actually happen since 'capitalist production is precisely marked by a continuous change in value relations' (153). Such change, however, has nothing to do with what Marx is examining, namely, the 'various forms that capital assumes in its circuit and the various forms of the circuit itself' (Part One of Volume Two); turnover or 'how, within this flux and succession of forms, a capital of given size is simultaneously divided ... into the ... forms of productive capital, money capital and commodity capital' (Part Two); and, finally, reproduction or how different individual capitals are 'interlinked' to 'constitute the movement of the total social capital' (Part Three) (429). To identify these aspects of the circulation of capital in their 'fundamental form', Marx must set aside all features of capitalist reality that are irrelevant to them (532). Hence the 'normal' assumption, although unrealistic, is a necessary tool of analysis.²

A second, closely related assumption is that production is continuous. Marx justifies this assumption on the grounds that 'continuity is the characteristic feature of capitalist production ... required by its technical basis'; it goes hand in hand with large-scale production and the factory system (182; see also 183). Even so, Marx grants that continuity 'is not always completely attainable' (182). Continuity, like the normal conditions, is an ideal. Once again, also, it is an idealization required by the subject matter of Volume Two; the conditions for turnover and reproduction cannot be identified without it. For example, Marx argues that money hoards and inventories are necessary for the circulation of capital because they are necessary for the continuity of production.³

Because of these assumptions, Marx considers the circulation process of capital entirely in terms of industrial capital, abstracting from merchant's and money dealing capital. Industrial capital is the only kind of capital to span the entire circuit of capital or to entail a 'unified process of production and circulation' (183). Supposing that capital circulates normally and that production is continuous means that the different forms of capital – money capital, productive capital and commodity capital – are functionally one capital, as if industrial capital were present by itself. Alternatively it means that, if industrial capital had shed the functions performed by merchant's and money dealing capital and they existed independently of it, the three would act as one, in perfect co-ordination with each

other. Since the normal and continuity assumptions suppress the independent action of merchant's and money dealing capital, their independent existence is trivial and is suppressed as well. Industrial capital is the only kind of capital to include production and, even in its narrow, specialized form, it presupposes circulation. As the only kind to encompass both, it determines the normal functions of the other two. Merchant's capital handles the exchange and inventories of commodities and, analogously, money dealing capital handles the flow and hoards of money. The need for both inventories and hoards, however, is determined by the requirement that production be continuous, hence by industrial capital. Finally the unity of production and circulation inherent in industrial capital reflects the specifically capitalist source of surplus value, wage labor.⁴ Thus the conclusions drawn from its analysis (including those about merchant's and money dealing capital) apply specifically to capitalism. By contrast, if merchant's and money dealing capital are regarded as equal partners with industrial capital, the results are likely to conflate characteristics of their pre-capitalist and capitalist forms. On these grounds, Marx argues that merchant's and money dealing capital 'are subordinated to' industrial capital and 'move only on its basis' (136):

in so far as they appear and function as bearers of their own peculiar branches of business alongside industrial capital, [they] are now only modes of existence of the various functional forms that industrial capital constantly assumes and discards within the circulation sphere, forms which have been rendered independent ... through the social division of labor.(136)

Like the normal and continuity assumptions on which it is based, the abstraction from merchant's and money dealing capital is not meant to correspond to capitalist reality. On the contrary, Marx maintains that, since 'the capitalist mode of production presupposes production on a large scale, so it also necessarily presupposes large-scale sale; sale to the merchant, not to the individual consumer' (190). Similarly 'the development of the credit system', which entails the independent existence of money dealing capital, 'necessarily runs parallel to the development of large scale industry and capitalist production' (261, emphasis added). In fact, because developed capitalism presupposes both merchant's and money dealing capital, Marx takes their 'existence for granted in illustrat-

ing particular aspects of the capitalist circulation process' (191). He abstracts from them to identify the features of that process, however, because they 'conceal ... various moments of the movement' of capital (191). Several examples of the way they conceal this movement will illustrate the rationale for the normal assumption.

Because merchant's and money dealing capital are paid for the functions they perform, they seem to contribute to the value of commodities. Since they are also confined to circulation, the idea that they create value implies that value originates, rather than just changes form, in circulation. The version of this misconception that has had the greatest impact on economic theory is that time, in and of itself, is the source of surplus value. Among the phenomena that seem to support this view is that with capitals 'in which only circulation times differ, longer circulation time is the basis for higher price' (204). For Marx, differences in circulation time are merely 'one of the bases in the equalization of profits' (204). In the absence of Marx's distinction between profit and surplus value, however, they are interpreted as decisive evidence against the labor theory of value and so 'led to the complete destruction of the Ricardian school' (373).⁵ Marx postpones his solution to this problem until Volume Three of *Capital*, where he explains the profit rate and the other bases for the division of surplus value.

Second, under capitalist conditions, merchant's and money dealing capital carry out fragments of the complete circuit of capital. If they are considered as independent forms of capital, the need for their functions and constraints on their behavior disappear. Thus merchant's capital disguises the necessity of inventories for the continuity of reproduction (see 580);⁶ money dealing capital disguises both the functions of money hoards and the law of money's circulation.

The previous two problems arise from supposing that merchant's and money dealing capital are capable of standing on their own or are adequate by themselves. Once they are severed from industrial capital, they do, to a limited extent, acquire the capacity to act independently of it. This poses a third difficulty. Their independent action constitutes a departure from their 'normal' behavior and, by definition, any such departure disrupts the circulation process of capital. The problem is that, in reality, the disruptions created by the independent action of merchant's and money dealing capital are combined with disruptions inherent in the reproduction of capital. The normal assumption allows these two sources of

disruption to be distinguished from each other. Unless they result from the modifications introduced by the independence of money dealing capital, economic disruptions are not caused by money, even though their initial manifestation is often the disruption of financial markets.

The normal and continuity assumptions have been considered at length because they determine the form money must take in the analysis of capital's circulation process. Abstracting from money dealing capital takes the credit system, and so credit money, along with it. In Volume Two of *Capital*, as in Volume One, therefore, Marx proceeds on the assumption that money takes the form of precious metal money or, to simplify matters, gold. In so far as (in Volume Two at least) it has the same source, this assumption should be no more problematic than Marx's abstraction from merchant's capital. Additional reasons for it follow from the particular change the credit system brings about. These will be considered in the next section. The precious metal money assumption can then be evaluated in light of all the reasons for it.

Precious Metal as the Form of Money

With the development of the credit system, the money reserves of individual capitalists are pooled in banks.⁷ Money reserves are thereby 'socialized' in the limited sense that they are shared among capitalists. For Marx, this is the most significant modification associated with the credit system (see 213, 488, 569). Its consequences are the source of Marx's additional reasons for describing the circulation of capital in terms of precious metal money.

First, illustrating Marx's point that the credit system conceals aspects of the circulation of capital, the pooling of money in the banking system makes the movement of money more difficult to trace. The circuits of different capitals intersect when one capitalist draws on money contributed by another. Individual capitals can escape the constraints imposed by the need for hoards because they can draw on the total fund of money capital. In addition the banking system doubles the effect of money, since both the real money deposited and the record of its deposit in bank accounts can function as means of circulation (see Marx, 1894:642). The precious metal money assumption avoids these complications. Thus, among the ways Marx justifies this assumption, he notes that Tooke was

'compelled ... time and again to look back at how the matter would present itself on the basis of mere metallic circulation' in order to explain the circulation of credit money (192). Tooke introduces metal money '*post festum*' and moves back and forth between it and credit money (554). The erratic course of his argument illustrates 'the importance of the methodological reasons' for supposing money to be metallic from the start (554). While he accords them significance, Marx adds that they are not his sole reason for the assumption. As he states:

It is important above all ... to start with metal circulation in its most simple original form, since in this way the flux or reflux, settlement of balances, in short all those aspects [of the circulation of money] that appear in the credit system as consciously regulated processes, present themselves as existing independently of the credit system, and the thing appears in its spontaneous form, instead of the form of subsequent reflection. (576-7)

Credit money appears to be 'consciously regulated' because it is created by banks. Because the 'flux and reflux' of money occurs with the issue and repayment of loans, it appears to be the result of intentional action. With precious metal money, by contrast, monetary circulation appears as 'an immanent moment of capitalist production', that is, as one of the interdependent conditions for the circulation of capital (569). This shows that the normal functions of money follow from the nature of capital; they are necessary functions, given what capital is, that it can accomplish only in its money form. Marx expresses this by saying that the normal functions of money have 'grown up spontaneously' (*naturwüchsig*) from the circulation of capital (555).⁸ As a result, precious metal money captures what Marx calls the 'objective' character of value. By this he means that value 'asserts itself as a regulative law of nature' rendering capitalism as a whole, and money as one of its essential elements, beyond intentional social control (Marx, 1867: 184).

This is Marx's original reason for starting with metal money in Volume One of *Capital*. There the point is to show that commodity exchange presupposes money. Because gold is itself a commodity (although, as money, it is not a commodity like any other), it can be used to show that the nature of commodity values requires that one

of their number serve to embody value. Symbolic money, by contrast, seems to be the 'arbitrary product of human reflection' (1867:186).⁹ Similarly, precious metal money in Volume Two of *Capital* expresses the objective character of money's normal functions by presenting them 'independently of the credit system' (Marx, 1885:577). From this point, Marx can show how the credit system arises from and reproduces these same functions. To take a simple example, he argues that 'variations in turnover brought about in this way [by the time required for shipping] form one of the material bases for differing periods of credit', such as 30 and 90 day loans (329). Such connections between the credit system and the normal functions of money establish that the credit system itself is not purely institutional.¹⁰

In summary, the precious metal money assumption is founded on the normal assumption, methodological reasons, and the objectivity of value. It follows, first, from the 'unrealisticness' of the normal assumption, that Marx is not claiming that gold is the actual form of money. Hence he cannot be equating money with gold. Rather he regards precious metal money as a *possible form* of money. In particular he holds that it is money's simplest form because, unlike credit money, it does not presuppose the banking system. Marx's methodological reasons for beginning with metal money follow from its being the simplest form.¹¹

Second, Marx poses his theory in terms of metal money because it expresses the objectivity of value. This has nothing to do with money being a product or with counting labor hours. Instead of focusing on production, Marx always emphasizes the distinctively capitalist interconnection between production and circulation. In Volume Two, for example, industrial capital is taken to be the sole form of capital, not because it includes production per se, but because (as the consequence of including production) it is the only form to contain the interconnection between production and circulation.¹²

Last, the normal functions of money do not depend on the form of money but must be carried out by money of any form. Thus the principles Marx establishes in Volume Two apply equally to credit money, although modified by the socialization of hoards in the credit system.¹³ In view of this, Marx maintains that 'money economy and credit economy' are not distinct economic systems but 'merely correspond to different stages of development of capitalist production' (195).

THE NORMAL FUNCTIONS OF MONEY

Hoards

The hoards Marx is concerned with in Volume Two are required for the continuity of the circulation of capital. Thus they are amassed intentionally or are voluntary hoards. Marx, of course, also recognizes that stagnation of circulation results in the formation of involuntary hoards (see 158, 225). These are excluded, however, by the normal assumption. Further, although hoards are voluntary, they are not an end in themselves but a means to the accumulation of capital. Marx expresses this by saying that hoarding is not a purpose in capitalism (see 423, 569).¹⁴ Being means to another end, hoards are temporary; nevertheless they interrupt the flow of money.

A word of caution: since Marx's analysis abstracts from the credit system, it does not apply directly to reality. The hoards Marx describes do not exist as such in reality, nor does he mean that they do. As he explains when he takes the credit system into account, the money hoards of one capitalist are replaced by financial assets (for example, by bank accounts) and the money itself is lent out to another. 'In real life,' therefore, 'there is no storage of money' (423). Further, as this illustrates, the precious metal money assumption creates an absolute dichotomy between money and credit. Assets that are usually thought of as money (such as bank accounts), therefore, are not money in Marx's terms. These differences do not nullify Marx's argument, but they do mean that it applies to reality only with appropriate modifications. The dichotomy between credit and money means that money in Marx's sense corresponds to that portion of the money supply that is high-powered money.¹⁵ While money is not really stored, the money that would be hoarded in the absence of the credit system constitutes, in its presence, the supply (again, of high-powered money) that would be available for loans in the absence of a central bank. Marx's argument for the necessity of hoards also implies that, if access to the banking system is cut off (for example, by monetary policy that focuses on aggregates), non-financial capitalists will attempt to re-establish individual hoards. The reasons to hoard are not abolished by the credit system, but merely become demands for financial assets. They become demands for money only when the credit system breaks down.

To begin with the most inclusive and fundamental hoard, Marx speaks of the total quantity of money as a 'social hoard' (400). This is the amount of money required as a 'machine of circulation' for the total social capital (213). Calling money that circulates a 'hoard' seems to involve a contradiction in terms (as will emerge, all money does not usually circulate at once, but this is irrelevant to the current problem). Moreover this contradiction seems to be one of the peculiar effects of the precious metal money assumption. By this assumption, money is a hoard in the sense that it is real wealth that must be 'accumulated bit by bit' as the volume of commodity production increases and withheld from productive use to be 'sacrificed to the circulation process' (400, 214). Marx regards the money supply as a hoard, however, not because he assumes that money is metallic, but because of the characteristics of money as a form of capital.

The accumulation of wealth in the form of money is a precondition for capitalist production because it is the precondition for wage labor to be the typical form of labor. On the one hand, wage labor involves the 'transformation of services in kind into money payments' (418). On the other, wage labor must be bought with money rather than with credit. The condition that guarantees the availability of a supply of wage labor is the separation of laborers from the objective means of production. Since this condition renders labor unable to provide for its own subsistence, it means that workers 'cannot give the industrial capitalists any long term credit' and 'there can be no question ... of a direct or indirect balancing of accounts' as there is with the trade credit capitalists grant each other (490, 140-1).

As the necessary means of employing labor, the 'social hoard' must evidently circulate between capitalists and workers. Marx emphasizes, however, that it merely passes through the hands of the working class, always returning to the capitalists.¹⁶ On these grounds, he speaks of the capitalists' 'monopoly over money', suggesting that the social hoard really belongs to the capitalist class (497). Since this is the basis for their claim to surplus value, the function of the social hoard is evidently the appropriation of surplus value. In keeping with this purpose, when the hoard does circulate, the major part of it takes the form of wages, which return to the capitalists when they are spent (trade credit serving to purchase constant capital).¹⁷

Marx does not explain the source of the social hoard in Volume Two of *Capital*, having already argued in Volume One that it is one

of the results of the original accumulation. He does, however, illustrate the need for it by the plight of the Russian landowners who 'complain of the lack of money capital' with the transition from serf to wage labor (117). As this case also illustrates, even though the social hoard is a precondition for capitalist production, the latter can begin before a sufficient hoard is accumulated; the hoard and capitalist production develop simultaneously.¹⁸

Complementing the theory of the universal equivalent in Volume One, Marx's Volume Two account of money as money capital establishes a second reason for the necessity of money. While Marx argues that the relation between wage labor and capital is necessarily monetary, he warns against regarding capitalism as a 'money economy' for this reason (113). The error he sees in this conception is that it reduces the wage labor/capital relation to that between seller and buyer. This overlooks the 'distribution of the elements of production' that guarantees the availability of labor power as a commodity, hence also the specific goal realized by employing wage labor, the creation of surplus value (116). In short it reduces money capital to money. In addition the idea of capitalism as a money economy gives priority to the effect over the cause. According to Marx, the generalization of the commodity form, and so of monetary exchange, results from the capitalist organization of production (see 196).¹⁹ The prevalence of theories of money that are formulated entirely in terms of simple exchange makes Marx's warning still relevant.²⁰

The other hoards Marx identifies are subdivisions of the social hoard and are hoards in the normal sense of money withheld from circulation. They are associated with simple circulation, the accumulation of capital and turnover, the last of which includes the reproduction of fixed capital. Although they are not necessarily separate funds, like the social hoard, they are distinguished by their purpose and the source from which they are amassed.

First, part of the money required as a 'machine of circulation' is a reserve fund that is ready to enter circulation should the need arise (see 403). At the macroeconomic level, its function is that it makes the quantity of money in circulation elastic. This is a necessary characteristic of the circulating medium because the quantity required changes constantly and unpredictably (for example, with changes in prices or in the speed of sales). Marx has already described this kind of hoard in Volume One of *Capital* in his case against the quantity theory. Against its claim that prices are

determined by the money supply, Marx argues that hoards allow the quantity of money in circulation to adjust to the amount of commodity value to be realized, showing that the latter determines the former.²¹ Posing the same argument in more concrete terms in Volume Two, he identifies these hoards as the reserve funds that capitalists hold 'to guard against price fluctuations ... to await the most favorable conjunctures for buying and selling', to compensate for delays in sales or, in short, 'to continue operations without interruption' (199,521). This is the microeconomic function of circulation hoards.

Second, money is amassed out of realized surplus value as latent money capital until it reaches sufficient size to function as productive capital.²² This kind of hoard, which Marx calls an accumulation fund, is required because there is a minimum quantity below which money cannot function as capital, determined in each industry by the proportions in which the elements of production must be combined (see 162-3). Accumulation funds are not optional because accumulation itself is not optional, rather 'the constant enlargement of ... capital [is] a precondition for its preservation' (159). Although the accumulation fund and the reserve fund perform distinct functions, and are therefore theoretically distinct, in practice they may be combined.²³

Third, hoards associated with turnover are the money counterparts of stocks of productive capital and inventories of finished products. Like their physical counterparts, such hoards are a precondition for the continuity of production.²⁴ That is, for the circulation phase of capital's circuit to be accomplished without interrupting the production phase, capital must exist in all three of its forms at the same time.²⁵ Of the three, Marx notes that 'it is particularly the part always present as money capital that the economists forget'; having forgotten it, they fail to recognize 'the importance and role of money capital in general' (333, 342). It might seem that capital could pass through the money form without remaining in it long enough to be considered a hoard. For the money form to be merely transient, however, the two phases of turnover, the working period and the circulation period, would have to mesh perfectly with each other in accordance with stringent conditions. Since there is no reason for the two phases to conform to these conditions, as a rule, capital would be 'set free' or 'suspended' in the money form between the end of one phase and the beginning of another.²⁶

Fourth, as fixed capital wears out, the value it transfers to products is amassed as a money hoard, which is spent all at once when fixed capital is replaced. In this case, the physical characteristics of fixed capital together with its capitalist character as a commodity make 'hoard formation ... an element of the capitalist reproduction process' (526).²⁷ The resulting gaps between the realization and expenditure of value mean that capitalist reproduction cannot be conceived as 'the mere unmediated mutual exchange of ... various components ... of the annual commodity product', as if money were unnecessary or merely convenient (527). According to Marx, fixed capital hoards are among the principal disruptive influences on the reproduction process. They entail one-sided, or discontinuous, purchases between the two departments (that is, producing means of production, Department I, and means of consumption, Department II), which must be balanced by one-sided purchases in the opposite direction (see 570). Given also that crises result in the moral depreciation of fixed capital, the cyclical pattern of crises will be reinforced by the burst in spending that accompanies the replacement of fixed capital (see 264). In addition, even in the ideal case of simple reproduction, variations in the amount of fixed capital that has to be replaced from year to year create either shortages or surpluses. Both result in crises under capitalist conditions (see 542-5).

Circulation

The Path of Monetary Circulation

The monopoly of the social hoard by the capitalist class dictates the path of money's circulation in capitalism. Since the social hoard belongs to the capitalist class, it must be the source of all money in circulation. On the other hand, its relation to the rest of society (by Marx's assumption, the working class) ensures that all money returns to the capitalist class from circulation. The 'general law' of circulation, therefore, is 'the return of money to its starting point' (488, 416). This is the condition for the annual repetition of production.²⁸ It is completely different from the path money follows in simple circulation, 'its constant removal from its starting point' (416).

Money spent as constant and as variable capital quite obviously originates with and returns to capitalists. The former circulates only among capitalists, while the latter goes to the workers and returns

to capitalists when wages are spent. The circulation of surplus value, however, does not seem to conform to the same law. Tooke was asked 'how the capitalist always managed to withdraw more money from circulation than he cast into it' and neither he 'nor anyone else' could explain 'where ... the money for this come[s] from' (404, 405).

Realizing the surplus value portion of the total product seems to require extra money over and above what capitalists spend since 'beyond this [money spent on variable and constant capital], the capitalist no longer appears as the point of departure for the quantity of money that exists in circulation' (408). But there is nowhere else besides the capitalists that the money could come from. The working class does not have it, since they are obliged to be workers because they have no wealth. It might seem that spending by landlords and rentiers offers a solution. But their incomes are just a share of the surplus value received by industrial capitalists. Hence they 'cannot serve as *dei ex machina* for the arbitrary realization of certain portions of annual reproduction' (532).²⁹ If the money to realize surplus value does not originate with the capitalist class, therefore, the quantity of money in circulation must be insufficient to realize the value of the total output.

Alternatively, if this money (setting aside how, for the moment) does originate with the capitalists, there appears to be no surplus. The capitalists would have thrown into circulation the same amount of money as they receive back. To receive a surplus, however, it seems they must receive back more. This, at least, is the implication of the question posed to Tooke.

To solve this problem it must be shown how the capitalist class spends the money that realizes the value of the surplus product but, nevertheless, gets the surplus product for free (in other words, that it is a surplus product). The capitalists may spend the money in either of two ways. One of these ways may be chosen by hypothesizing simple reproduction. In this case capitalists spend the money that realizes surplus value entirely on their own consumption. This money, however, never leaves the capitalist class but only circulates among individual capitalists. Considered from the standpoint of the class as a whole, capitalists cast money into circulation to remove commodities and, by the same process, receive the money back. Since the capitalists end up with the same amount of money and the commodities as well, the commodities 'cost [the capitalist] nothing, even though he pays for them with money' (550).

It was difficult to recognize that the money to realize surplus value comes from the capitalist class in this case because the capitalist spends it, not as 'the personification of capital ... [but] as capitalist consumer and man of the world' (550). Capitalists do not withdraw more money from circulation than they cast into it (as Tooke's questioner supposes). They do withdraw more value, however, since they receive both the surplus product and the money that realizes its value. No extra money is required corresponding to this extra value because the surplus product is completely consumed and its value destroyed each year by the capitalist class. As Marx's solution shows, capitalists must own, besides the money they advance as capital, a second 'money fund which they cast into the circulation sphere as means of circulation for their consumption' (422) and which is 'the money needed to realize ... surplus value' (497). This second fund is part of the money the capitalist class must have already amassed as a precondition for capitalist production. Because of it, the realization of surplus value does not require any expansion of the money supply.

The same holds true (at least initially) for expanded reproduction. The only difference from simple reproduction is that part of surplus value is spent as capital instead of on capitalist consumption. Besides capitalist consumption, it may be spent either on enlarging the previously existing stock of productive capital or, if the amount of surplus value is too small to be transformed directly into productive capital, it must be hoarded in an accumulation fund as new potential money capital. In either case, new money capital is formed simply by applying surplus value to a different use than in simple reproduction. Hence the formation of new money capital does not require an expansion of the money supply.³⁰

Although the return of money to its starting-point is a precondition for reproduction and all three portions of the total product circulate in this way in principle, the very fact that the physical transformations required for reproduction must be accomplished by the circulation and hoarding of money creates the 'conditions for an abnormal course [or] possibilities of crisis' (571). For money to return to its starting-point, exchanges between the two departments of production must be equal in value. Because exchanges between capitalists are mediated by exchanges between capitalists and workers, even simple reproduction requires a series of interdependent transactions. Since these transactions are carried out independently of each other, 'this balance [of value between the two

departments] is itself an accident' and so is the return of money to its starting-point (571).

Money flows are also disrupted by any changes in the composition of output that must occur for reproduction to proceed. Simple reproduction entails such changes only if the amount of fixed capital that needs to be replaced varies from year to year (for example, because of obsolescence or accidental destruction: see 542–5). They are a precondition, however, for the transition from simple to expanded reproduction (or from one rate of accumulation to a higher one), which cannot occur without an increased output both of constant capital as a whole and of machine tools. One of the problems this transition is likely to create will illustrate how changes in output composition can disrupt the monetary conditions for reproduction. Actual accumulation must be accompanied by the formation of accumulation hoards (see 583). If one department hoards, however, the other cannot sell its output (that is, it will have overproduced) and the money it has spent does not return to it (see 578, 593). Such violations of the law of monetary circulation are 'balanced out' by crises (596).³¹

The Money Supply

One of the more intractable problems Marx seems to have created for himself by assuming that money takes the form of gold is explaining how gold production could provide an adequate supply of money. For Marx, 'whether capitalist production on its present scale would be possible without credit ... i.e. with a purely metallic circulation' is a 'pointless question' (420). In part, at least, this is because it has an obvious answer: 'It would clearly not be possible. It would come up against the limited scale of precious-metal production' (420). The question is also pointless because it emphasizes a minor and neglects a major feature of the credit system and, as a result, misunderstands the relation between the credit system and large-scale production. It supposes that large-scale production could develop independently of the credit system, that the quantity of money would become insufficient to circulate the enlarged volume of output and that credit money would be introduced for this reason. According to Marx, by contrast, large-scale production would not develop without the credit system. Since the two develop simultaneously, the value of output neither threatens to outstrip nor is ever limited by the quantity of money required to circulate it. The reason the two develop simultaneously, however,

is not that the credit system allows the money supply to expand in step with output. It is rather that the credit system concentrates all individual hoards in banks. This places a larger amount of money capital at the disposal of individual enterprises. To stay, for the moment, with the part of the story that does concern the quantity of money, Marx makes the negative case, first, that the quantity of money is not a limit on capitalist expansion and, second, that the credit system (including credit money) develops from the hoards required by the circulation process of capital, not because of a shortage of gold.

Regarding the first point, Marx's demonstration (discussed in the previous section) that there are two funds, one to circulate the value of constant and variable capital and a second to circulate surplus value, establishes that the realization of surplus value does not, in and of itself, require an increase in the money supply. It follows from this that the division between wages and surplus value may change (that is, wages could rise) without any increase in the quantity of money required (see 413). It follows also that 'the formation of additional money capital and the quantity of precious metal existing in a country ... do not stand in any causal connection with one another' since money capital may be increased simply by diverting the fund that realizes surplus value from capitalist consumption into accumulation hoards (573).

Marx emphasizes, further, that there is no fixed relationship between the quantity of money capital and the scale of production.³² On the one hand, output may increase without an increase in the quantity of money capital through more intensive use of labor power, fixed capital and natural resources (see 431–2). The scale of production, and so the productivity of labor, may increase simply by the centralization of capitals with no increase in money capital. In addition, reductions in turnover time decrease the quantity of money capital required for a given scale of production (416–17, 363–4). On the other hand, a given quantity of money may be made to function more effectively through 'technical arrangements' that increase the velocity of money or that substitute 'directly balancing payments' (that is, trade credit) for payments in money (417, 419).³³ While the amount of gold that is present in a country at any given time may be fixed, the effectiveness of this stock of gold as money is variable. In this sense, money is endogenous in Marx's theory in spite of the precious metal money assumption.

Throughout Volume Two, Marx assumes that 'the quantity of money existing in the country ... is sufficient both for active circulation and for the reserve hoards' (576). This is the social hoard, which is the precondition for capitalist production, amassed with the original accumulation and the spread of capitalist production.³⁴ If simple reproduction is assumed, annual gold production would only have to replace the quantity of money used up by wear and tear. As is evident from Marx's comment that capitalist production 'would come up against the limited scale of precious-metal production', expanded reproduction eventually requires additions to the money supply.

In particular, Marx entertains the possibility that expanded reproduction might involve simultaneous hoarding by *all* capitalists. Since the first stage in expansion is the shift of realized surplus value into accumulation funds, Marx inquires whether such accumulation 'on all sides' would produce a shortfall in demand as well as a shortage of money (see 567 and 421-4). 'In real life,' he notes, 'there is no storage of money' (423). In the credit system, hoards take the form of financial assets (for example, bank deposits, shares), so that one capitalist's hoard functions simultaneously as another capitalist's means of circulation. Hoarding is then spending: 'what appears on the one hand as storage of money capital appears on the other hand as continuous real expenditure of money' (423). The formation of accumulation funds, however, does not require the credit system. Even subject to the unrealistic assumption that money takes the form of gold, hoarding is partial rather than general. 'Storage in the money form never occurs simultaneously at all points' because hoarding is not an end in itself but the means, either to the continuity of turnover or to the expansion of productive capital (423).³⁵ Hoarding by some, therefore, is balanced by spending by others.

If, in spite of the flexible relation between them, the quantity of money should become insufficient for the scale of production, more gold would have to be produced. The only consequence is that a greater portion of the total social labor would have to be devoted to 'this expensive machinery of circulation' and real wealth correspondingly reduced (420). Because financial assets replace money hoards and bank notes replace gold as means of circulation in the credit system, labor can be devoted to productive uses rather than to gold production. As far as its effect on the quantity of money is

concerned, the credit system increases wealth only in so far as it reduces the social cost of the machinery of circulation.

That precious metal is an expensive (in terms of social labor) form of money and credit money a cheap one has been noted by others, including Friedman and Hicks. The conclusion Hicks draws seems to be the obvious one, that this 'is the reason why the credit system grows: that it provides a medium of exchange at much lower cost' (1967b:158).³⁶ Hicks's argument, however, presupposes that individual capitalists can co-ordinate their actions to reduce a social cost (the portion of the total social labor that is devoted to gold production) without the incentive of private gain. In addition, it jumps from the costliness of gold money to a consequence of the fully developed credit system, skipping over the feature of the credit system that Marx considers most significant, namely, that it involves the socialization of individual hoards.³⁷ According to Marx, the credit system develops because capitalists recognize that they can use the hoards, which they must amass anyway for the circulation of capital, to claim a share of surplus value (see 396, 574). The credit system transforms money capital, which is a 'dead weight' in the form of a private hoard, into 'active, usurious, proliferating capital' for its owner in the form of interest-bearing capital (574, 569). Marx's account of the credit system not only includes the socialization of hoards, but explains how this is brought about by the pursuit of private gain. The reduction in the social cost of the machinery of circulation is a by-product.³⁸

REMARKS ON THE CREDIT SYSTEM

Marx does not consider the credit system by itself until Volume Three of *Capital*, since the transformation of hoards into interest-bearing capital involves the redistribution of surplus value among different kinds of capital. Nevertheless two important points about the credit system have emerged in Volume Two. First, the hoards required for the circulation of capital are the source of funds on which the credit system is founded. Second, the change introduced with the credit system is that latent money capital is used to buy financial assets (for example, bank accounts); the money itself is pooled in banks and made available to other capitalists. Having identified both the functions of hoards and the way hoards are

transformed in the credit system, Marx can indicate how the credit system affects the circulation of capital. Although he mentions these effects only in passing, a general principle emerges from them.

In the absence of the credit system, the need to amass hoards imposes limits on the expansion of capital. The credit system relaxes or removes these limits. The trade-off for circumventing them, however, is that the circulation of capital is rendered more fragile and complex, and so less likely to proceed 'normally'. Both the limit and the trade-off vary with each kind of hoard.

As shown in the previous section, the social hoard limits the accumulation of capital because it requires that labor be devoted to gold production. The credit system circumvents this limit by 'restricting the actual circulation of metal ... to ... an ever decreasing minimum' (576). The trade-off is that 'this ... increases in the same proportion the artificial character of the entire machinery and the chances of its normal course being disturbed' (576). By 'artificial', Marx means that metal money is replaced by 'all kinds of operations, methods [and] technical devices', in short, by forms of debt that become more 'creative' (that is, less sound) as the share of real money is reduced (576). The smaller the amount of real money, the smaller the reserve available to all capitalist enterprises (since their money capital is combined in the credit system) against unforeseen conditions, such as delays in sales, price changes and technical innovations. Further, the credit system increases the likelihood that any disturbance will spread throughout the economy because the pooling of money capital adds a new form of interdependence among capitals. These consequences are inherent in the credit system because they follow from the socialization of hoards, which is its definitive characteristic. Hence no banking legislation or monetary policy can eliminate them entirely.³⁹

Like the social hoard, turnover hoards limit the accumulation of capital because they are capital that must be withheld from productive use. The credit system overcomes this limit because it places latent money capital at the disposal of those capitalists who have immediate use for it. This allows the total capital to be used continuously without compromising the continuity of production. The trade-off is that an additional and unrealizable condition is imposed on the already complex process of reproduction: if the needs of different capitalists do not mesh perfectly, money will not circulate in the manner required for reproduction. All hoards, but

especially turnover hoards, are contributed to the banking system temporarily. There is no reason to suppose that they will be available to be returned at the precise moment when they are needed to fulfill the conditions of reproduction. In Marx's words, 'money capital that is only released temporarily may get stuck, and be used for new enterprises' when the conditions for reproduction require that it 'be used to set in motion ... products still held down [that is, unsold] in other enterprises' (594). High rates of return add a new wrinkle: they create the incentive for 'industrialists and merchants [to] throw the money capital they need for carrying on their businesses into ... speculations' on shares 'and replace it with loans from the money market' (390). The ensuing crash bankrupts the speculators and undermines their businesses, which would have otherwise been sound. Further the credit system can hide interruptions in the circulation of capital (for example, if debt is incurred to compensate for the absence of sales) and allow them to persist. 'Anomalies in the production and reproduction process' are not only more serious, but appear in a distorted way, 'as a crisis on the money market' (393).

The limit associated with accumulation funds is that each capitalist must amass a sufficient hoard before commencing production. The credit system reduces the size of the hoard that any one capitalist must amass because it makes the collective hoard of the capitalist class available to individual capitalist borrowers. This allows large-scale and long-term projects, previously undertaken only by the state, to be undertaken on a capitalist basis.⁴⁰ The reason the credit system is associated with large-scale production, therefore, is that it involves the pooling of individual hoards, not because a shortage of gold money would impose limits on capitalist expansion. While the credit system allows large-scale projects to be undertaken, their dependence on it insures that they will be undertaken in a senseless way. For example, they may be undertaken simply because cheap money is available: 'the absence of this [money market] pressure itself calls into being a mass of such undertakings' (390).⁴¹ In addition, they are both vulnerable to and promote disturbances in the money market (see 433-4). On one side, they are vulnerable because they must be abandoned if a financial crisis makes funds unavailable before they are complete (a problem Marx illustrates by housing built on speculation: see 311). On the other side, the demand for funds generated by very large-scale projects (Marx's example is railways) initially puts pressure

on the money market. Later, when the money raised on the money market is spent, the burst in demand for productive capital causes prices to rise and leads to a speculative boom. In short, financing through the credit system underlies the 'prodigious development ... of the capitalist system of production' but it also means that this development is associated with waste and speculation and is potentially irrelevant to needs (574).

As Marx warns, 'we should not get any mystical ideas about the productive power of the credit system, just because this makes money capital available or fluid' (421). The credit system does not abolish capital or the monopoly of money by the capitalist class, but only allows that class to use money capital more effectively. While the credit system overcomes the limits to capital that hoards would impose, it exposes capitalist reproduction to a new set of hazards. The tendencies to disruption that result from the concentration of money capital are 'monetary' in the sense that they are attributable to the credit system. They are distinct from the disruptions that arise from the virtual impossibility of realizing the conditions for reproduction.

CONCLUSION

With his explanation of the circulation of capital, Marx has presented a 'monetary theory of production': one in which the behavior of money figures among the preconditions for capitalist reproduction (Keynes, 1933: 408). The preconditions Marx identifies concern the path of monetary circulation and the formation of money hoards; he has yet to consider the interest rate and its impact. This by itself assures the originality of Marx's contribution. On the one hand, as Keynes persuasively argues, Neo-Classical theory is the theory of a 'real exchange economy' (ibid.). On the other, for Keynes himself, money is significant because of the interest rate. The characteristics of money as a form of capital in Marx's account, therefore, are for the most part absent from other theories. These differences will be highlighted in closing.

One of the most fundamental of Marx's points is also the simplest: that the relation between wage labor and capital is necessarily monetary. This relation by itself explains why money is necessary. As noted earlier, this is entirely overlooked in Neo-Classical monetary theory, but is recognized by the post-

Keynesians. Further, as opposed to the usual contradiction between money as means of circulation and as hoard, Marx shares with (some of) his Classical predecessors the view that these functions are complementary. In addition, Marx argues that the realization of surplus value, whether devoted to consumption or to expanded production, does not require an increase in the money supply. Because of this and the previous point, the quantity of money is not the central issue for Marx as it is for present-day monetary theory.⁴² Like the post-Keynesians, Marx conceives money to be endogenous, but for Marx this is true even without the credit system, because of hoarding and trade credit. According to Marx, therefore, the significant feature of the credit system is not the endogeneity of money but the concentration of money capital. This disposes of the problem of a shortage (or to put it another way, the high cost) of gold money given the large scale of capitalist production. Since, by Marx's account, the concentration of money underlies the development of large-scale production, the latter would not occur without the former. To argue that the concentration of money is the definitive feature of the credit system, Marx must first show, by abstracting from the credit system, that hoards are necessary for the reproduction of capital. This abstraction is also required for Marx's case that capitalist reproduction is likely to be disrupted merely because it must be accomplished by means of money. The credit system complicates, rather than resolves, the problems that are already present without it. Last, Marx's case that latent money capital is the supply of funds to the credit system, and the uses of hoards the demand for them, explains why disruptions in the reproduction process first appear as disruptions in the money market.

Notes

1. Hereinafter all references to Volume Two of *Capital* will be cited solely by page number.
2. More precisely, it suppresses features of reality that are irrelevant to the issue at hand in order to focus on others that are fundamental to it. The normal assumption illustrates what Maki calls 'unrealisticness' of a kind that is required for theory construction (see Maki, 1994).
3. For continuity and turnover, see pp. 334, 335, 342; for reproduction, see p. 580; on hoards, see pp. 333, 429, 521; on inventories, see pp. 201, 223.

4. As Marx notes, industrial capital is the only kind of capital in which the 'creation [of surplus product] is a function of capital' and which, therefore, 'requires production to be capitalist' (136). (For more on the requirement that production be capitalist see Campbell 1993.) This is, of course, why industrial capital involves the unity of production and circulation. In Volume One of *Capital*, Marx focuses on wage labor as the source of surplus value and, in Volume Two, he focuses on the interconnection between production and circulation, which is its logical consequence.
5. The most important example of this problem for the history of economic theory is the wine in the cellar case, first presented by Bailey and later by Böhm-Bawerk as proof against the labor theory of value (see Marx, 1861-3, pp. 86-7). Marx's solution to it requires, besides his explanation of the rate of profit, his distinction between working time and production time (see pp. 316-17).
6. Marx's method of abstracting from merchant's capital is anticipated by Sismondi, who argues that the merchant and manufacturer divide up the functions of one capital and that abstraction from the former is necessary 'in order to grasp clearly the progress of wealth' (see p. 191).
7. Money reserves are also pooled in the stock and bond markets. Banks, however, exemplify the principle in its simplest form and are taken to represent the others.
8. *Naturwüchsig* literally means naturally arisen, or developed of its own accord: in this case, out of the circulation process of capital. 'Spontaneous' is an unfortunate translation because it suggests the absence of causation. Marx means just the opposite, that money's functions are dictated by its place in the total process, not arbitrarily (that is, institutionally) established.
9. Symbolic money (pure fiat money) is the next simplest form of money after gold; unlike credit money it does not presuppose the banking system or money dealing capital as an independent form of capital. In Volume One, Marx remarks that, if money is a symbol, then so is every other commodity (1867: 185). His point is that neither is a symbol in the sense, as Ganssmann puts it, that they occupy a 'consensual domain of shared meaning' (1988: 309). For the argument that Marx begins with commodity money to capture the objectivity of value, see Campbell (1997).
10. As Marx states: 'all these different aspects of the spontaneous movement', that is, the normal functions of money, 'had only to be noted and brought to light by experience, in order to give rise both to a methodical use of the mechanical aids of the credit system and to the actual fishing out of available loan capital' (556). His strongest case for the 'spontaneously' developed character of the credit system is that and why it arises from the hoards required for the circulation of capital. This will be considered later.
11. Marx also mentions that gold is historically prior to credit money (see p. 192). This, by itself, is not an additional reason for the precious metal money assumption but a consequence of metal money

- being the simplest of money's forms. If gold money presupposed more features of capitalism than credit money (that is, were not the simplest form), Marx could not have begun with it even though it is historically earlier.
12. In Volume One, the interconnection between production and circulation appears in Marx's rejection of both Ricardo, who sees value entirely in terms of production, and Bailey, who sees it entirely in terms of exchange (see Campbell, 1997).
13. See pp. 213, 364, 434, 533; also De Brunhoff (1973, p. 85).
14. In this way, Marx shows that there is no contradiction between the means of circulation and hoard functions of money. Marx emphasizes this point because it is a key difference between pre-capitalist and capitalist conditions: in the former, wealth is accumulated by hoarding, while in the latter it is accumulated by its use as capital (see p. 164).
15. High-powered money meaning bank reserves for demand deposits plus currency; in other words, money that is, plus money that is capable of becoming, reserves.
16. Thus Marx says that the hoard is appropriated by a few (p. 418); that the capitalist is its 'primary point of departure' and the workers only a secondary point of departure' (408); and that it functions 'in the hands of the workers 'only as a means of circulation' (554).
17. See p. 554. The importance of wages in the total quantity of money is also emphasized by Moore (1988: see pp. 137, 138). It should be noted that Marx does not regard trade credit as part of the credit system since it does not involve the 'socialization' of money capital that is characteristic of banks and the stock market.
18. See pp. 117, 418. Marx argues that the relation between the emergence of capitalist production and the accumulation of a money hoard 'should not be conceived in such a way that a sufficient hoard has first to be formed before capitalist production can begin' (p. 418). This is one of several arguments to the effect that the quantity of money is not a limit on capitalist expansion.
19. See also Marx (1867:274, n4).
20. For example, clearing house conceptions of money (such as Hicks, 1967a), evidently abstract from wage labor since they assume that all traders can give each other credit. The relation between wage labor and capital implies that only capitalists can give each other credit.
21. See Marx (1867, pp. 231-2, 219-20). Besides Marx, Smith and Steuart both maintain that circulation hoards exist (see p. 419 on Smith, and Marx, 1859, pp. 165-7 on Steuart). This is one of the reasons all three reject the quantity theory and, as will be argued later, regard money as endogenous. The corollary is that prices are determined prior to circulation. Keynes expresses this by referring to expected prices, and Marx by referring to ideal values ('in their prices ... commodities have already been equated with definite but imaginary quantities of money' before they enter circulation: Marx, 1867, p. 213; see also p. 189).
22. Marx uses the term 'money capital' to mean capital in the form of money, not interest-bearing capital, which he does not consider in

- Volume Two of *Capital*. Accumulation funds are potential money capital in the sense that they are funds intended for the expansion of productive capital.
23. 'When the capitalist is in need, he in no way ponders over the specific functions of the money that he has in his hands, but uses whatever he has in order to get the circulation process of his capital moving again' (p. 165).
 24. For Marx's case that turnover hoards function analogously to physical stocks, see pp. 429, 580-1.
 25. 'All portions of the capital go through the circuit in succession, and, at any one time, they find themselves in various stages of it. Thus industrial capital in the continuity of its circuit is simultaneously in all of its stages.... The succession of the various parts is ... determined by their coexistence, i.e., by the way the capital is divided' into its forms, money, productive capital and commodities (pp. 182, 183).
 26. For a summary of the conditions under which money hoards would be unnecessary, see p. 355.
 27. Marx sometimes speaks of the fixed capital amortization fund as an accumulation fund (pp. 260-1) or a reserve fund (p. 243). It evidently has a completely different function than the circulation reserve. It is distinguished from the accumulation fund both by its source (realized constant capital as opposed to realized surplus value) and by its use, replacement rather than expansion.
 28. Stated differently, to the extent that money does not return to the capitalist who spent it, the reproduction of capital will be disrupted. Marx derives the conditions for reproduction from this principle (see p. 533).
 29. This illustrates how the division of surplus value obscures the issues addressed in Volume Two and why Marx confines his attention to industrial capital.
 30. See pp. 418, 575.
 31. Adolph Lowe (1976) investigates the prerequisites for accumulation in greater detail than Marx and, like Marx, shows that they cannot be met by the market except through disruption. The problems that accompany reproduction because it is carried out through money have nothing to do with the credit system or reliance on debt. By contrast, Minsky's (1978) 'financial instability hypotheses' attributes the instability of capitalist production to reliance on debt.
 32. 'It in no way follows from this [that capital must begin its circuit in the form of money] that ... the scale of production ... has its *absolute* limits determined by the volume of money capital in operation' (Marx, p. 431).
 33. Steuart argues (and Marx evidently agrees with him) that the existence both of hoards and various forms of trade credit means that the quantity of money does not determine prices (see Marx, 1859, pp. 165-7). Similarly, Smith argues that the quantity of money adjusts to the value of the goods money is required to circulate and that trade credit is one of the sources of flexibility (1776, pp. 323-4, 405, 409). It is simply not true, therefore, as Rogers maintains, that

- 'the role of money as *cause* or *effect* should be seen in terms of the distinction between commodity and bank money' (1989, p. 175). Moore (1988, p. 128) suggests the same thing: that is, this distinction does not coincide with that between exogenous and endogenous theories of money. Money is conceived to be endogenous, in the sense that the quantity in circulation is held to be the effect of commodity values rather than their cause, by Marx, Steuart and Smith, and all pose this argument in terms of commodity money.
34. See p. 418. As noted earlier, Marx maintains that this hoard does not prohibit the development of capitalist production but the two develop simultaneously. The social hoard, therefore, is not a limit on capitalist production.
 35. Marx also notes that hoarding could be the result of stagnation. Stagnation should be excluded by the normal assumption. Even if it is taken into account, it does not contradict Marx's point, namely, that hoarding does not impose limits on the circulation of capital. Evidently, hoards that result from stagnation cannot have caused it.
 36. Similarly Friedman states that 'the *cost* of a strict commodity standard is almost certain to lead to the adoption of devices designed to provide without cost at least some part of the annual addition to the circulating medium' (1953, p. 243, emphasis added).
 37. This is presumably one of the reasons why Marx claims that, if the need for hoards is overlooked, 'so also is the importance and role of money capital in general' (342).
 38. Similarly, in Volume One of *Capital*, Marx explains that the hoards that allow the total quantity of means of circulation to be flexible are held by individual capitalists to protect themselves against unpredictable fluctuations in sales and input prices.
 39. One of the 'costs' usually associated with replacing metal with paper money is that the latter is subject to significant devaluation (see Rogers, 1989, pp. 172-3). Since Marx assumes, throughout all three volumes of *Capital*, that the value of money is constant, he does not mention this problem. The complications mentioned in the text, however, do have modern counterparts. The reduction of the quantity of metal money to a minimum is comparable to the Federal Reserve's attempts to restrict reserves in the 1970s and 1980s. The financial innovations by which those restrictions were circumvented are analogous to Marx's 'operations, methods [and] technical devices' and the financial crises of 1970s and 1980s illustrate their consequences (see Wolfson, 1995, chs 4-10).
 40. The examples Marx cites are roads and canals (see 311). As he states: 'large-scale jobs needing particularly long working periods are fully suitable for capitalist production only when the concentration of capital is already well advanced, and when the development of the credit system offers the capitalist the ... expedient of advancing ... other people's capital' (312).
 41. This is echoed by Keynes's claim that 'there is an inducement to spend on a new project what may seem an extravagant sum, if it can be floated off on the stock exchange at an immediate profit' (1937,

- p. 151). Like Marx, Keynes singles out long-term projects as being conducted in a particularly irrational manner by capitalism (see *ibid.*, pp. 163–4).
42. Dow and Dow state that a 'key feature of post-Keynesian monetary theory is the endogeneity of money supply determination' (1989, p. 147). See also Lavoie (1985).

References

- Campbell, M. (1993) 'The Commodity as "Characteristic Form"' in R. Blackwell, J. Chatha, E.J. Nell (eds), *Economics as Worldly Philosophy*, Macmillan, London.
- Campbell, M. (1997) 'Marx's Theory of Money: A Defense', in F. Moseley and M. Campbell (eds), *New Investigations in Marx's Method*, Humanities Press, Atlantic Highlands, NJ.
- De Brunhoff, S. (1973) *Marx on Money*, trans. M. Goldbloom, Urizen Books, New York.
- Dow, A. and S. Dow (1989) 'Endogenous Money Creation and Idle Balances', in J. Pheby, (ed.), *New Directions in Post-Keynesian Economics*, Edward Elgar, Aldershot.
- Friedman, M. (1953) 'Commodity-Reserve Currency', *Essays in Positive Economics*, pp. 204–50, Chicago University Press, Chicago.
- Ganssmann, H. (1988) 'Money – a symbolically generalized medium of communication? On the concept of money in recent sociology', *Economy and Society*, vol. 17, no. 3, August: 285–316.
- Hicks, J.R. (1967a) 'The Two Triads. Lecture I', *Critical Essays in Monetary Theory*, Clarendon Press, Oxford.
- Hicks, J.R. (1967b) 'Monetary Theory and History: an Attempt at Perspective', *Critical Essays in Monetary Theory*, Clarendon Press, Oxford.
- Keynes, J.M. (1933). 'A Monetary Theory of Production', *The Collected Writings of John Maynard Keynes*, Vol. 13, Macmillan, London.
- Keynes, J.M. (1937) *The General Theory*, Harcourt Brace Jovanovich, New York/London.
- Lavoie, M. (1985) 'Credit and Money: The Dynamic Circuit, Overdraft Economics, and Post-Keynesian Economics', in M. Jarsulic (ed.), *Money and Macro Policy*, Kluwer-Nijhoff, Boston.
- Lowe, Adolph (1976). *The Path of Economic Growth*, Cambridge University Press, Cambridge.
- Maki, Uskali (1994) 'Reorienting the Assumptions Issue', in Roger Backhouse (ed.), *New Directions in Economic Methodology*, Routledge, London/New York.
- Marx, K. (1859) *A Contribution to the Critique of Political Economy*, International Publishers, New York, 1970.
- Marx, K. (1861–3) *Theories of Surplus Value*, III, Progress Publishers, Moscow, 1968.
- Marx, K. (1867) *Capital*, Vol. 1, trans. B. Fowkes, Vintage Books, New York, 1977.

- Marx, K. (1885) *Capital*, Vol. 2, trans. D. Fernbach, Penguin Books, London, 1992.
- Marx, K. (1894) *Capital*, vol. 3, trans. D. Fernbach, Penguin Books, London, 1991.
- Minsky, H. (1978) 'The Financial Instability Hypothesis: A Restatement', in P. Arestis and T. Skouras (eds), *Post-Keynesian Economic Theory*, M.E. Sharpe, Armonk, NY.
- Moore, B. (1988) 'Unpacking the Post-Keynesian Black Box: Wages, Bank Lending and the Money Supply', in P. Arestis (ed.), *Post-Keynesian Monetary Economics*, Edward Elgar, Aldershot.
- Rogers, C. (1989) *Money, Interest and Capital*, Cambridge University Press, Cambridge.
- Smith, A. (1776) *The Wealth of Nations*, Random House, New York, 1937.
- Wolfson, Martin (1995) *Financial Crises*, M.E. Sharpe, Armonk, NY.

7

Marx's Reproduction Schemes and Smith's Dogma

Fred Moseley

The best-known part of Volume Two of *Capital* is the reproduction schemes in Part Three. Marx's reproduction schemes have been widely interpreted to be essentially the same as Leontief input-output tables, or the technology matrices in Sraffian theory or in neo-classical growth theory (for example, Lange, 1969; Morishima, 1973; Howard and King, 1985; Gehrke and Kurz, 1995). These technology matrices consist of physical quantities of inputs and outputs for the various sectors in the economy. According to this interpretation, Marx's reproduction tables also consist fundamentally of physical quantities of inputs and outputs, which are aggregated into departments by means of labor values. The main purpose of Marx's reproduction tables, according to this interpretation, is to analyze the conditions for balanced growth, or the proportions between the physical inputs and outputs of the different sectors of the economy which are necessary for balanced growth to occur.

This interpretation of Marx's reproduction tables has been one of the main supports for the currently dominant neo-Ricardian interpretation of Marx's theory of value and price, according to which the logical method of Marx's theory is essentially the same as the logical method of Sraffa's theory that is, the method of linear production theory. Specifically, according to this interpretation, Marx's theory takes as given the physical quantities of inputs and outputs, as in Marx's reproduction tables, and then derives values and prices from these given technical coefficients of production. (Gehrke and Kurz emphasize this connection between Marx's reproduction tables and his theory of value and price.)

This paper argues that this widespread interpretation of Marx's reproduction tables is fundamentally mistaken and that Marx's reproduction tables do not consist of physical quantities of inputs and outputs, but instead consist of quantities of *money*, money which circulates as capital or as revenue.¹ These quantities of money capital do not serve as a means to aggregate physical inputs and outputs, but rather are themselves the subject of the analysis, as quantities of money capital. The primary purpose of Marx's reproduction tables is not to analyze balanced growth in terms of physical quantities of inputs and outputs, but is instead to analyze the reproduction of quantities of *money capital*, that is to explain how the money which is invested as capital is later recovered, so that means of production and labor power can be purchased again and capitalist production can continue on the same scale (at least). Marx's analysis of this question has nothing essential to do with the physical quantities of inputs and outputs, but instead has to do with the advance, recovery and reproduction of different components of money capital throughout the capitalist economy through the purchase and sale of commodities.

It will be argued that the most important immediate purpose of Marx's reproduction tables was to refute the widely-held, but erroneous, view of Adam Smith that the price of the total social product is entirely resolved into revenue, that is, into wages plus profit and rent.² 'Smith's dogma' (as Marx called it) and Marx's refutation of it do not depend in any way on the specification of the physical quantities of inputs and outputs. Instead they have to do with the components of the *price* of commodities, and especially with the question of how the *money capital* invested as constant capital in the means of production is recovered through the sale of commodities. The key issue is whether the total price of the total social product is entirely resolved into revenue or also includes a constant capital component. All these variables – price, capital, revenue and so on – are defined in units of money and are not derived in any way from given technical conditions of production.³

In order to demonstrate these conclusions, this paper re-examines the following texts in which Marx discussed his reproduction tables and related subjects: (1) an important 1863 letter to Engels, which was apparently Marx's first presentation of his reproduction tables (at least it is the earliest discussion which has been published in English, and I think in any other language); (2) Chapters 3 and 6 of Volume One of *Theories of Surplus-Value*,

written in 1862, in which Marx discussed Smith's dogma and Quesnay's *Tableau Économique*; (3) Chapter 49 of Volume Three of *Capital*, written in 1865; and (4) the best known and most extensive discussion of Marx's reproduction tables in Part Three of Volume Two of *Capital*, written in the 1870s.

The title of Part Two of Volume Three of *Capital* is 'The Reproduction of the Total Social Capital', thus indicating that Marx's reproduction tables analyze the reproduction and circulation of *capital*. Therefore it is necessary first of all briefly to review Marx's definition of capital and the related definition of revenue.

MARX'S DEFINITION OF CAPITAL IN TERMS OF MONEY

Marx first defined his concept of capital in Part Two of Volume One of *Capital*, which is entitled 'The Transformation of Money into Capital'. In Chapter 4, Marx defined capital as *money which becomes more money* through the purchase and sale of commodities, and he expressed this definition symbolically as $M-C-M'$, where $M' = M + \Delta M$. Surplus value is also defined as the increment of money (ΔM) which emerges through this circulation of capital. The chapters that follow argue that the source of this surplus value, the increment of money which transforms a sum of money into capital, is the surplus labor of workers engaged in production.

Later in Volume One, in the introduction to Part Seven, Marx summarized his definition of the *circulation of capital*, which includes, besides the two phases just mentioned, a third phase which is a return to the sphere of circulation in order to sell the products. This summary is as follows:

The transformation of a sum of money into means of production and labor-power is the first phase of the movement undergone by the quantum of value which is going to function as capital. It takes place in the market, in the sphere of circulation. The second phase of the movement, the process of production, is complete as soon as the means of production have been converted into commodities whose value exceeds that of their component parts, and therefore contains the capital originally advanced plus a surplus-value. These commodities must then be thrown back into the sphere of circulation. They must be sold, their value must be realized in money, this money must be transformed once again into

capital, and so on, again and again. This cycle, in which the same phases are continually gone through in succession, forms the circulation of capital. (C.I. 709)⁴

Thus we see that Marx defined capital as money which becomes more money through the production and sale of commodities, and the circulation of capital as the continual repetition of the three phases of purchase, production and sale just described. Therefore Marx's title for Part 3 of Volume Two, 'the reproduction of the total social capital', means the reproduction of *money which functions as capital*.

Since capital is defined in terms of money, the two key components into which the total capital is divided, constant capital and variable capital, are also defined in terms of money (C.I., ch. 8). Thus, the magnitudes of constant capital, variable capital and surplus value in departments I and II in Marx's reproduction tables are defined in terms of money, not in terms of physical inputs and output, as suggested by the neo-Ricardian interpretation.

It should be noted that Marx did not define capital as the physical means of production, as the classical economists tended to do and as neo-classical economists do today. Marx extensively criticized the classical concept of capital as physical means of production (for example, C.I., 975-1010). He argued that this definition of capital is an example of the tendency of the classical economists to define their concepts in physical terms, which are common to all types of economic systems, rather than in terms of those characteristics which are historically specific to capitalism, that is, the investment of money to make more money.

Modern economists deride the simple-mindedness of the monetary system when it responds to the question: What is money? with the answer: gold and silver. But these self-same economists do not blush to respond to the question: What is capital? with the reply: Capital is cotton. Yet this is what they do when they declare that ... the *material conditions of labor are capital* by their very nature, and that they are capital because, and to the extent that, they participate in the labor process by virtue of their physical quantities as use-values. It is in order, if others add to their list: Capital is meat and bread, for even though the capitalist purchases labor-power with money, this money in fact only represents ... the means of subsistence of the worker. (C.I., 996)

This is the reason, then, why the capitalist, the worker, and the political economist, who is only capable of conceiving the labor process as a process owned by capital, all think of the *physical* elements of the labor process as *capital* just because of their physical characteristics. This is why they are incapable of detaching their physical existence as mere elements in the labor process from the *social* characteristics amalgamated with it, which is what really makes them *capital*. (C.I., 1007-8; emphasis in the original)

Marx's definition of capital in terms of money, rather than physical means of production, follows from his general methodological principle of *historical specificity*, according to which the concepts of a theory of capitalism should refer to its historically specific and unique characteristics, because it is these characteristics which determine the development of capitalism, not the general and common characteristics which capitalism shares with all other economic systems, such as the production of outputs by means of inputs (see for example, G., 85-8).⁵

Money which functions as capital was distinguished by Marx from money which functions as revenue in the following way. We have just seen that capital is defined as money advanced to purchase means of production and labor power to be used to produce a commodity and eventually to recover a greater sum of money. On the other hand, revenue is defined as money used to purchase means of consumption for purposes of individual consumption. This distinction, which Marx credited Quesnay for being the first to emphasize (TSV.I., 344), plays an important role in Marx's analysis of reproduction and in his critique of Smith's dogma. Smith argued that the price of the total social product is entirely resolved into revenue; Marx argued to the contrary that the price of the total social product also includes a component of capital, and must include a component of capital if capitalist production is to be able to reproduce itself.

1863 LETTER TO ENGELS

The first time that Marx presented a version of his reproduction tables was in a letter to Engels written on 6 July 1863 (SC., 132-6), soon after he had finished the '1861-3 Manuscript', the second draft of *Capital*, which will be discussed in the next section. There is no

discussion of the reproduction tables in the *Grundrisse*, even though there are extensive discussions of other parts of what later became Parts one and Two of Volume Two of *Capital*.

In this letter, Marx asked Engels to look over an 'Economic Table' which he said he had adapted from Quesnay's *Tableau Économique* and which he enclosed in the letter. Marx introduced his 'Economic Table' as follows:

You know that according to Adam Smith, the 'natural price' or 'necessary price' is composed of wages, profit (interest), rent – and is thus entirely resolved into *revenue*. This nonsense was taken over by Ricardo, although he excludes rent, as merely accidental, from the list. Nearly *all* economists have accepted this from Smith and those who combat it commit some other imbecility.

Smith himself is aware of the absurdity of resolving the *total product* of society merely into *revenue* (which can be annually consumed), whereas in *every separate* branch of production he resolves price into *capital* (raw materials, machinery, etc.) and *revenue* (wages, profit, rent). According to this, society would have to start afresh, *without capital*, every year. (SC., 133; emphasis in the original)

This passage and the rest of the letter make it clear that Marx's 'Economic Table' was originally intended to provide a critique of Smith's erroneous view that the price of the total commodity product of society is entirely resolved into wages, profit and rent; that is, that price is entirely resolved into revenue (under the assumption that all the profit is consumed rather than accumulated – which was both Smith's and Marx's assumption in this context).

Marx then explained the contents and logic of the reproduction table to Engels. He divided the whole economy into two broad 'categories': Category 1 which produces means of subsistence and Category 2 which produces means of production.⁶ He began his discussion with Category 1, the means of subsistence. The price of the product of Category 1 includes both a *capital* component (constant capital) equal to the costs of the means of production consumed in the production of means of subsistence and a *revenue* component equal to variable capital plus surplus value. Therefore, the price of the product of Category 1 cannot be resolved entirely into revenue within Category 1.

On the assumption that capitalists spend all their profit on means of subsistence (that is, the assumption of 'simple reproduction'), the capitalists in Category 1 are able to sell part of their means of subsistence to workers and capitalists *within* Category 1. However another part of the means of subsistence remains unsold and the capitalists in Category 1 have not yet recovered the constant capital spent on the means of production. Therefore the following questions arise: who buys the remaining means of subsistence of Category 1 and how is the constant capital invested in Category 1 recovered, so that the means of production in Category 1 can be repurchased and production can continue on the same scale in the next period?

The answers to these questions involve the relations of exchange between Category 1 and Category 2. The price of the product of Category 2 also includes both a *capital* component (constant capital) and a *revenue* component, equal to variable capital plus surplus value. The additional buyers for the products of Category 1 are the workers and capitalists in Category 2, who spend their wages and surplus value to purchase means of subsistence, thereby enabling the capitalists in Category 1 to recover their constant capital invested.

However, after this purchase of means of subsistence by the workers and capitalists in Category 2, all the revenue of society has been expended to purchase the means of subsistence produced by Category 1. If Smith's view were correct, and the total price were entirely resolved into revenue, who would buy the means of production produced by Category 2, and with what money? The total revenue of society has been expended and yet the means of production have not yet been sold. Similarly, if Smith's view were correct, how could the means of production consumed in both categories be replaced, since there would be no money left over with which to purchase these means of production? As Marx put it in the passage quoted above, 'According to this, society would have to start afresh, *without capital*, every year' (SC., 133).

Marx's answer to this question was of course that Smith's view must be wrong. The total price of the total social product is resolved, just like the price of each individual commodity and the price of each category of goods, not only into revenue, but also into constant capital. This constant capital component of the price of commodities enables capitalists in both categories to recover the constant capital consumed in production, which in turn enables

them to repurchase their consumed means of production. Once it is recognized that the total price of the total social product is resolved into both constant capital and revenue, it is easy to explain how constant capital is recovered and how the means of production are repurchased in both categories so that production can continue on the same scale.

Marx commented toward the end of this letter: "The movement, partly within Category 1, partly between Categories I and II, shows at the same time how the *money* with which they pay new wages, interest, and rent of land, flows back to the respective capitalists of both categories" (SC., 135; emphasis added). This theme of the 'reflux of money' was also emphasized by Marx in his later writings on reproduction and again clearly indicates that the quantities in Marx's reproduction tables are quantities of money capital, and that Marx's analysis of reproduction has to do with the way the quantities of money capital invested are recovered by the different groups of capitalists, so that this money capital can be reinvested and capitalist production can continue uninterrupted.

Therefore Marx demonstrated by means of his economic table that Smith's view was erroneous: that the total price of the total social product cannot be resolved entirely into revenue, but must also include a component of constant capital. Without this constant capital component of the price of commodities, there would be no way for capitalists to recover the constant capital invested, nor for them to repurchase the consumed means of production.

THE 1861-3 MANUSCRIPT

The use of an adaptation of Quesnay's *Tableau Économique* to refute Smith's dogma appears to have developed out of Marx's discussion of Smith and Quesnay in the '1861-3 Manuscript', in sections of this manuscript published in Volume One of *Theories of Surplus Value*. These sections were written in early 1862, about a year before the letter to Engels just discussed.

Smith

Marx discussed Smith's dogma for the first time in Chapter 3, Sections 8 and 10, of *Theories of Surplus-Value*. Section 8 is a brief introduction and Section 10 is a much longer discussion. These sec-

tions focus on the same questions emphasized in the 1863 letter to Engels just discussed: how is the constant capital consumed in production recovered, so that the consumed means of production can be repurchased? However the discussion in these sections is much less clear than in the letter to Engels, and Quesnay's *Tableau Économique* is not explicitly mentioned. Marx had apparently not yet hit upon the idea of using the *Tableau Économique* to demonstrate Smith's error.

In Section 10, Marx distinguished between the same two broad categories of producers as in the 1863 letter, but he did not aggregate all the individual capitals into totals for these two categories, as he did in the 1863 letter and in his later writings on this subject. This lack of aggregation reflects Marx's lack of clarity at this early point in time and makes the numerical examples overly detailed and tedious to follow. But it is nonetheless clear that the quantities of individual capitals discussed are defined in terms of money, not in terms of physical quantities of inputs and outputs.

As in the 1863 letter, Marx began his analysis in Section 10 with the producers of consumption goods (subsection (a), 'Impossibility of the Replacement of the Constant Capital of the Producers of Consumption Goods through Exchange between these Producers', pp. 107-25). Using a long, detailed argument, Marx showed that, since the sum of wages plus profit for these producers is always less than the sum of the prices of their products, it is always impossible for these producers to sell all their consumption goods through exchanges among themselves and their workers. There will always remain a surplus of unsold consumption goods whose price is equal to the sum of the constant capital consumed by these producers. This surplus of unsold consumption goods means that these producers will not be able to recover their constant capital, and hence will not be able to repurchase their consumed means of production.

In the next subsection (subsection (b), 'Impossibility of Replacing the Whole Constant Capital of Society by Means of Exchange between the Producers of Articles of Consumption and the Producers of Means of Production', pp. 25-38), Marx considered exchanges between producers of consumption goods and producers of means of production. Using another long, detailed argument, Marx showed that, while the revenue of the producers of the means of production (wages plus profit) may be sufficient to purchase all the articles of consumption, no revenue is left over to purchase

their own products, the means of production. On the basis of Smith's view, it would be impossible for both groups of capitalists to recover their constant capital, and hence it would be impossible for them to repurchase their consumed means of production. Therefore Marx came to the same conclusion as in the 1863 letter: that Smith's view must be wrong. The total price of the total social product consists, not only of revenue, but also of a second 'capital' component which is equal to the prices of the consumed means of production and which enable capitalists to recover the constant capital consumed and to repurchase the consumed means of production.

Marx did not present in this section his own analysis of the reproduction of the total social capital and a complete solution to the problems that arise from Smith's false assertion. Marx was evidently not yet sufficiently clear in his own mind to present his own analysis, especially in concise form. But he did note toward the end of this section that 'we shall return to this question in connection with the circulation of capital' (TSV.I. 147), thus indicating the relation between his critique of Smith's dogma and his analysis of the circulation and reproduction of capital in Volume Two of *Capital*.

Quesnay

A few months later, Marx discussed Quesnay's *Tableau Économique* for the first time in his writings that have been published (TSV.I., ch. 6). (Marx did not mention the *Tableau Économique* in his earlier discussion of the Physiocrats in this manuscript (TSV.I, ch. 2) prior to his discussion of Smith.) The discussion of Quesnay's *Tableau Économique* was written in a separate notebook and labelled a 'Digression' (MECW.31., 590-91). It is not entirely clear why Marx returned to Quesnay after his discussion of Smith. Perhaps his discussion of Smith's dogma helped Marx to realize that Quesnay's *Tableau Économique* could be used to demonstrate Smith's error, and that is why he returned to Quesnay.⁷ Although Smith's error is not explicitly mentioned in this discussion of Quesnay, the themes discussed are clearly related to the prior discussion of Smith's dogma. Marx reviewed in detail the various transactions in Quesnay's tableau, emphasizing the distinction between capital and revenue, and the related distinction between productive consumption (purchase of means of production and labor power) and final consumption (purchase of means of subsistence). Other themes discussed in this chapter include the recovery of the constant capital in agricul-

ture and manufacturing, thus enabling capitalists in both sectors to repurchase their consumed means of production; the 'reflux of money' to capitalists; and the determination of the quantity of money by the circulation of commodities and capital (in opposition to the quantity theory of money). All themes are related to quantities of money and do not depend in any way on the physical quantities of inputs and outputs.

Perhaps this further study of Quesnay helped Marx to realize that the *Tableau Économique* could be used to demonstrate the error of Smith's dogma. In any case, as we have already seen, this connection was clearly in Marx's mind by the time of his letter to Engels a year later.

VOLUME 3, CHAPTER 49 OF CAPITAL

Volume Three of *Capital* was written in 1864-5, before Volume Two as we know it. Chapter 49 is the only place in Volume Three where Marx explicitly discussed his reproduction tables.⁸ This chapter of course logically follows Part Three of Volume Two, to be discussed below, even though it was written before it. This chapter is once again about Smith's dogma and Smith's related 'cost-of-production' theory of value. The questions posed are the same as in Marx's earlier discussions: if Smith's dogma were true, how could the constant capital consumed in production be recovered and how would the means of production be replaced so that production could be continued on the same scale? Marx states his reasons for 'returning' to this analysis of reproduction and Smith's dogma as follows:

We can see that the problem posed here was already solved when we dealt with the reproduction of the total social capital, in Volume 2, Part 3. We come back to it here firstly because there surplus-value was not yet developed in its forms of revenue – profit (profit of enterprises plus interest) and rent – and hence could not be dealt with in these forms; and secondly because it is precisely in connection with the form of wages, profit, and rent that an incredible blunder has run through the analysis of all political economy since Adam Smith. (C.III., 975)

This chapter provides further evidence that Marx's analysis of the reproduction of social capital was concerned primarily with a

refutation of Smith's dogma, which has to do with the components of the price of commodities and which does not depend in any way on the specification of the quantitative relationships between physical quantities of inputs and outputs.

VOLUME TWO, PART THREE, OF CAPITAL

We come finally to the best-known and most extensive discussion of Marx's reproduction tables in Part Three of Volume Two of *Capital*, which will be discussed in some detail, chapter by chapter and section by section.

Chapter 18 ('Introduction')

Chapter 18 is a brief introductory chapter which consists of two sections. In Section 1 ('The Object of the Inquiry'), the reproduction and circulation of the total social capital is defined in essentially the same way as discussed above, that is, as the *continual repetition of the three phases of the circulation of capital*: (1) the purchase of means of production and labor power with money capital in the sphere of circulation; (2) the production process; and (3) the sale of the product (reconversion into money) once again in the sphere of circulation. Smith's dogma is not specifically mentioned in this brief introduction. However the significance of Smith's dogma for Marx's discussion of the reproduction of the total social capital is emphasized in the next two chapters.

Marx noted that Section 2 of Chapter 18 ('The Role of Money Capital') did not really belong in the introduction. The two main points briefly discussed are that the circulation of capital begins with money; and that the amount of money which must be advanced to maintain a given scale of production depends on the length of the turnover period (a point already discussed in Part Two of Volume Two). The main point for our purposes is that this section provides further evidence that Marx's reproduction tables are in terms of flows of money capital.

Chapter 19 ('Former Presentations of the Subject')

This chapter is devoted almost entirely to a discussion of Smith's dogma (all but a very brief discussion of Quesnay's *Tableau*

Économique) and thus provides important evidence that one of the main purposes of Marx's reproduction tables was to refute Smith's dogma. The main issues emphasized in this chapter are the same as those in previous discussions of Smith's dogma, which we have examined above: the recovery of the constant capital and the distinction between capital and revenue. Marx summarized his critique as follows: 'The narrowness of Smith's conception lies in his failure to see what Quesnay had already seen, namely *the reappearance of the value of the constant capital in a renewed form* (C.II., 438; emphasis added).

This chapter also discusses two additional issues: that variable capital does not become revenue for workers (to be discussed below) and that, although price can be partially resolved into revenue, price is not *determined by* revenue in any way, contrary again to Smith's cost of production theory of value.

The final subsection of this chapter is a consideration of 'Later Writers' (Ricardo, Say and Ramsay) and the main point is that these later classical economists all accepted Smith's dogma. On Ricardo, Marx commented, 'Ricardo reproduced Adam Smith almost verbatim' (C.II., 465). Marx concluded this discussion of the 'former presentations of the subject' with the following summary statement: 'The result is that Smith's confusion persists to this day, and his dogma forms an article of orthodox belief in political economy' (C.II., 467). Surely this chapter provides strong evidence that the main purpose of Marx's reproduction tables was to refute once and for all Smith's dogma, this 'article of faith' in classical economics.

Chapter 20 ('Simple Reproduction')

Chapter 20 begins with another short introductory section entitled 'Formulation of the Problem'. In this section, there is the following succinct statement of the problem to be investigated: 'The immediate form in which the problem presents itself is this. How is the *capital consumed in production replaced in its value out of the annual product*, and how is the movement of this replacement intertwined with the consumption of surplus-value by the capitalists and of wages by workers?' (C.II., 469; emphasis added). This question was the focus of Marx's previous discussions of Smith's dogma and is clearly concerned with flows of money, money which functions as capital and money which functions as revenue.

In this introduction, Marx also emphasized that the reproduction of the total social money capital also involves the reproduction of the material elements of production, especially the means of production.

For our present purposes, in fact, 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. (C.II., 469)

The 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. (C.II., 470)

These passages have often been interpreted to support the neo-Ricardian interpretation that Marx's reproduction tables are defined fundamentally in terms of the physical quantities of inputs and outputs, similar to Leontief or Sraffian input-outputs matrices. However, it should be clear from all that has been discussed above and will be discussed below that the primary purpose of Marx's analysis of the reproduction of social capital was to refute Smith's dogma by analyzing the reproduction of the various components of *money capital*. The key argument in Marx's refutation is that, if Smith's dogma were true and the total price of the total commodity product were resolved entirely into revenue, then the constant-capital consumed could not be recovered, from which it follows that the physical means of production could not be repurchased and production could not continue on the same scale. This is the primary sense in which Marx's analysis of reproduction of capital is also concerned with the reproduction of use-values: *the necessity to reproduce the physical means of production means that Smith's dogma cannot be true*. If the total price were entirely resolved into revenue, then there would be no money with which to repurchase the consumed means of production.

A second sense in which Marx's analysis of reproduction is concerned with the reproduction of use-values, to be developed below, is the possibility of disruptions which result from the fact that some of the physical means of productions (machines and so on) are not replaced every year, but only after a number of years. Neither one of these points regarding the reproduction of use-values requires

the specification of the physical quantities of inputs and outputs. Marx's analysis of the reproduction of capital is not concerned with the physical quantities of inputs and outputs, except as related to the reproduction of money capital. Indeed Marx's analysis demonstrates that *the reproduction of use-values in capitalism is dependent on the reproduction of money capital*, especially in the specific sense that the reproduction of the physical means of production depends on the reproduction of the constant-capital. The reproduction of use-values in capitalism has its own unique characteristics which can only be analyzed in terms of the reproduction of money capital. As Marx expressed this point, 'If production has a capitalist form, so too will reproduction' (C.I., 711).

Marx also noted in this introduction that his analysis of the reproduction of the total social capital assumes that the prices of individual commodities are proportional to their values (C.II., 469). However, he commented that, even if prices diverged from their values, 'this circumstance cannot exert any influence on the movement of the social capital' (C.II., 469). In other words, even if the prices of individual commodities diverged from their values, the main conclusions of Marx's analysis of the reproduction of the total social capital – that Smith's dogma must be wrong (that is, that the price of the product of the total social capital must contain a component of constant capital in addition to revenue) and that the discontinuity of investment in fixed capital is a possible source of disruptions in the reproduction of capital (to be discussed below) – would still follow without modification.

As we have seen, Marx returned to the subject of the reproduction of social capital in Chapter 49 of Volume Three of *Capital*, after prices of production had been derived in Part 2 of Volume Three. Hence, if individual prices differing from their values made any difference in the analysis of reproduction, Marx presumably would have dropped this assumption and examined these differences in this chapter. Instead Marx stated at the beginning of the chapter that he would continue to ignore the distinction between values and prices of production because this distinction has no effect on the reproduction of the total social capital: 'For the analysis that follows, we can ignore the distinction between value and price of production, since this distinction disappears whenever we are concerned with the value of labor's total annual product, i.e. with the value of the product of the total social capital' (C.III., 971). Marx's emphasis in this chapter, as we have seen, was once again on the

critique of Smith's dogma. This critique does not depend in any way on whether or not the prices of individual commodities are proportional to their values.

Section 2 ('The Two Departments of Social Production') presents in detail the basic framework of his reproduction tables and the division of society's total product into two departments (means of production and means of consumption). The key magnitudes in the reproduction tables are the component parts of the capital invested and recovered in the two departments (constant capital, variable capital and surplus value). It is clearly stated that these components of capital are defined in terms of money: 'The figures may be in millions of marks, francs, or pounds sterling' (C.II., 473). The main question analyzed by Marx in these reproduction tables, as in the previous discussions, is how the different components of money capital invested are eventually recovered as a result of the various transactions between and within these two departments, so that capitalist production can continue in the next year on the same scale. Once again the precise quantities of physical inputs and outputs play no essential role in this analysis of the reproduction of the various components of money capital.

Section 3 ('Exchange Between the Two Departments') analyzes the key acts of exchange between the two departments: (1) the sale of means of consumption by capitalists in department II to workers and capitalists in department I (an exchange between capital and revenue) and (2) the sale of means of production by capitalists in department I to capitalists in department II (an exchange between capital and capital). By means of these exchanges (1) the money advanced as constant capital in department II is recovered, thus enabling capitalists in department II to repurchase means of production; and (2) the money advanced as variable capital in department I is recovered, thus enabling capitalists in department I to repurchase labor power. Marx also emphasized again the 'reflux of money', that is the general result that the money which capitalists cast into circulation, either through the investment of capital or the expenditure of surplus value as revenue, eventually flows back to the respective capitalists, through the sale of their products: 'The general conclusion that follows, as far as concerns the money that the industrial capitalists cast into circulation to mediate their own commodity circulation, is that ... the same amount of value flows back to the respective capitalists as they themselves advanced for the monetary circulation' (C.II., 477).

Section 4 ('Exchange Within Department II') begins with the following statement pertaining to Smith's dogma:

Of the value of the commodity product in department II, we still have to investigate the components $v + s$. This does not bear on the most important question we are dealing with here: the extent to which the breakdown of the value of each individual capitalist commodity product into $c + v + s$ holds also for the value of the total annual product, even if mediated by a different form of appearance. That question is resolved by the exchange of $I(v + s)$ against $II(c)$, on the one hand, and by the reproduction of $I(c)$ in the annual commodity product of department I on the other, something that will be left for later investigation. (C.II., 478; emphasis added)

The 'most important question' to which Marx referred in this passage – whether the total price of the total social product is resolved into $c + v + s$ or only into $v + s$ – is of course the key issue with respect to Smith's dogma. Although this section does not address this key question (because it is not concerned with the constant capital component of the price of commodities), it does explain how the money advanced as variable capital by capitalists in department II returns to the respective capitalists in department II by the sale of means of consumption to workers in department II.

Section 5 ('The Mediation of the Exchanges by Monetary Circulation') emphasizes that all the money used to purchase both the two main components of the total social product – the means of production and the means of consumption – comes from money that capitalists themselves have thrown into circulation. This fact that all money in circulation originally comes from capitalists is true even in the sense that the money which realizes the surplus value of the capitalists in department I was cast into circulation by these same capitalists in department I (by means of the purchase of means of consumption from the capitalists in department II).

Section 6 ('Constant Capital in Department I') presents the final piece to Marx's explanation of how the various components of capital in the two departments are recovered. The constant capital advanced in department I is recovered by means of the sale of means of production to other capitalists in department I. This purchase of means of production by capitalists in department I enables them to replace in kind the means of production consumed in this year's production and to continue production on the same scale.

Section 7 ('Variable Capital and Surplus-Value in the Two Departments') explains one reason why Smith was misled into thinking that the total price of the total social product is entirely resolved into revenue. Section 3 explained how the exchanges between the two departments – the sale of means of consumption by capitalists in department II to workers and capitalists in department I and the sale of means of production by capitalists in department I to capitalists in department II – lead to the result that the constant capital in department II is equal to the variable capital plus surplus value in department I (that is, equal to the revenue of department I). In this sense, the price of the means of consumption really is 'entirely resolved into revenue'.

However, Marx showed by means of his reproduction tables and his distinction between department I and department II that this result applies only to department II, that is, it applies only to the price of the means of consumption. It does not apply to the price of the means of production and therefore not to the price of the total commodity product. Smith argued that the price of the means of production could also be resolved into revenue in similar fashion to the price of the means of consumption, but he was wrong. All the revenue of society is spent to purchase the means of consumption produced in department II. If the total price of commodities consisted entirely of revenue, there would be no money left over to purchase the means of production and capitalists in both departments would not be able to repurchase consumed means of production.

Marx argued further that even this resolution of the price of the means of consumption into revenue does not apply in the sense that the total value produced in department II was *produced* by this year's labor in department II. Instead, part of the price of the means of consumption is due to the value produced by the labor of previous years in department I, which existed previously in the price of the means of production. And the price of the means of consumption is equal to the total revenue of society only because this total revenue includes the revenue of department I and thus includes the value produced by this year's labor in department I.

Section 8 ('Constant Capital in Both Departments') makes a similar argument related to this latter point in Section 7: that the confusion surrounding the reproduction of constant capital stems from the fact that the current labor in both departments produces

new value, which is equal to the price of the means of consumption and which provides revenue in both departments with which the means of consumption are purchased. This fact makes it appear as if there is no labor left over to reproduce the means of production, or that the means of production somehow reappear without any labor having been expended by society to produce them. However Marx explained this contradictory appearance by the existence of the value of the consumed means of production prior to the current year and by the distinction between abstract and concrete labor. The labor of the current year both produces new value, by virtue of its character of abstract labor, and enables the old value of the means of production to be transferred to the final product, by virtue of its character of concrete labor, which uses means of production to produce a final product.

Section 9 ('A Look Back at Adam Smith, Storch, and Ramsay') is a brief, early version of what was later expanded and became Chapter 19, which has already been discussed above (this section and most of the rest of Chapter 20 was written in 1870 and Chapter 19 was written in 1878). This section begins with the following clear succinct statement of Smith's dogma:

Adam Smith put forward this fanciful dogma, which is still believed to this day, in the form already discussed, according to which the entire value of the social product resolves itself into revenue ... Right to the present, this remains one of the most well-loved platitudes, or rather eternal truths, of the so-called science of political economy. (C.II., 510)

Section 10 ('Capital and Revenue: Variable Capital and Wages') argues against the view, related to Smith's dogma, that the variable capital which functions as capital in the hands of capitalists becomes revenue in the hands of workers after the purchase of labor power. Marx argued instead that the purchase of labor power converts the variable capital of the capitalists from the form of money to the form of labor power. But since the variable capital remains in the hands of capitalists, although in a different form, it cannot become revenue for workers. Instead, from the point of view of workers, what is converted into revenue by the sale of their labor power is the value of this labor power, not the variable capital of the capitalists.⁹

Section 11 ('Replacement of Fixed Capital') will be discussed below in connection with Chapter 21, because of the similarity of the themes dealt with.

Section 12 ('Reproduction of the Money Material') assumes that money is gold and analyzes gold production as a section of department I. The main point of the section is a critique of the views of Smith and Tooke regarding the quantity of money needed for circulation, which are related to Smith's dogma. Marx summarized this critique as follows:

We saw that for Adam Smith the entire value of the social product resolved itself into revenue, into $v + s$ and that the value of the constant capital was taken as zero. It necessarily follows from this that the money required for the circulation of the annual revenue would also be sufficient for the circulation of the entire annual product ... This was in fact Smith's opinion and was repeated by Thomas Tooke. This false conception of the ratio between the quantity of money needed to realize revenue and the quantity of money that circulates the total social product is a necessary result of the uncomprehending, thoughtless manner in which they view the reproduction and annual replacement of the different material and value elements of the total annual product. It is therefore already refuted. (C.II., 551)

Finally Section 13 ('Destutt de Tracy's Theory of Reproduction') serves Marx as an example of 'the confused and at the same time boastful incomprehension shown by political economists in dealing with social reproduction (C.II., 556). The main issue discussed is de Tracy's attempt to explain surplus value by capitalists selling their commodities – to other capitalists, to workers and to landlords – at a price that exceeds their value.¹⁰ Marx showed in each of these three cases the logical contradictions that result from this explanation of surplus value.

Section 11 of Chapter 20 ('Replacement of the Fixed Capital') and Chapter 21 ('Accumulation and Reproduction on an Expanded Scale')

Section 11 of Chapter 20 and Chapter 21 were written late (1878) in one of the last Volume Two manuscripts (VIII) and introduce an important new theme into Marx's analysis of reproduction, which

Marx seems to have discovered while working on his reproduction tables: the effects of the discontinuity of investment in fixed capital on the reproduction of capital.¹¹ In the case of simple reproduction (Section 11 of Chapter 20), this discontinuity of investment results from the fact that buildings and machinery and other forms of fixed capital are not replaced every year, but only after a number of years. This discontinuous reinvestment means that part of the constant capital recovered by some capitalists is not immediately used to replace buildings, machinery and so on, but instead remains in the form of a *money hoard*. This formation of money hoards seems to imply that in a given year some capitalists in department I will not be able to sell all their output. This apparent difficulty is at least partially overcome by the fact that, in any given year, other capitalists possess an additional sum of money capital which has been accumulated in previous years from annual depreciation charges and which eventually enables these capitalists to repurchase their machinery and so on when it is worn out. This additional sum of money capital provides an additional source of demand for the machinery and so on produced in department I.

However, in order for the demand for machinery and so on to be equal to their supply, and thus for simple reproduction to continue smoothly, Marx emphasized that the following two conditions must hold: (1) the price of the machinery and so on which has to be replaced by some capitalists must be equal to the annual depreciation charges of the remaining capitalists and (2) these amounts must remain constant from year to year. Marx argued that, because of the anarchic nature of capitalist production, it is extremely unlikely that such a balance could be achieved and maintained. Thus he concluded:

This example of fixed capital – in the context of reproduction on a constant scale – is a striking one. A disproportionate production of fixed and circulating capital is a factor much favored by the economists in their explanation of crises. *It is something new to them that a disproportion of this kind can and must arise from the mere maintenance of the fixed capital.* (C.II., 545; emphasis added)

Similarly the main purpose of Chapter 21 is to explore further this theme of the possibility of disruptions in the reproduction of capital in the context of expanded reproduction.¹² As in the previous discussion, the main source of disruptions is the discontinuity

of investment in fixed capital – the fact that a certain minimum amount of money capital is required before additional buildings, machinery and so on can be purchased, so that potential money capital must be hoarded over multiple production periods. The difference in the case of expanded reproduction (compared to simple reproduction) is that the money capital that is hoarded in order later to purchase machines is part of the surplus value component of the price of commodities, rather than the constant capital component.

The fact that some surplus value must be hoarded in anticipation of future investment in fixed capital means that, unless there is some offsetting source of demand, there would be a shortfall of demand to purchase all the commodities produced. However, once again, there usually is an offsetting source of demand: other capitalists who have hoarded surplus value in previous periods and who now 'dishoard' their potential money capital and use it to purchase additional machines and so on. Thus the necessary condition for continued smooth expanded reproduction is that the amount of potential money capital hoarded by some capitalists must be equal to the amount of money capital dishoarded by other capitalists to purchase additional machines and so on. Marx emphasized again that it is extremely unlikely that such a balance will be achieved because of the anarchy of capitalism. Thus the condition for smooth expanded reproduction becomes a condition for the disruption of reproduction. The necessity to hoard surplus value as potential money capital is another inherent source of instability in capitalist economies.

Marx also commented several times in this chapter (C.II., 569, 574, 594) that the credit system evolved as a means to concentrate the multiple hoards of potential money capital and to make these hoards available to other capitalists for use as active money capital to purchase means of production and labor power, thus enabling capitalism, to overcome, at least in part, the disruptions stemming from the necessity to hoard potential money capital. However Marx also commented that the credit system increases the 'artificial character of reproduction' and thus also increases the chances that 'its normal course will be disrupted' (C.II., 376).

In Section 3 of this chapter, Marx identified another possible source of disruption of reproduction – varying rates of accumulation.¹³ For example, an increase in the rate of accumulation means that a smaller proportion of surplus value is used to purchase means of consumption and a greater portion is used to purchase means of

production. This change in the proportions of surplus value that are accumulated and consumed means that, if reproduction is to continue smoothly, means of production and means of consumption must be produced in greater and smaller proportions, respectively. Again the anarchy of capitalism makes it unlikely that such a change in the proportions between means of production and means of consumption will occur smoothly and without disruption.

Thus it is clear that, in Marx's analysis of expanded reproduction, as in his analysis of simple reproduction, the tables of reproduction are defined in terms of quantities of money, not in terms of physical quantities of inputs and outputs. The questions dealt with in the analysis of expanded reproduction are all concerned with *money capital* and the effects of this characteristic feature of capitalism, especially on the tendency of capitalism toward periodic crises. Marx's analysis and conclusions in this chapter – the effects of the need to hoard potential money capital and of varying rates of accumulation on the continuity of reproduction, and the development of the credit system to activate hoards of potential money capital – do not depend in any way on the specification of the physical quantities of inputs and outputs (that is on input – output coefficients). These physical quantities were never specified or assumed by Marx because they are not necessary for the questions being analyzed. Instead the focus throughout is on quantities of money capital.

The fact that the production of commodities is the general form of capitalist production already implies that *money* plays a role, not just as means of circulation, but also as *money capital* within the circulation sphere, and *gives rise to certain conditions for normal exchange that are peculiar to this mode of production, whether simple or expanded reproduction, which turn into an equal number of conditions for an abnormal course, possibilities of crisis, since, on the basis of the spontaneous pattern of this production, this balance is itself an accident.* (C.II., 570–71; emphasis added)

CONCLUSION

This paper has argued that the quantities in Marx's reproduction tables in Part 3 of Volume Two of *Capital* and related drafts are not defined in terms of physical quantities of inputs and outputs and

do not depend in any way on the specification of these physical quantities. Instead the reproduction tables consist of quantities of money which circulate as capital and as revenue, and have to do primarily with the reproduction of the various components of the money capital invested in the two departments. The main purpose of Marx's reproduction tables was to refute Smith's dogma, the erroneous view that the total price of the total social product is entirely resolved into revenue. Smith's dogma and Marx's refutation of it do not depend in any way on the physical quantities of inputs and outputs. Instead Smith's dogma has to do with the components into which the total price of the total social product can be resolved. Since the total price is defined in units of money, the components of this total price are also defined in units of money. Marx's refutation of Smith's dogma has to do with the distinction between money which functions as capital and money which functions as revenue. Since capital is defined in terms of money, the components of capital (constant capital, variable capital) and surplus value are also defined in terms of money.

Therefore one of the main supports of the neo-Ricardian interpretation of Marx's theory has been shown to be erroneous. Marx's reproduction tables of money capital are not physical input – output matrices. These reproduction tables provide no evidence for the neo-Ricardian interpretation that Marx began his theory with given physical quantities of inputs and outputs and derived values and prices from these given physical quantities. Instead these reproduction tables support the alternative interpretation, which has been presented elsewhere (Moseley, 1993), that the basic framework for Marx's theory is the *circulation of capital* and that the circulation of capital is defined in terms of quantities of *money* which are invested and recovered through the production and sale of commodities. The quantities of money which initiate the circulation of capital through the purchase of means of production and labor power are the fundamental givens (the starting-point) in Marx's theory, not the physical quantities of inputs and outputs. The full implications of this alternative interpretation are far-reaching. We have discussed elsewhere (Moseley, 1993, 1997) the implications of this alternative interpretation for Marx's theory of equal rates of profit and prices of production (that is, for the 'transformation problem').

The burden of proof would thus appear to be on the neo-Ricardians to provide other arguments and other evidence that

Marx's theory is based on physical input – output tables, that is to say that it is essentially the same as Sraffa's theory. Marx's reproduction tables provide evidence to the contrary.

Notes

1. I have argued in Moseley (1993) that the related neo-Ricardian interpretation of Marx's theory of value and price, mentioned in the previous paragraph, is likewise fundamentally mistaken.
2. Other authors who have briefly discussed the relation between Marx's reproduction tables and Smith's dogma include Heinrich (1989 p. 69) and Clarke (1994 p. 269). These discussions alerted me to this connection and prompted my further study of Marx's reproduction tables from this perspective. Elsewhere (Moseley, 1995) I have criticized Heinrich's interpretation of other aspects of Marx's theory, but he is right that Marx's work on the reproduction tables was motivated by his desire to critique Smith's dogma.
3. Foley (1986, ch. 5) has also emphasized that Marx's reproduction schemes consist of quantities of money capital. However Foley argues that the main purposes of Marx's analysis of reproduction was to determine the necessary proportions between the money capital in the two departments for stable reproduction and to investigate the problem of aggregate demand. These themes are dealt with in Marx's analysis of reproduction, but they are not the most important subjects.
4. The references to Marx in this paper utilize the following shorthand notation:

C.I.	<i>Capital</i> , Volume 1.
C.II.	<i>Capital</i> , Volume 2.
C.III.	<i>Capital</i> , Volume 3.
G	<i>Grundrisse</i>
MECW.31.	<i>Marx-Engels, Collected Works</i> , Volume 31.
SC.	<i>Selected Correspondence</i> .
TSV.I.	<i>Theories of Surplus-value</i> , Volume 1.
5. This principle of historical specificity has been emphasized by Rubin (1972, ch. 4), Korsch (1938, Ch. 2), and Rosdolsky (1968, pp. 77–80).
6. It should be noted that these categories are the reverse of the two departments in Marx's later versions of the reproduction tables.
7. Clarke (1994 p. 269) argues: 'This adaption of Quesnay's scheme developed out of Marx's critique of Adam Smith's neglect of constant capital in reducing the national product to the revenues of wages, rent and profit, ignoring that component which serves to replace the means of production used up during the year, and was the basis of the discussion of reproduction in Part Three of Volume Two of *Capital*.'
8. It should be noted that Marx did not use his reproduction tables to analyze the determination of prices of production in Part Two of

- Volume Three, as in the neo-Ricardian interpretation, beginning with Bortkiewicz, to whose work Sweezy (1968) drew attention.
9. This point is also discussed in Chapter 19, pp. 454–8.
 10. Marx commented: 'Here you have bourgeois cretinism in its ultimate state of bliss' (p. 584).
 11. Marx called this a 'major problem' and commented that 'this problem ... has not been dealt with at all by the political economists up to now' (C.II., 530). See Clarke (1994, pp. 268–73) for a very good discussion of Marx's analysis of the problems posed by the discontinuity of investment in fixed capital for the smooth reproduction of capital.
 12. The debate in the early twentieth century over Marx's reproduction schemes between Tugan-Baranowski, Hilferding, Luxemburg, Lenin and so on was almost entirely concerned with expanded reproduction. Simple reproduction, the bulk of Marx's writing on the subject of reproduction, was hardly ever mentioned. None of the participants in the debate mentioned Smith's dogma. Nor did they discuss the discontinuity of investment in fixed capital as a source of disruptions of reproduction. The main issue in this debate was whether there would be sufficient demand to realize the surplus value produced in the case of expanded reproduction. Therefore the participants in this debate used Marx's reproduction tables for purposes quite different from Marx's own purposes. However they did at least interpret Marx's reproduction tables in terms of quantities of money capital, not in terms of physical quantities of inputs and outputs.
 13. Marx discussed this point primarily in terms of the transition from simple reproduction to expanded reproduction, but the point applies more generally to any change in the proportions of surplus value that are accumulated and consumed.

References

- Clarke, Simon (1994) *Marx's Theory of Crisis*, Macmillan, London.
- Foley, Duncan (1986) *Understanding 'Capital'*, Harvard University Press, Cambridge Mass.
- Gehrke, Christian and Heinz Kurz (1995) 'Karl Marx on the Physiocrats', *European Journal of the History of Economic Thought*, 1.
- Heinrich, Michael (1989) 'Capital in General' and the Structure of Marx's *Capital*', *Capital & Class*, no. 38, Summer: 63–79.
- Howard, M.C. and J.E. King (1985) *The Political Economy of Marx*, 2nd ed, New York University Press, New York.
- Korsch, Karl (1938) *Karl Marx*, Chapman Hall, London; reprinted Russell, New York 1963.
- Lange, Oscar (1969) *Theory of Reproduction and Accumulation*, Pergamon, New York.
- Marx, Karl (1956/1963) *Theories of Surplus-value*, Volume 1, Progress Publishers, Moscow.
- Marx, Karl (1939/1973) *Grundrisse: Introduction to the Critique of Political Economy*, Penguin Books, Harmondsworth.

- Marx Karl (1867/1977) *Capital*, Volume 1, Random House, New York.
- Marx Karl (1884/1978) *Capital*, Volume 2, Random House, New York.
- Marx Karl (1894/1981) *Capital*, Volume 3, Random House, New York.
- Marx, Karl and Frederick Engels (1975) *Selected Correspondence*, Progress Publishers, Moscow.
- Marx, Karl and Frederick Engels (1989) *Collected Works*, Volume 31, International Publishers, New York.
- Moseley, Fred (1993) 'Marx's Logical Method and the "Transformation Problem"', in F. Moseley (ed.), *Marx's Method in 'Capital': A Re-examination*, Humanities Press, Atlantic Heights, NJ.
- Moseley, Fred (1995) 'Capital in General and Marx's Logical Method: A Response to Heinrich's Critique', *Capital & Class*, no. 56, Summer: 5–48.
- Moseley, Fred (1997) 'The Return to Marx: Retreat or Advance?', in Alan Freeman (ed.), *The New Value Controversy and the Foundations of Economics*, Edward Elgar, Aldershot.
- Morishima, M. (1973) *Marx's Economics: A Dual Theory of Value and Growth*, Cambridge University Press, London.
- Rosdolsky, Roman (1968) *The Making of Marx's Capital*, Pluto Press, London.
- Rubin, I.I. (1972) *Essays on Marx's Theory of Value*, Black and Red Press, Detroit.
- Sweezy, Paul (1968) *The Theory of Capitalist Development*, Monthly Review Press, New York.

8

The Status of Marx's Reproduction Schemes: Conventional or Dialectical Logic?

Geert Reuten

INTRODUCTION

Marx's *Capital* is an unfinished project, in the narrower sense of the plan for the work with this title, dating from 1862, and even more so in the wider sense of a theory of the interconnection of economy and state and of the development of world capitalism. The evaluation of what is there obviously depends on the method adopted by Marx, but opinions diverge on the interpretation of that method.¹

Some prefer to read Marx in a 'conventional' way, as adopting a method of inquiry in line with formal logic; that is, not different *in principle* from approaches of modern orthodox economics. In this case one has to 'neglect', 'de-emphasize', 'purify it from' some supposedly superfluous jargon of Marx, stemming from his flirtation with an obscure dialectics. One finds such a position held by people ranging from adversaries and sympathetic critics to scholars themselves working in the Marxian tradition. Others see Marx adopting a systematic-dialectical method, in line with – though not necessarily the same as – Hegel's dialectical logic (1812, 1817).² Here most commentators agree that Marx's *Capital* did not reach a full systematic-dialectical presentation and that the work requires reconstruction and further development.³

Both groups can find support for their position in quotations from Marx concerning his relation to Hegel's dialectic, spread out over the course of his writing life. It is useful then to study the texts

of *Capital* and see if these resolve the matter. This is the aim of the case study reported in this paper. However the reader interested in decisive answers only can stop reading here: it will appear that the case presented below is compatible with both positions.

The systematic presentation of Marx's *Capital* is organized in its parts rather than its chapters (eight parts for Book I, three for II and seven for III). The second book of *Capital*, 'The Process of Circulation of Capital' (1885), is made up of parts on the circuits of capital, the turnover of capital, and the reproduction and circulation of capital. In this paper I investigate the methodological status of this last part, 'The Reproduction and Circulation of the Total Social Capital'. As indicated, of particular interest is the question to what extent we find in this part a (systematic) dialectics going on, or rather some other method, perhaps the groundwork for a modelling approach as adopted by much of modern orthodox economics. As will be argued towards the end of this paper, a case can be made for this latter thesis of a modelling approach. The questions then remain how it differs – if at all – from modern orthodox modelling approaches and how this approach might fit – if at all – into a systematic-dialectical methodology. In order to put those questions into perspective, and prior to outlining the case, I first provide some information on the case material.

THE NOTEBOOKS FOR THE CHAPTERS ON REPRODUCTION AND CIRCULATION

Both Book II and Book III of *Capital* were edited by Engels from Marx's notebooks. These notebooks differ in status from notes to preliminary drafts to revisions of the various drafts. Generally it seems that Book II has more the status of reordered though barely edited notebooks than Book III. Many of the Book II chapters show signs of being a first study of the subject; their analytical rigour and depth differ greatly, and some parts are very repetitious. One may speculate as to how the work might have looked if Marx had drafted it for publication. Engels, anyway, did not consider it his task to rewrite the material (see Engels's preface).

The material for Part Three, on reproduction and circulation, was taken from Notebooks II (written in 1870), and VIII (1878) – see Engels's preface (in Marx, 1885: 103–4).⁴ The 1878 Notebook VIII,

redrafting the part on reproduction, was probably the last work Marx undertook for *Capital* (see Oakley, 1983: 101–3).

All the quotations below are from the Penguin edition in Fernbach's translation; all page references are preceded by a Roman number, indicating the notebook from which it is taken. For example II:109 means that the quotation is from Notebook II, page 109 in the Penguin edition (Marx, 1885). Part Three is made up of four chapters: Chapter 18: Introduction (8 pages); Chapter 19: Former Presentations of the Subject (33 pages); Chapter 20: Simple Reproduction (97 pages); Chapter 21: Accumulation and Reproduction on an Expanded Scale (35 pages).

Chapter 19 deals mainly with the theories of Quesnay and Smith. The piece on Quesnay and his *Tableau Économique* is relatively brief.⁵ Whilst he considers the Physiocratic system 'the first systematic conception of capitalist production', he sees in Smith *vis-à-vis* the Physiocrats on the one hand progression – for his generalizing '*avances primitives*' and '*avances annuelles*' into 'fixed' and 'circulating' capital – and on the other retrogression consisting in 'the acceptance and the perpetuation of the concepts of "fixed" and "circulating" as decisive distinctions' (VIII:438).⁶

The introductory chapter sets out the interconnection of the subject under investigation with the analysis of Book I of *Capital* ('the immediate production process of capital') as well as with Parts One and Two of the present Book II: (1) 'the various forms that capital assumes in its circuit, and the various forms of this circuit itself'; (2) 'the circuit as a periodic one, i.e. as a turnover'. In Book I, 'the capitalist production process was analysed both as an isolated event and as a process of reproduction: the production of surplus-value and the production of capital itself'. Parts One and Two dealt with 'no more than an individual capital, the movement of an autonomous part of the social capital'. However, Marx continues, 'the circuits of individual capitals are interlinked, they presuppose one another and condition one another, and it is precisely by being interlinked in this way that they constitute the movement of the total social capital' (II:427–9).

Thus this is what is presented in Chapters 20 and 21: 'the circulation process of this total social capital' which, taken in its entirety, is 'a form of the reproduction process' (II:430). These two chapters will be discussed in the next two sections. Note that in what follows I will frequently use the term 'model' for Marx's representations of

reproduction. It is taken to be a general term that can be adopted in dialectical as well as non-dialectical discourses – each time, however, with different qualifications. I will come back to this in the last Section.

SIMPLE REPRODUCTION

The Construction of a Macroeconomics

Perhaps the most important aspect of the chapters on reproduction is to be found in the opening section of Chapter 20: here we find in fact the construction of a macroeconomics, the 'functioning of the social capital', as Marx calls it, the movement of individual capitals being 'an integral link in the movement of the total capital'. We have, on the one hand, the elements of production of the individual capital, 'in so far as they are of the objective kind', forming a component of the social capital; and, on the other hand,

the movement of the part of the social commodity product that is consumed by the worker in spending his wage, and by the capitalist in spending surplus-value, not only forms an integral link in the movement of the total product, but is also interwoven with the movements of the individual capitals, so that its course, too, cannot be explained by being simply presupposed. (II:469)

The problem of reproduction, then, is: 'How is the *capital* consumed in production replaced in its value out of the annual product, and how is the movement of this replacement intertwined with the consumption of surplus-value by the capitalist and of wages by the workers?' (II:469).

Whereas Marx's solutions to the problem are of interest – as we will see – the major achievement is the particular posing of the problem. Of course many aspects of the problem may be obvious from the standpoint of the end of twentieth-century economics. It is therefore useful to quote three opinions from a time when Keynes's macroeconomics had been on the scene for only a few years, and these issues were less evident:

Marx ... developed the fundamental scheme describing the interrelation between consumer and capital goods industries. (Leontief, 1938:93)

His theory is probably the origin of macro-economics. (Klein, 1947:154)

The theory adumbrated in Volume Two of *Capital* has close affinities with Keynes. (Robinson, 1948:103)

Whilst it is perhaps arbitrary where we locate 'the' origin of macroeconomics (Klein) – Quesnay and Ricardo certainly also provided seminal elements – it is certain that Marx conceived the multiple dimensions of the problem: material and value, as well as production and circulation in their several aspects. In this respect we see here the culmination of both Marx's value-form theory (*Capital*, I) and the theory of the metamorphoses of capital and their circuits (*Capital*, II, Part One). We see this in the extract from Marx given above, and it is even more obvious one page further on in the text:

As long as we were dealing with capital's value production and the value of its product individually, the natural form of the commodity product was a matter of complete indifference for the analysis, whether it was machines or corn or mirrors. ... But this purely formal manner of presentation is no longer sufficient once we consider the total social capital and the value of its product. ... [The latter's movement is] conditioned not just by the mutual relations of the value components of the social product but equally by their use-values, their material shape. (II:470)

Thus we see the construction of not only a macroeconomics, but a particular macroeconomics emphasizing the twofold conflicting guises of the capitalist economy – value and use-value – for which at least temporary modes of operation have to be established (modes which Marx shows to be ridden with contradictions, as manifest especially in economic crises). Thus we have, on the one hand, use-value, the material component of production necessary for 'natural survival' – however much shaped by the actual capitalist mode of production. On the other hand, we have value (ultimately money profits), driving and shaping the course of production, necessary for 'capitalist survival'. But for capitalism the two are one; the one has no existence without the other.

This twofold macroeconomics contrasts sharply with the post-Keynes orthodox macroeconomics approaches dichotomizing the problem into two separate sides, or reducing the problem to one of

its sides (either monetary or physical, the latter homogenized via index numbers).

For the further construction of the macroeconomics model Marx operates in two stages. Starting in Chapter 20 with a model of 'Simple Reproduction', where capitalists consume all surplus value, he considers in Chapter 21 'Expanded Reproduction'; that is, the realistic situation where capitalists accumulate (part of) the surplus value. This is a very remarkable procedure, one which he had also adopted in the earlier parts of the book (see especially Chapter 2). Marx emphasizes over and over again that accumulation of capital is essential to the system. At the very end of the book he states forcefully that simple reproduction is 'incompatible with capitalist production from the very start' (VIII:596). So why start with something that is alien to the object of inquiry? What kind of abstraction or kind of simplification is this? Indeed for a simplification we might expect simplification to what is essential. Or is Marx rather cutting up the problem into (non-essential) parts that can be analysed separately?

a⁷ Simple reproduction on the same scale seems to be an abstraction, both in the sense that the absence of any accumulation ... is an assumption foreign to the capitalist basis, and in the sense that the conditions in which production takes place do not remain absolutely the same in different years (which is what is assumed here). ... But since, when accumulation takes place, simple reproduction still remains a part of this, and is a real factor in accumulation, this can also be considered by itself. (VIII:470-71)

Some pages later the point is stated again, but now in terms of the Faustian conflict between the capitalist passion for accumulation and the desire for consumption, alluded to in Part Seven of *Capital*, I (740-41): 'Simple reproduction is oriented by nature to consumption as its aim. ... In so far as simple reproduction is also part of any reproduction on an expanded scale, and the major part at that, this motive remains alongside the motive of enrichment as such and in opposition to it' (VIII:487). As we will see below (towards the end of the next section) simple reproduction, even if 'foreign to the capitalist basis', appears to be the sea on which accumulation moves.

The opening section of Chapter 20 contains another assumption disregarding an essential characteristic of capitalism:

b Moreover, we assume not only that products are exchanged at their values, but also that no revolution in values takes place in the components of the productive capital. (II:469)

This assumption is maintained throughout the remainder of the book.⁸ Its first part (exchange at values) is not surprising: it fits into the general systematic of *Capital*, and is in fact dropped in Part Two of Book III. The question is whether dropping this assumption would affect the macroeconomic construct as well as the particular 'schema' to be developed later on. The answer is no; hence any divergence of price from value is *irrelevant* for the problem at stake:

In as much as prices diverge from values, this circumstance *cannot exert any influence* on the movement of the social capital. *The same mass* of products is exchanged afterwards as before, even though the value relationships in which the individual capitalists are involved are no longer proportionate to their respective advances and to the quantities of surplus-value produced by each of them. (II:469; emphasis added)⁹

The second part of the assumption is remarkable to the extent that in *Capital*, I 'revolution in values' has already been shown as essential to the system. However this part of assumption **b** is evidently of different status from the previous one, **a**. With it the very construction of the macroeconomics is at stake. Whereas the distinction related to **a** is relevant for the problem, it seems to be made for heuristic reasons. For **b**, however, Marx holds that for the problem at hand the issue of 'revolutions in value' is *irrelevant*, or neglectable:

As far as revolutions in value are concerned, they change nothing in the relations between the value components of the total annual product, as long as they are generally and evenly distributed. In so far as they are only partially and unevenly distributed, they represent disturbances which, *firstly*, can be understood only if they are treated as *divergences* from value relations that remain unchanged; *secondly*, however, given proof of the law that one part of the value of the annual product replaces constant capital, and another variable capital, then a revolution ... would alter only the relative magnitudes of the portions of value that function in one or the other capacity. (II:469-70)

In other words, even unevenly distributed 'revolutions in value' – though affecting the magnitudes of the components of (social) capital – would not change the particular macroeconomic *interconnections* between constant and variable capital (as well as between them and surplus value) in the way they will be seen to be set out by Marx.

A Two-sector Macroeconomic Model

The next phase for constructing the model is central to Marx's approach. He constructs a two-sector macroeconomics model – as far as is known, the first in the history of economics, even if the inspiration for thinking in *similar abstract* categories may have come from Quesnay (1759). The model is composed of two 'departments'. Department I is the sector producing means of production, department II the one producing consumption goods. At the same time this composition fits Marx's particular value-theoretical distinction between constant capital and variable capital.

c The society's total product, and thus its total production process, breaks down into two great departments:

1. *Means of production*: commodities that possess a form in which they either have to enter productive consumption, or at least can enter this.

2. *Means of consumption*: commodities that possess a form in which they enter the individual consumption of the capitalist and working classes.

In each of these departments, all the various branches of production belonging to it form a single great branch of production ... The total capital applied in each of these two branches of production forms a separate major department of the social capital. (II:471)

In the text there follow definitions of variable and constant capital (471–2) which emphasize again the twofold character of capital: its material constituent and its value constituent.

So we have three sets of abstractions (retained throughout this volume – Book II – as well as Book III): First the abstraction of the macroeconomic categories of total product, total production process and social capital; second, the division of these categories into two material functional forms (means of production and means of consumption) – which is a *generic* abstraction, applicable

in principle to all modes of production; third, we have the *determinate* abstraction, particularly applicable to the capitalist mode of production, of the division of the same categories into their value constituents (constant capital, variable capital, surplus value) and which, at the same time, reflects the class division in this society.¹⁰ Together these constitute a major analytical and synthetical achievement.

Further Assumptions

d Apparently so as to reduce the problem to its bare elements, Marx next assumes temporarily (that is, throughout the earlier sections of Chapter 20) that there is no fixed capital or, equally, that all fixed capital is used up during the production period (VIII:473). Note that we still have a *flow* both in value (constant capital) and in the 'natural form' of means of production.¹¹

e It is further assumed that for both departments the rate of surplus value (s/v) is equal, constant and given (100 per cent). This assumption is maintained throughout this part. Although it is not commented upon (it is treated at length in both Book I and Book III of *Capital*), it seems a simplifying device without particular relevance to the problem at hand.

f The next assumption concerns the value composition of capital ($c/c + v$), which is, for each department, taken as equal, constant and given. This assumption is maintained throughout Chapter 20, but relaxed several times in Chapter 21. Marx comments:

What is arbitrarily chosen here, for both departments I and II, is the ratio of variable capital to constant capital; arbitrary also is the identity of this ratio between the departments ... This identity is assumed here for the sake of simplification, and the assumption of different ratios would not change anything at all in the conditions of the problem or its solution. (VIII:483)

In fact both simplifications e and f can be made because their possible departmental divergences do not fundamentally affect the problem. This is related to the more severe assumption b: the possible divergences at hand would not affect the interconnection between the departments – yet to be developed. (From the point of view of method, all this is most important: the transformations in

Capital are systematic, not historical. Thus, for example, the value-price transformation in Book III is conceptual and cannot be said *actually* to affect the size of the departments.)

A final assumption, which is maintained throughout the part, is made explicit much further on in the text:

- g Capitalist production never exists without foreign trade. ... Bringing foreign trade into an analysis of the value of the product annually reproduced can ... only confuse things ... We therefore completely abstract from it here. (VIII:546)

This is again an assumption of simplification of the type 'neglectable' for the current problematic.

The Schema of Simple Reproduction and the Condition for Simple Reproduction

The departmental *schema*, and the numerical example, that is used throughout the chapter (in the dimension of money, that is £ or \$ and so on) is the following (VIII:473):

	<i>c</i>	<i>v</i>	<i>s</i>	<i>x</i>	
I.	4000	+ 1000	+ 1000	= 6000	(means of production)
II.	2000	+ 500	+ 500	= 3000	(means of consumption)
	<hr style="width: 100%;"/>			6000 + 1500 + 1500	= 9000 (social gross product) ¹²

where:

- I = department I, producing means of production (6000);
 II = department II, producing means of consumption (3000);
c = constant capital, the value of the means of production applied;
v = variable capital, the value of the social labour power applied;
s = surplus value, the value that is added by labour minus the replacement of the variable capital advanced. (Cf.II:472.)

Although Marx does not comment on the numbers in the schema, they do not seem arbitrary. In an earlier chapter (Ch. 17, II:397-8) Marx quotes an estimate of the ratio of the total capital stock and the total consumption for Britain and Ireland (as reported) by Thompson (1850). This ratio amounts to 3.¹³ A similar ratio in the

schema above is 2. However fixed constant capital has been excluded for the time being.

Generalizing the schema, Marx uses the notation:

$$\begin{aligned} I_c + I_v + I_s &= I \\ II_c + II_v + II_s &= II \end{aligned}$$

In what follows, we adopt the notation that has become conventional in modern Marxian economics:

$$\begin{aligned} c_1 + v_1 + s_1 &= x_1 & (A) \\ c_2 + v_2 + s_2 &= x_2 & (B) \\ \hline c + v + s &= x^{14} & (C) \end{aligned}$$

For simple reproduction, then,

$$x_1 = c \quad \text{or equally,} \quad (D)$$

$$x_2 = v + s \quad (E)$$

Analyzing at length the mutual exchange between the departments, which is 'brought about by a money circulation, which both mediates it and makes it harder to comprehend' (VIII:474), Marx derives the following proportionality condition for simple reproduction (VIII:478):

$$v_1 + s_1 = c_2 \quad (F)$$

He does not use the term equilibrium, but talks of 'proportionate part', and holds that the proportionate part on the left side 'must be equal' to the proportionate part on the right side (VIII:474, 478). The result is:

The new value product of the year's labour that is created in the natural form of means of production (which can be broken down into $v + s$) is equal to the constant capital value c in the product of the other section of the year's labour, reproduced in the form of means of consumption. If it were smaller than IIc [that is, c_2], then department II could not completely replace its constant capital; if it were larger, then an unused surplus would be left over. In both

cases, the assumption of simple reproduction would be destroyed. (VIII:483-4)

Note that condition (F) and the conditions (D) and (E) each imply each other. Representation (F) specially emphasizes the interconnection between the two departments as revealed in their mutual exchange.

The Value of the Total Product and the Value Product of Labour

In an alternative formulation the concept of value-added is brought to the fore:

On the premise of simple reproduction ... the total value of the means of consumption annually produced is equal to the annual value product, i.e. equal to the total value produced by the labour of the society in the course of the year, and the reason why this must be the case is that with simple reproduction this entire value is consumed for the capitalists in department II, the value of their product breaks down into $c + v + s$ [that is, $c_2 + v_1 + s_2$], yet, considered from the social point of view, the value of this product can be broken down into $v + s$. (II:501-2)

Marx formalizes this as:¹⁵

$$x_2 = (v_1 + s_1) + (v_2 + s_2) \quad (G)$$

which has condition (F) at its base.

On the same theme (remember that the numerical schema for department II runs: $2000_c + 500_v + 500_s = 3000_x$) Marx writes:

As far as the constant value component of this product of department II is concerned ... it simply reappears in a new use-value, in a new natural form, the form of means of consumption, whereas it earlier existed in the form of means of production. Its value has been transferred by the labour process from its old natural form to its new one. But the *value* of this two-thirds of the value of the product, 2000, has not been produced by department II in the current year's valorization process. (II:503)

Hence, again, the importance of formula G.¹⁶

Conversely, for department I ($4000_c + 1000_v + 1000_s = 6000_x$) the 4000 constant capital

is equal in value to the means of production consumed in the production of this mass of commodities, a value which reappears in the commodity product of department I. This reappearing value, which was not produced in the production process of department I, but entered it the year before as constant value, as the given value of its means of production, now exists in that entire part of the commodity mass of department I that is not absorbed by department II. (II:498)

Thus we have $c_1 + v_1 + s_1 = x_1 = c_1 + c_2$. Or, in terms of the circuits of *Capital*, II, Part One:

$$\begin{array}{ccccccc} M & \text{---} & C & \{MP; LP\} & \dots & P & \dots & C' & \{MP = x_1\} & \text{---} & M' & (H) \\ | & & | & | & & & & | & & & | \\ 5000 & & 4000_c & 1000_v & & & & 4000_x & + & 1000_x & + & 1000_x & & 6000 \end{array}$$

These distinctions gain even more force when explicitly linked to the twofold character of capitalist economic entities, central to Marx's theory (cf. *Capital*, I, Ch. 1):

Thus the difficulty does not lie in analysing the value of the social product itself [$c + v + s = 9000$]. It arises when the *value* components of the social product are compared with its *material* components.

The constant portion of value, that simply reappearing, is equal to the value of the part of the social product that consists of means of *production*, and is embodied in this part. The new year's value product = $v + s$ is equal to the value of the part of the annual product that consists of means of *consumption*, and is embodied in this. (II:506; cf. 504)

This is even more forcefully expressed in a later notebook:

The overall annual reproduction [$c + v + s = x$], the entire product of the current year is the product of the useful labour of this year [$l^u \rightarrow x$]. But the value of this total product is greater than the portion of its value which embodies the annual labour, i.e. the

labour-power spent during this year [$l^v \rightarrow v + s = y$]. The *value product* of the current year, the value newly created during the year in the commodity form [y], is smaller than the *value of the product*, the total value of the mass of commodities produced during the year [x]. (VIII:513)

Here we see the distinction related to the twofold character of the labour process as technical and valorization process.

Money Circulation and 'the Widow's Cruse'

Throughout the text much emphasis is on the money circulation within and between the two departments (see Campbell in the present volume); a recapitulation is on 491–2; cf. Ch. 17 on the same issue. Especially here we may notice similarities with Quesnay's 'zigzag' in his *Tableau Économique*.¹⁷ In the course of outlining money circulation, Marx formulates the so-called 'widow's cruse' argument (it is derived in Keynes's *Treatise on Money* and in Kalecki (1935); in Kaldor's (1955/6:85) well-known phrase it runs: 'capitalists earn what they spend, and workers spend what they earn'): 'it is the money that department I itself casts into circulation that realizes its own surplus-value' (VIII:495; Marx's emphasis). And in more general terms (cf. Chapter 17, II:409):¹⁸ 'In relation to the capitalist class as a whole, however, the proposition that it must itself cast into circulation the money needed to realize its surplus-value ... is not only far from paradoxical, it is in fact a necessary condition of the overall mechanism' (VIII:497).

Maintenance of Fixed Capital and Disproportionate Production

In Section 11 of Chapter 20, Marx drops assumption d and considers the effect of the incorporation of fixed capital for his model. Thus in terms of annual reproduction he incorporates constant capital components whose life is longer than a year (cf VIII:525). For the individual capital, 'the part of the money received from the sale of commodities, which is equal to the wear and tear of the fixed capital, is not transformed back again into ... productive capital ... it persists in its money form', that is, hoard formation, to be expended when the fixed capital components have to be replaced (VIII:526). Thus the commodity value 'contains an element for depreciation of ... fixed capital' (VIII:528).

For simple reproduction, then, as a 'precondition', the annual total of fixed capital to be renewed 'has to be equal to the annual wear and tear'. 'Such a balance accordingly appears as a law of reproduction on the same scale' (VIII:540). Next Marx discusses the two cases in which this equality does not hold. In the first case, fixed capital has to be renewed, for which there has been insufficient production; thus 'there would be an insufficient amount of reproduction, quite independent of the monetary relations' (VIII:543). 'The reverse happens in the second case, where department I ... has to contract its production, which means a crisis' (VIII:544). Marx emphasizes that such 'disproportionate production of fixed and circulating capital' ('a factor much favoured by the economists in their explanation of crises') can 'arise from the mere maintenance of the fixed capital', that is with simple reproduction. 'Within capitalist society ... it is an anarchic element' (VIII:545).

Conclusions to the Model for Simple Reproduction

The first major achievement of the chapter on simple reproduction is the construction of a macroeconomics generally, with its particular emphasis on the twofold character of the capitalist mode of production. This leads Marx to the – now familiar – distinction between 'value of the product' (production value) and 'value product' (value-added). The second major achievement is to grasp the macroeconomic relations in terms of a two-sector system fitting Marx's approach of general and determinate abstractions. And the third is the general thread in Marx's analysis: to search for the necessary interconnections between the two departments of production. Therefore, rather than the two equations $x_1 = c$, or $x_2 = v + s$, it is the equation $v_1 + s_1 = c_2$ that is central to the analysis. We will see in the next section that a similar equation also provides the guiding thread for Marx's analysis of the macroeconomics of expanded reproduction.

EXPANDED REPRODUCTION

More so than in the previous chapter (Ch. 20), the last chapter (Ch. 21) has the character of an unfinished draft. A main part of the text is a meticulous analysis of how economic growth (twofold) is possible at all. What are the conditions? The import one gets from it

is that the two-department abstraction (carried on from the previous chapter) is a powerful analytical instrument. For example, in the course of the analysis Marx is able to grasp all kinds of spiral (multiplier) effects, such as on page 580, where, starting from an accumulation in department I, there results an overproduction in department II, whence a spiral effect influence department I. At times the two-department division is further differentiated (subdivisions within departments) so as to get to grips with particular problems. Perhaps most importantly, his use of the two-department abstraction indeed brings to the fore the problematic of the twofold character of capitalist entities, processes and relations. With the exception of this last issue, Marx's end result seems generally not too complicated – as judged from the point of view of the end of twentieth-century economic theory on cycles and growth. However, even if that maturation required some 80 years, the real trail-blazing activity was the way in which the problem of this dynamics of the capitalist economy was posited by Marx.

The General Frame for the Analysis: General Assumptions and Abstractions

The chapter on expanded reproduction starts with an analysis of fixed constant capital and the addition to it, which from the side of individual capitals runs in gradual lumps of hoarding (depreciation allowances) and discrete dishoarding (investment); within a department and its branches, one section of capitalists will be engaged in stages of the former ('one-sided sale'), while another section actually buys additional elements of constant capital ('one-sided purchase') (VIII:565–70).¹⁹

The fact that the production of commodities is the general form of capitalist production already implies that money plays a role, not just as means of circulation, but also as money capital within the circulation sphere, and gives rise to certain conditions for normal exchange that are peculiar to this mode of production, i.e. conditions for the normal course of reproduction, whether simple or on an expanded scale, which turn into an equal number of conditions for an abnormal course, possibilities of crisis, since, on the basis of the spontaneous pattern of this production, this balance itself is an accident. (VIII:570–1)

However, Marx's aim for this chapter is *not* the analysis of crises, but rather the accidental balance. (In this respect the point of application is similar to that of the 'equilibrium' growth models of Harrod and Domar.) To this end he assumes, even for the case of expanded reproduction, that

- h balance exists ... that the values of the one-sided purchases and the one-sided sales cover each other. (VIII:570)
- i In the same vein, Marx assumes a sufficient monetary accommodation for expanded reproduction (VIII:576).
- j A further delimitation of the problematic is revealed in the assumption of a sufficient labour force; that is, that 'labour-power is always on hand' (VIII:577). This assumption, however, is not an analytical one, as Marx for its explanation refers back to *Capital I*.

Nevertheless a problem of potential imbalance – or, rather, of potential overproduction – is central to reproduction on an expanded scale insofar as we consider either a transition from simple to expanded reproduction or a transition to further expansion, that is, to a higher growth path. Marx states: 'in order to make the transition from simple reproduction to expanded reproduction, production in department I must be in a position to produce fewer elements of constant capital for department II, but all the more for department I' (VIII:572). In effect, then, department I would substitute spending part of surplus-value (s_1) to means of consumption (some equivalent part of c_2) for spending it on additional means of production (which are now to that equivalent available in commodity form from department I). Department II would thus be stuck with a commodity stock to that equivalent: 'There would thus be an overproduction in department II, corresponding in value precisely to the expansion of production that took place in department I' (VIII:580).

The 'normal' reaction would be for department II to cut back production, which would be fine if it were to the extent of the means of production they could not get from department I anyway. However, given their overproduction, they might want to cut back production more than that, and thus buy even less means of production: 'The over-production in department II might in fact react so strongly on department I ... [that the] latter would thus be inhibited even in their reproduction on the same scale, and inhibited,

moreover, by the very attempt to expand it' (VIII:580). We thus have a real paradox. Marx brings up the problem and refers back to it several times, but does not analyse it any further: from the text it is clear that he purposefully wants to abstract from any crisis elements so as to set out the situation of accidental balance (assumption h).

The Schemes for Expanded Reproduction

In setting out expanded reproduction, Marx proceeds on the basis of – apart from the assumptions h to j just mentioned – the earlier assumptions b to g (assumption a was the one of simple reproduction). However, assumption f, about the composition of capital, is sometimes relaxed so as to allow for divergent compositions as between the departments; nevertheless within a department it remains constant. Apparently Marx does not aim to set out the transition from simple to expanded reproduction. Indeed he assumes that:

k there has 'already been reproduction on an expanded scale' (VIII:566).

For the analysis of expanded reproduction, Marx uses three numerical schemes, which I refer to as Schemata A, B and C.²⁰ Marx treats Schema A very briefly, and its analysis is apparently a preliminary one. Below I present an outline of Schema B, which is also the best worked out case in Marx's text. Towards the end of this section I make some remarks on Schema C.

Once again these schemes are in numerical form; each with different starting values. For all schemata it is at first sight unclear why these specific starting values in particular have been chosen – only towards the end of the chapter does it become clear that they are meant to be representative cases for three particular circumstances. (Quite apart from this it is also obvious from the text that Marx tried to employ 'easy numbers' for his calculations.)

Each schema (A, B, C) is presented for a sequence of periods, each representing the *production* in that period. At the end of each period capitalists in each department make plans ('arrangements') to accumulate capital for an expanded production in the next period (= *intended exchange arrangement*). Thus they aim to use more means of production (*c*) and labour-power (*v*) than they did in the running period. However, these plans may not match, for example, the means of production that have actually been produced in the

running period, thus there might be over or underproduction in comparison with these plans. Thus especially for the case of underproduction there may be bottlenecks preventing steady growth. At the end of each period then the confrontation of the realised *production* and the *intended exchange arrangement* gives rise to some *actual exchange arrangement* which is the basis for the next round of production.

Once we are in a situation that the *intended exchange arrangements* match the *actual arrangements* (and therefore also production), and no new changes in parameters occur, we are on a steady growth path. I will call a situation of a fixed set of parameters a 'regime'. Marx then analyses the transition from one regime to another by varying just one parameter, which is the rate of accumulation out of surplus-value for department I (α_1). Particularly he assumes that in department I half of surplus-value is being accumulated; the rate for the other departments stays, as intended, initially at the old rate (in the proportions of the existing compositions of capital in each department).²¹

In the way Marx makes his model work (at least for Scheme B, as we will see) there is only one period of *transition* from the old regime to the new one. Hence starting from a steady state regime in period 1, and changing the regime at the end of that period (intended), a new steady state will already be reached in period 3.

Thus schematically we have the following sequence:

- | | | |
|----|---------------|--|
| a. | period 1: | <i>production old regime – steady state</i> |
| b. | end period 1: | intended arrangement for old regime (would old regime have continued; matches a) |
| c. | end period 1: | intended arrangement for new regime (would have to match a) |
| d. | end period 1: | actual arrangement for new regime (= basis for production period 2) |
| e. | period 2: | <i>production new regime – transition</i> |
| f. | end period 2: | intended arrangement for new regime (would have to match e) |
| g. | end period 2: | actual arrangement for new regime (= basis for production period 3) |
| h. | period 3: | <i>production new regime – steady state</i> |

Although I interpret the starting situation (period 1) of each schema as one of proportionality for a specific steady state growth path,

Marx does not say this explicitly. Nor does he calculate the steady state parameters for the starting situation (as I will do below). (And as we see later on, his omission to do this may have put him on the wrong track for his conclusions from the model.)

The schemes of production (a, e, h) that I present below are identical to the ones that Marx gives. The other schemes (b, c, d, f, g) are presented by Marx in different and varying formats. The following notation is used:

g = rate of growth;
 u = surplus-value consumed by or via capitalists ('unproductive consumption');
 Δc = surplus-value accumulated in constant capital;
 Δv = surplus-value accumulated in variable capital.

Thus we have for surplus-value (s):

$$s = u + \Delta c + \Delta v$$

The actual rate of accumulation out of surplus value (α) is defined as:

$$\alpha = (\Delta c + \Delta v) : s$$

(α' = rate for the old regime; α = rate for the new regime); the *intended*, or planned, rate of accumulation is indicated by α^P .)

The parameters for Marx's scheme (old regime) are only explicit by his numbers. These are for the composition of capital:

$$c_1 : (c_1 + v_1) = \gamma_1 = 0.80 \quad (7)$$

$$c_2 : (c_2 + v_2) = \gamma_2 = 0.67 \quad (8)$$

For the rate of surplus-value:

$$s_1 : v_1 = \varepsilon = 1 \quad (9)$$

$$s_2 : v_2 = \varepsilon = 1 \quad (10)$$

For the rate of accumulation out of surplus value:

$$(\Delta c_1 + \Delta v_1) : s_1 = \alpha_1 = 0.45 \quad (11)$$

$$(\Delta c_2 + \Delta v_2) : s_2 = \alpha_2 = 0.27 \quad (12)$$

Where Δc and Δv have the same proportions as in (7) and (8):

$$\Delta c_1 : (\Delta c_1 + \Delta v_1) = \gamma_1 = 0.80 \quad (13)$$

$$\Delta c_2 : (\Delta c_2 + \Delta v_2) = \gamma_2 = 0.67 \quad (14)$$

Thus there is no technical change – at least no change in the value composition of capital (assumption b).

The remainder of (potential) surplus-value is the 'unproductive consumption' (u) by or via capitalists:

$$u_1 = (1 - \alpha_1)s_1 \quad (15)$$

$$u_2 = (1 - \alpha_2)s_2 \quad (16)$$

Thus 'hoarding' is set aside, that is all incomes are expended – at least in the aggregate. (In his text, however, Marx devotes considerable attention to hoarding, for example in the opening section of Chapter 21. Indeed he conceives of hoarding as crucial to the circulation and reproduction process – see Campbell in the present volume.)

Schema B: Expanded Reproduction

I reiterate that for the model below the ratios $c/c + v$ and s/v are given and constant. Thus once we have a starting value for e.g. c the numerical values for the other variables follow.

a. Period 1: Production old regime – steady state (VIII:586)

	c	+	v	+	s	=	x
I.	4000		1000		1000		6000
II.	1500		750		750		3000
	5500		1750		1750		9000

Since $(x-c)/c = (6000 - 5500)/5500 = 9.1\%$, this might be a schema of proportionality for a steady growth path of $g = 9.1\%$, if $\alpha_1' = 45.5\%$; $\alpha_2' = 27.3\%$; with $\Delta c_1/s_1 = 36.4\%$; $\Delta c_2/s_2 = 18.2\%$; and for both departments $\Delta v/s = 9.1\%$. (Marx does not calculate these ratio's). Equivalently: for such a steady state growth the ratio c_1/c_2 is fixed so that we can find $\Delta c = \Delta c_1 + \Delta c_2$. Next, given $c/(c + v)$ we also find $\Delta v_1 + \Delta v_2 = \Delta v$. From these values then we derive the necessary rates of accumulation $\alpha_1' = (\Delta c_1 + \Delta v_1)/s_1 = 45.5\%$ and $\alpha_2' = (\Delta c_2 + \Delta v_2)/s_2 = 27.3\%$.

Accordingly, had the old regime continued, we would have had the following intended exchange arrangement at the end of period 1 (Marx does not mention this).

b. End period 1: Intended exchange arrangement for old regime (would old regime have continued; matches schema a)

	<i>c</i>	<i>v</i>	<i>u</i>	Δv	Δc	<i>x</i>	
I.	4000	+ 1000	+ 545	+ 91	+ 364	= 6000	$(\alpha_1^{p'} = 45.5\%) [= \alpha_1']$
II.	1500	+ 750	+ 545	+ 68	+ 137	= 3000	$(\alpha_2^{p'} = 27.3\%) [= \alpha_2']$

$$5500 + 1750 + 1091^* + 159 + 500^* = 9000$$

* rounding off

Here u , Δv and Δc are the (intended) destination of the total of profits s . This schema *b* matches schema *a* so the intended exchange arrangement can also be the actual exchange arrangement ($x_1 = 6000 = c + \Delta c$ and $x_2 = 3000 = v + u + \Delta v$).

The part of the surplus product that is accumulated (Δv and Δc) seems to have a different status from the other components (c , v , u). Although Δv in particular is materially produced within the period under consideration, this part of (potential) surplus value is only realized within the next, when the extra labour power is hired (VIII:580-1). The realization of Δc can be conceived of in the same way (VIII:575). Thus the realization of these components of scale increase, in a way lags behind. Of course it applies to all components, and not just the last-mentioned, that their production and circulation – even within a period under consideration – involves complex intertemporal processes:

The continuous supply of labour-power on the part of the working class in department I, the transformation of one part of departments I's commodity capital back into the money form of variable capital, the replacement of a part of departments II's commodity capital by natural elements of constant capital IIc [that is, c_2] – these necessary preconditions all mutually require one another, but they are mediated by a very complicated process which involves three processes of circulation that proceed independently, even if they are intertwined with one another. The very complexity of the processes provides many occasions for it to take an abnormal course. (VIII:571)

Nevertheless the lagging behind of realization, Marx concludes, is not the vital point of difference between simple and expanded reproduction:

Just as the current year concludes ... with a commodity stock for the next, so it began with a commodity stock on the same side left over from the previous year. In analysing the annual reproduction – reduced to its most abstract expression – we must thus cancel out the stock on both sides ... and thus we have the total product of an average year as the object of our analysis. (VIII:581)

Now instead of carrying on at the old regime (schema b) at the end of period 1, department I decides to increase the rate of accumulation (department II intends to maintain the old rate). Thus Marx fixes $\alpha_1 = 50$ per cent and then analyses the transition numerically. For this he takes as starting-point the condition for simple reproduction ($v_1 + s_1 = c_2$), *gradually* developing this in the course of the examples into a condition for expanded reproduction.

It is self-evident that, on the assumption of accumulation, $I_{(v+s)}$ [that is, $v_1 + s_1$] is greater than IIc [that is, c_2], ... since (1) department I incorporates a part of its surplus product into its own capital and transforms ... [Δc_1] of this into constant capital, so that it cannot simultaneously exchange this ... for means of consumption; and (2) department I has to supply the material for the constant capital needed for accumulation within department II [Δc_2] out of its surplus product. (VIII:590).

Thus we have:

$$(v_1 + s_1) - \Delta c_1 = c_2 + \Delta c_2 \quad (I)$$

or

$$(v_1 + u_1) + \Delta v_1 = c_2 + \Delta c_2^{22} \quad (J)$$

In further presenting the numerical schemes, I will indicate for each schema whether it satisfies this condition. Marx does not do this. Again he derives generalizations *from* his numerical schemes. Thus they are not illustrations, but rather heuristic tools. So, for schema B-b we have the condition satisfied, as

$$1000 + 545 + 91 = 1500 + 136.$$

Following on from the change in the rate of accumulation ($\alpha_1 = 50$ per cent) we get, instead of this schema, the following intended arrangement at the end of period 1.

c. End of period 1: intended arrangement for new regime (would have to match a)

	<i>c</i>	<i>v</i>	<i>u</i>	Δv	Δc	<i>x</i>
I.	4000	+ 1000	+ 500	+ 100	+ 400	= 6000 (new regime $\alpha_1^p = 50\%$)
II.	1500	+ 750	+ 545	+ 68	+ 137	= 3000 (old regime: $\alpha_2^p = 27\%$)
	5500	+ 1750	+ 1045	+ 168	+ 537	= 9000

With these plans there is imbalance, the intended arrangement does not match production (a):

$$v_1 + u_1 + \Delta v_1 < c_2 + \Delta c_2 \quad (1600 < 1637)$$

This situation cannot be. There are fewer means of production on offer (6000) than there is intended demand for (5500 + 537). Conversely there are more means of consumption on offer (3000) than the intended demand (1750 + 1045 + 168). So what happens? In fact Marx lets the course of development be dictated by department I as they hold the means of production. (Note that it is assumed there are no price changes.) Thus department I fulfils its plans and department II is stuck with a shortage of means of production (37), plus an equivalent unsold stock of commodities for consumption. However it will then hire proportionally less extra labour power (from 68 to 50) giving rise to an extra stock of 18. (Thus we have the paradox for department II: eager to expand at overcapacity. If department II were to react to its overcapacity by decreasing demand for means of production from department I, we would have the same paradox for department I. In sum, a downward spiral would be plausible. Cf. previous subsection.) Marx shortcuts the transition, apparently because he wants to make the strongest possible case for 'balance', by assuming that department II capitalists absorb the stock of means of consumption (37 + 18) by consuming it unproductively, thus realizing their surplus value to that extent. (We see the 'widow's cruse' in effect.) Thus we get the following arrangement (the differences from the previous scheme c are in italics).

d. End of period 1: actual arrangement for new regime (= basis for production period 2)

	<i>c</i>	<i>v</i>	<i>u</i>	Δv	Δc	<i>x</i>
I.	4000	+ 1000	+ 500	+ 100	+ 400	= 6000 ($\alpha_1 = 50\%$)
II.	1500	+ 750	+ 600	+ 50	+ 100	= 3000 ($\alpha_2 = 20\%$)
	5500	+ 1750	+ 1100	+ 150	+ 500	= 9000

(where condition (J) is met: $1000 + 500 + 100 = 1500 + 100$).

This is the 'rational' reaction for department II to have, $\alpha_2 = 20\%$ being the result. In effect the plan for department I to increase the rate of accumulation results in a decreased rate for department II (and this, according to Marx, is the only way in which an (extra) expansion can come about: VIII:572). The schema for the next period then becomes the following.

e. Period 2: production new regime – transition (VIII: 587)

	<i>c</i>	<i>v</i>	<i>s</i>	<i>x</i>
I.	4400	+ 1100	+ 1100	= 6600 ($g_1 = 10\%$)
II.	1600	+ 800	+ 800	= 3200 ($g_2 = 6.7\%$)
	6000	+ 1900	+ 1900	= 9800

Consequently the rate of growth for department I has increased, to 10% and that for II has decreased to 6.7% (both initially at 9.1%). For the end of period 2, Marx then (implicitly) assumes that department II intends to reach the old rate of accumulation ($\alpha_2' = 27.3\%$; $\Delta c/s = 18.2\%$; that is, 146) and moreover to catch up with the former level of accumulation (in means of production 36). Thus the intended Δc_2 becomes $146 + 36 = 182$. Department I maintains $\alpha_1 = 50\%$.)

f. End of period 2: intended arrangement for new regime (would have to match e)

	<i>c</i>	<i>v</i>	<i>u</i>	Δv	Δc	<i>x</i>
I.	4400	+ 1100	+ 550	+ 110	+ 440	= 6600 ($\alpha_1^p = 50\%$)
II.	1600	+ 800	+ 527	+ 91	+ 182	= 3200 ($\alpha_2^p = 34\%$)
	6000	+ 1900	+ 1077	+ 201	+ 622	= 9800

Again $v_1 + u_1 + \Delta v_1 < c_2 + \Delta c_2$ ($1760 < 1782$), again department I can dictate the course and again department II absorbs the potential overproduction (22 plus 11, since labour-power hired decreases proportionally). Accordingly we have for the actual exchange arrangement the following (differences from schema f in italics):

g End of period 2: actual arrangement for new regime (= basis for production period 3)

	<i>c</i>	<i>v</i>	<i>u</i>	Δv	Δc	<i>x</i>
I.	4400	+ 1100	+ 550	+ 110	+ 440	= 6600 ($\alpha_1 = 50\%$)
II.	1600	+ 800	+ 560	+ 80	+ 160	= 3200 ($\alpha_2 = 30\%$)
	<hr/>					
	6000	+ 1900	+ 1110	+ 190	+ 600	= 9800

(where condition (J) is met: $1100 + 550 + 110 = 1600 + 160$).

Department II has recovered part of the former level of accumulation, but not all. As a result the schema for the next period becomes the following.)

h. Period 3: production new regime (new steady state) (VIII:588)

	<i>c</i>	<i>v</i>	<i>s</i>	<i>x</i>	
I.	4840	+ 1210	+ 1210	= 7260	($g_1 = 10\%$)
II.	1760	+ 880	+ 880	= 3520	($g_2 = 10\%$)
	<hr/>				
	6600	+ 2090	+ 2090	= 10780	

With this schema we are at the new steady state growth path. From now on all entries can increase at a growth rate of 10% ($g = 10\%$ for both departments). Department II cannot catch up with accumulation any further, so α_2 stays at 30%. (Though for this example it will have caught up in absolute quantity after two more periods, since the growth rate has risen.) Marx calculates the schema for three more periods (VIII:589). So much for Schema B.²³

As has been said above, Marx's schemes are not illustrations; they are tools for arriving at a generalization. He (implicitly) applies the formula $v_1 + u_1 + \Delta v_1 = c_2 + \Delta c_2$ in all his examples, and explicitly derives it from them (590 and 593). Nevertheless, at the very end of

the text (595–7), when Marx is preparing to draw general conclusions from his schemes, he once again falls back on the modified simple reproduction condition $v_1 + u_1 = c_2$. Why? The easy answer is to refer to the unfinished shape of the text: it was perhaps meant to be followed by a piece indicating the relevant difference between the conditions for simple and expanded reproduction.

However there is another explanation, which directly relates to Marx's examples. Note that his generalizations (595–7) follow just after setting out Schema C (590–95). The problem is not so much that he takes the formula $v_1 + u_1 = c_2$ for a *starting-point* of the analysis. Indeed, with Schema C, Marx takes an example for which this formula does *not* apply in the initial situation – as it did for Schemata B and A.²⁴ The point is that Schema C is an unlucky example (though, since Marx neglects to calculate the relevant *initial* properties of his schemes – especially the rates of accumulation and growth – he seems unaware of this). In fact, with his Schema C, he describes the transition to a *decreasing* rate of accumulation and growth, whilst it is apparently meant to describe (further) expansion, taking off with a rate of accumulation of 50% for department I as in all his examples.

Schema C: Expanded Reproduction; Production, Period 1, Initial Situation

	<i>c</i>	<i>v</i>	<i>s</i>	<i>x</i>
I.	5000	+ 1000	+ 1000	= 7000
II.	1430	+ 286*	+ 286*	= 2002
	<hr/>			
	6430	+ 1286	+ 1286	= 9002

*Marx has 285 here.

This might be a schema of proportionality for a steady growth path of $g = 8.9\%$, if for both departments $\Delta c/s = 44.3\%$; $\Delta v/s = 8.9\%$; hence $\alpha' = 53.2\%$ (Marx does not calculate these ratios). The new rate of accumulation *decreases* to $\alpha_1 = 50\%$.

For our purposes we do not need to go through this example any further (in the end, the new growth rate will slow down to 8.3%). Indeed, for the new situation, $v_1 + u_1 < c_2$ (that is, $1500 < 1430$). What is relevant, however, and whence we have potential *overproduction* in department I, is that $v_1 + u_1 + \Delta v_1 > c_2 + \Delta c_2$ (that is, $1000 + 500 + 83 > 1430 + 127$, thus $1583 > 1557$).

A Formal Recapitulation of the Model for Expanded Reproduction: Conclusions

Marx's main tool, as has been indicated, is numerical schemes with some elementary formalization. Thus, although we do not find the formalization given below in the text, this *type* of formalization may be said to be in there spirit.

Apart from the properties of the model for expanded reproduction described below, we have the following assumptions, as discussed earlier on:

- prices do not change (or prices are equal to values) (assumption **b**);
- there is no fixed capital (or it is used up within the production period) (assumption **d**);
- there is no foreign trade (assumption **g**);
- monetary accommodation is sufficient (assumption **i**);
- sufficient labour power is available (assumption **j**).

(Assumptions and equations marked* are identical to the ones for simple reproduction.)

We have the system:

$$c_1 + v_1 + s_1 = x_1 \quad (1)^*$$

$$c_2 + v_2 + s_2 = x_2 \quad (2)^*$$

$$c + v + s = x \quad (3)^*$$

There are three definitions for aggregation:

$$c_1 + c_2 = c \quad (4)^*$$

$$v_1 + v_2 = v \quad (5)^*$$

$$s_1 + s_2 = s \quad (6)^*$$

We have four equations fixating the dynamics of the structure of production: in each department, one for the value composition of capital ($c/c + v$) and one for the rate of surplus value (s/v):

$$c_1 : (c_1 + v_1) = \gamma_1 \quad (7)^*$$

$$c_2 : (c_2 + v_2) = \gamma_2 \quad (8)^*$$

$$s_1 : v_1 = \varepsilon \quad (9)^*$$

$$s_2 : v_2 = \varepsilon \quad (10)^*$$

(These 10 equations, together with the condition $c_2 = v_1 + s_1$, comprise the model for simple reproduction analysed in the second section). The ratios γ and ε may in principle be estimated; here, however, they are fixed, for analytical purposes.

The crucial element is α , the rate of accumulation out of surplus value (commented upon below), which is defined as follows:²⁵

$$(\Delta c_1 + \Delta v_1) : s_1 = \alpha_1 \quad (11)$$

$$(\Delta c_2 + \Delta v_2) : s_2 = \alpha_2 \quad (12)$$

Where Δc and Δv have the same proportions as in (7) and (8):

$$\Delta c_1 : (\Delta c_1 + \Delta v_1) = \gamma_1 \quad (13)$$

$$\Delta c_2 : (\Delta c_2 + \Delta v_2) = \gamma_2 \quad (14)$$

Thus there is no technical change – at least no change in the value composition of capital (assumption **b2**).

The remainder of (potential) surplus value is the 'unproductive consumption' (u) by or via capitalists:

$$u_1 = (1 - \alpha_1)s_1 \quad (15)$$

$$u_2 = (1 - \alpha_2)s_2 \quad (16)$$

Thus 'hoarding' is abstracted from.

The rates of accumulation, α_1 and α_2 , may in principle be estimated (elsewhere Marx further theorizes α as a necessary force in capitalism). Here, however, α_1 is fixed, for analytical purposes; α_2 , on the other hand, is taken for a semi-variable. Its starting intended value is that of the previous period (see below), but within the

period it acts as a *result*. Unproductive consumption u_2 varies accordingly. In this way, Marx's account short-cuts adaptation after any changes in the system ($\alpha, \gamma, \varepsilon$); it also precludes downward spiral effects: effective overproduction is ruled out. Any potential overproduction (given a rate of accumulation α_1) is absorbed via the adaptation in α_2 : either by unproductive consumption (for means of consumption) or by accumulation (for means of production).²⁶ Finally expanded reproduction and proportionality is defined by the condition:²⁷

$$c_2 + \Delta c_2 = v_1 + u_1 + \Delta v_1 \quad (17)$$

which centres the analysis on the interconnecting exchanges between the two departments.

So we have 17 equations and 19 unknowns, leaving two degrees of freedom. Similarly as for simple reproduction it is within the logic of Marx's reasoning to start from a given accumulation of capital in each department, from which follow numerical values for the other variables (given some initial value for α_2 , that is, intended accumulation in department II). However, as α_2 is a semi-variable (its intended value may not be equal to its realized value, or its 'ex-ante' value may not be equal to its 'ex-post' value), condition (17) may be violated.

Thus, in the face of the pattern for α, γ and ε , the starting values c_1 and c_2 , or $(c_1 + v_1)$ and $(c_2 + v_2)$, determine the course of things, notably smooth adaptation or *potential* overproduction in department I or department II, with their potential downward spiral effects. Each time condition (17) may turn out to be an inequality 'at the end' of the period, the resulting accumulation of capital ('ex-post') thus determining the course for the next period. The following three cases can be distinguished:²⁸

(1) potential overproduction in department II (cf. Schemata A and B), if:

$$v_1 + u_1 + \Delta v_1 < c_2 + \Delta c_2 \quad (\text{Marx has: } v_1 + u_1 = c_2)$$

(2) smooth adaptation, if:

$$v_1 + u_1 + \Delta v_1 = c_2 + \Delta c_2$$

(3) potential overproduction in department I (cf. Schema C), if:

$$v_1 + u_1 + \Delta v_1 > c_2 + \Delta c_2 \quad (\text{Marx has: } v_1 + u_1 > c_2)$$

In effect the process of adaptation runs as follows. Ensuing upon a (positive) change in the rate of accumulation from a previous α' to a new intended α (requiring a relative increase of department I), (new) proportionality is established via a readaptation of the rates of accumulation α_1 and α_2 . In Marx's model the period of transition is short-cut by a pre-emptive readaptation for especially α_2 , thus absorbing any overproduction and evading downward spirals. In other words, upon the change of α_1' to α_1 , the Δc_1 (that is, $\alpha_1 \gamma_1 s_1$) is a constant fraction of c_1 , whence we have a constant rate of growth for department I. However $v_1 + u_1 + \Delta v_1$ (that is, $v_1 + (1 - \alpha_1) s_1 + \alpha_1 (1 - \gamma_1) s_1$) is also a constant fraction of c_1 ; at the same time it determines $c_2 + \Delta c_2$ (that is, $c_2 + \alpha_2 + \alpha_2 (\gamma_2 s_2)$): the extra production of means of production in department I that it does not use up itself – department II cannot have more, only less; however, given the α_2 planned, it absorbs what is available. Therefore department II becomes chained to the growth rate of department I. (In this process of adaptation, department I thus dictates the course. The ownership of means of production for producing means of production is thought of as crucial: department II cannot expand unless I does.)

More so than the chapter on simple reproduction, the chapter on expanded reproduction reveals the defects of an unfinished draft and an unfinished analysis. Guiding Marx's generalizations is an adjustment of the condition for simple reproduction. However the adjustment is not carried through to its full extent; it is nevertheless effected in the numerical schemes. Even if unfinished, the power of the model is revealed very well. Heuristically it also leaves plenty of room for further analysis of dynamic processes. At the core of the model are the same fundamental macroeconomic abstractions, developed into a two-sector approach, as those of simple reproduction (equations (1) to (3)). Generally Marx succeeds in showing convincingly that, even abstracting from all sorts of further complications, proportionality between the two sectors – or generally, steady-state growth – is most unlikely. In the process of transition from one growth path to another, we saw in effect, as an interesting digression, the 'widow's cruse' mechanism: 'capitalists earn what they spend, and workers spend what they earn'.

MARX'S METHOD FOR THE THEORY OF REPRODUCTION AND CIRCULATION OF THE SOCIAL CAPITAL

With the case material of the previous sections we are now prepared to return to the initial questions in the introduction. What is the method adopted by Marx in the part of *Capital*, II, on reproduction and circulation of the social capital? Is the method akin to a modelling approach as we find it in modern orthodox economics? Does the approach fit into a systematic-dialectical methodology? We can be relatively brief in answering the first question. The second will take more time.

Precursor to the Modern Conventional Economic Modelling

Marx's text abounds with elements demonstrating similarities to modern economic modelling approaches. We find a set of explicit assumptions delineating the problematic in its – purposefully – core elements. We are then left with a set of variables and parameters ready for analysing the properties of their interconnection. Generalizations concerning the problematic can be drawn from this analysis. Although the main tool for the analysis is a numerical schema, we also find an elementary formalization.²⁹ The approach also contains a heuristic: the findings of an earlier model – simple reproduction – can be carried over to be adjusted for a model dealing with different or more complex phenomena – expanded reproduction.

If we add to this that a dialectics, at least a dialectical jargon, is almost absent from this text, at least apparently so (see below), it is no wonder that of all of Marx's economics this part especially has much influenced orthodox economics. Of course that is not just a matter of method. It is also the case that the content of the approach, the construction of a particular macroeconomics, was seen to be fruitful, especially for the theory of the business cycle and of economic growth.

So is this a decisive case for defending the thesis that Marx adopts a method of inquiry in line with formal logic, that is, not different *in principle* from modern orthodox economics approaches? The textual evidence certainly favours this view (this may of course be different for other cases).³⁰

A next question is whether there are any important differences distinguishing Marx's modelling approach from the conventional.

In this respect we may emphasize that Marx, as we have seen, adopts as a methodological requirement a particular abstraction procedure: the particular *designation of his representations* at an early phase of the exposition is intended to *anticipate later expositions*, earlier abstractions remain in force at later stages, albeit in modified form. We have seen this prominently in the carrying over of the condition for simple reproduction to expanded reproduction. This is in fact the case for many of the representations in *Capital*, II: they are still applicable, in modified form, when their underlying simplifying assumptions are dropped (for example, V: 162).

From the perspective of a systematic-dialectical methodology (see below) this requirement is no surprise. Most of the reviewers of Marx that question his systematic *dialectics* have at the same time no doubt that he adopts a systematic in his work. Even if dialectics and its particular way of logical proceeding are suppressed, the methodological requirement for abstractions (in anticipation of later exposition) enforces a *systematic* for presentation, as well as an order for the process of model building. In this case, as with a systematic-dialectics, the process of discovery cannot be the same as the process of presentation (an issue much stressed by Marx; see Marx, 1867:102).

First and Second Thoughts on Systematic-Dialectics

Let us now consider arguments stemming from this case for the view that Marx adopts a systematic-dialectical method. Two relevant issues will be discussed: first the general point of the (in)compatibility of 'model building' within a systematic-dialectical approach; second the specific point of the notebook status of the text.

For the *first* point I start with a contentious thesis: even if Marx's method were systematic-dialectic, it would not prevent the conceiving of *Capital* as a model of the capitalist economy.³¹ In this view, the term 'model' is itself neutral as to a particular logic and method of constructing models. However, since the capitalist system entails contradictory entities, relations and processes, a dialectical logic is most appropriate, as it is able to grasp contradictions. Hegel's logic, in this view, is the proper logic of and for capitalism.³² Several layers (parts) of *Capital* can next usefully be seen as 'sub-models', the one presented in this paper being a case of such a sub-model. In dialectical jargon it would be called a *moment*;

that is, 'an element considered in itself, which can be conceptually isolated, and analysed as such, but which can have no isolated existence' (Reuten & Williams, 1989:22). Indeed the great advantage of a systematic-dialectical method is that it is called upon to connect its 'sub-models' within the systematic whole.³³ If my initial thesis of conceiving the whole of *Capital* as a model is for some unacceptable, we may restrict the matter to conceiving particular moments as dialectical models, our case being a possible example.

This view, however, if useful at all, seems not particularly illuminating for the case at hand: a systematic-dialectical logic seems largely absent from it. Undoubtedly that is the first impression one gets from the text, but rather than leaving the point at that, let us list what one might expect for a systematic-dialectical text.

(1) An abstract-general starting-point. Of course for the case at hand this cannot be an all-embracing starting-point, as we are already under way (Part Three of *Capital*, II). However the case as a 'moment' may have its own relatively abstract-general starting-point. This can be well defended by the macroeconomic abstractions that Marx starts with.

(2) The positing of contradictions. Absent (but see below).

(3) The transcendence of contradiction. Consequently absent.

(4) Along with 2-3, a gradual conceptual progress, in layers of abstraction, towards concretization, distinguishing necessary from contingent moments. Although apparently not *along with* 2-3, one can show that aspects of this are happening in the text: notably the very move from simple to expanded reproduction (even if we were not to agree with Marx that the former is in some way essential - he *does* argue for it); and along with it there is obviously conceptual progress on the notions of reproduction and circulation, including money (even if this has not been emphasized in the present paper); indeed, after Part Three, we have a better grasp of Part One. A possible distinction between necessary and contingent moments, however, is awkward in the text, especially if we consider 'balance' and the 'normal imbalance' or even crisis. The text is unclear on this point. On the one hand, Marx convincingly shows the 'knife edge' of balance, whereas on the other at least a degree of balance must prevail for the system to exist at all (necessity). Of course this would have been an obvious point for grasping dialectically. So perhaps we can grant this point, though, to say the least, with a dialectics suppressed.

(5) Along with 2-3, showing the systematic interconnection of what is theorized, within the whole of the object of inquiry. Again,

although apparently not *along with* 2-3, the interconnection is shown: first that with the earlier parts of *Capital*, II, as well as with *Capital*, I (see p. 189 on the introductory chapter), secondly within the theory at hand (Part III) the interconnection of the elements theorized ranks high.

(6) Points 1-5 together determine the systematic for the proceeding. Generally transcendence of contradiction and the new problems created by it show the insufficiency of the previous theorization, and hence the way to proceed. Given the absence of contradiction and transcendence, at least explicitly, this kind of systematic seems absent from the text (even if there is the systematic of 'anticipative abstraction' referred to above).

Thus, on second thoughts, considering the six points together, perhaps the case is not that clear-cut methodologically? It is even less so if we bear in mind the emphasis in the text on the twofold character of the entities (material, value) (pp. 191 and 199-200 above). This, in retrospect, seems very much to guide Marx's approach in this part, at least as far as the positing of the problems is concerned (in my view, the citations given on pp. 199-200 above, are the most thought-provoking of the whole text). The twofold character seems after all central to Marx's schemes (which is no surprise in the face of the rest of *Capital*, especially Book I, Chapter 1).³⁴ Unfortunately, and this is perhaps misleading, the theme is not carried through systematically - at least not in a clear way. Manifestly so, not only do the major entities discussed (c_2 , v_1 , and so on) have a twofold character (value, material), but there is also a 'redoubling' in that they stand for two material guises, and their two value forms (for example, c_2 is means of production as well as means of consumption - emphasized in the guises it goes through in the capital circuit). This might have been expressed in a different notation, perhaps akin to the circuit models of Part One.

It must be emphasized that none of this affects the fact that within a dialectical presentation one can build in analytical 'moments'. *Within* its restrictedness there is nothing wrong with formal logic or a formal model. They are indispensable tools in research practice; formal logic and formal modelling can have a proper place within systematic-dialectics (cf. Reuten & Williams, 1989:27). Rather it is the other way around that is difficult.

So where does this leave us? From point, 1-6 above we saw that, dialectically, a main defect of the text is that contradictions and their transcendences are not made explicit, and do not explicitly

lead the systematic conceptually. However, at the same time, there is the emphasis in the text on the twofold character of entities, which is the major contradiction of the system. In the text it is perhaps too often expressed abstractly, rather than at the level of concreteness that we have already attained. Nevertheless this is an obvious anchor for a systematic-dialectical presentation. All this, however, does not lead to the conclusion that this is a systematic-dialectical text. It is not. However there are arguments for conceiving it as *compatible* with a systematic-dialectical method.

This takes us to the *second* point, which can be dealt with briefly: the notebook status of Book II of *Capital*. It is rather speculative to argue about something that *might* have been if ... Nevertheless, to answer the leading question of this paper, this notebook status must be taken into account. All the more so since it is not only that, as we have just concluded, the Part Three text we have considered is compatible with a systematic-dialectical approach, but we also have the textual evidence of *Capital*, I and of Part One of *Capital*, II (see the paper by Arthur in the present volume) which are written in a dialectical vein, even if perhaps not perfectly from several points of view. I have no doubt whatsoever (partly because of personal experience) that a dialectical presentation is often preceded by an *analytical* stage of inquiry: even more so for the study of new problems. The dialectical hard work lies in the way of *systematizing* the material one has at hand. Indeed empirical inquiry and analytical inquiry are the building stages and material for a systematic-dialectic. From this we cannot answer the question whether Marx intended a systematic-dialectical presentation, let alone that of how the *kind of analysis* we find in the Book II manuscripts might have been incorporated in a dialectical presentation. It is rather that this notebook status strengthens the conclusion that the text we have considered is compatible with a systematic-dialectics methodology.³⁵

Conclusions

This case is fascinating. We see the construction of a macroeconomics with a powerful two-department division. We see the core problems related to the fact that a capitalist economy must materially reproduce itself for survival (generic) but cannot, inherently, do this without being a monetary economy at the same time (determinate). The two processes may not coincide. Consequently we see the 'knife-edge' of balanced growth together with the potentialities

for economic crisis, and thus the important groundwork for later theory on business cycles.

Methodologically the case is just as intriguing. It is a wonderful work from the formal-logical conventional modelling point of view. How, then, may the case fit other apparently systematic-dialectical parts of *Capital*? As I have indicated, the text is *not* systematic-dialectical, although it contains elements for developing such an approach. While the text is *compatible* with both methodological positions, the better arguments are on the conventional modelling side.

Acknowledgements

Drafts of this paper were presented at the International Symposium on Marxian Theory (South Hadley, 1995), the European Conference of the History of Economics (Lisbon, 1996) and the Workshop Models as Mediators in the Practice of Economic Science (Amsterdam, 1996). I thank Christopher J. Arthur, Martha Campbell, Mino Carchedi, Paul Mattick Jr, Fred Moseley, Patrick Murray and Tony Smith as well as Francisco Louca and Margaret Morrison for their comments. Finally I thank my colleagues in the Amsterdam University Research Group into the History and Philosophy of Economics for their discussions; this paper has benefited particularly from comments by Marcel Boumans and Mary Morgan.

Notes

1. Strictly the material for such interpretation comprises the three books of *Capital* (1867, 1885, 1894) and perhaps also the material for the planned fourth book, *The Theories of Surplus-Value* (1904/10). Various other works, however, may be relevant.
2. This position is most vehemently argued for by Smith (1990, 1993). Whereas he considers his work 'an interpretation', I see it as an original reconstruction.
3. Most of these authors at the same time emphasize the value-form theoretical elements in Marx: for example, Backhaus (1969, 1992); Eldred (1984); Eldred *et al.* (1982/85); Reuten & Williams (1989); Reuten (1993, 1995); Williams (1998). Arthur (1993) is a most important development.
4. Thus according to Engels's information, Notebook VIII was written in 1878. However the text contains references to two 1879 works, one of which was *The Nation* of October 1879 (p. 591).
5. It is more extensively dealt with in *Theories of Surplus-Value*, Part One (Marx 1904/10, pp. 308-44; 378-80) where we also find a representation of the *Tableau*. On Marx's appreciation of and inspiration from Quesnay, see Gehrke & Kurz (1995, esp. pp. 62-9 and 80-84).

6. See further Moseley in the present volume.
7. Successive abstractions/assumptions are indicated in bold letters throughout this paper.
8. The same assumption was already posited at the opening of Ch. 1 (II:109) and reasserted in Ch. 2 (V:153). Next the assumption is relaxed in the same chapter (V:162) and further discussed again in Ch. 4 (V:185–9).
9. Incidentally this seems relevant for some interpretations of the Book III value to price transformation.
10. See Murray (1988, Ch. 10) for the difference between generic and determinate abstraction.
11. If we had capital fixed for more than one production period, this would not affect the problem for the value calculations (as long as we refrain from investigating the rate of profit: cf. VIII:597); that is in case of simple reproduction and its schema. For expanded reproduction this would be different as part of surplus value would get accumulated into fixed capital – more than the expanded flow of constant capital. (Cf. Robinson, 1951, p. 16, discussing Luxemburg's schemes.)
12. Here the fourth column is total gross production (including intermediate production) and the third row is total gross expenditure (including intermediate expenditure). So for the shape of a modern Leontief input–output table (derived from the schema), one has to rotate the schema 90 degrees to the west, and move the initial third row to the outer east, with c_1 (4000) and c_2 (2000) remaining in the first quadrant of intermediate expenditure and production.
13. Or three times the year's labour of the community ... 'Tis with the proportions, rather than with the absolute accurate amount of these estimated sums, we are concerned' (William Thompson, *An Inquiry into the Principles of the Distribution of Wealth*, London 1824/1850, quoted by Marx, 1884: 398).
14. Although Marx uses his notation throughout the text, for example for the derivation of conditions of reproduction (see below), a full schema, like this one, is always cast in numerical terms.
15. In his notation: $\text{II}_{(c+v+s)} = \text{II}_{(v+s)} + \text{I}_{(v+s)}$.
16. Or in Keynesian symbols: $C = Y$. The question is whether the circuit aspect indicated in the quotation above can be grasped from the Keynesian formula. In the post-Keynes economics there is an ambiguity (at least) as to the meaning of Y . It is considered both 'real' net income as deflated by an index number (value-added in terms of a commodity index) and output (product) as deflated by an index number. This is not meant to be a 'contradiction' – in the post-Keynes economics these are both conceived of as commodity bundles, in each case looked upon from a different aspect. Note that to Keynes himself these indexes would have been a horror: he called them 'conundrums'.
17. In general, however, there is quite a conceptual distance between Quesnay's *Tableau* and Marx's schemes. See also Marx's version of the *Tableau* (1904/10: 308, 378).
18. Thus Kaldor is wrong when he writes that 'this model' [that is, "his" model] 'is the precise opposite of the Ricardian (or Marxian) one' (1955/6, p. 85). See also the end of his footnote 1.

19. These monetary aspects are dealt with in detail by Campbell in the present volume.
20. In the text these are mentioned as follows: Schema A = 'schema a' (pp. 581–5); Schema B = 'first example' (pp. 586–9); Schema C = 'second example' (pp. 589–95).
21. See pages 586 and 590. Note that for the preliminary Schema A, Marx assumes an intended rate of accumulation of 50% for *both* departments (p. 582). As we will see, that has no effect on the actual rate of accumulation for department II.
22. This also derives from the balance equation:

$$x_1 = (c_1 + \Delta c_1) + (c_1 + \Delta c_2)$$
or from:

$$x_2 = (v_1 + u_1 + \Delta v_1) + (v_2 + u_2 + \Delta v_2)$$
23. In the literature the object of Marx's reproduction scheme is variously appreciated, especially the status of its 'accidental balance'. In my view Marx sets out the best possible case for capitalism (a case that lives up to the system's self-image), showing how unlikely it would be for its conditions to be met. As will be shown in more detail below, the difference between the 'intended' or 'planned' and the realised rate of accumulation is central to Marx's account. (In later theories of the business cycle a similar difference is that between 'ex ante' and 'ex post' variables.) Closest to my own account is that of Desai (see below). A review of that literature is beyond the scope of this chapter therefore I restrict myself to a few comments on three well known scholars in the field.

I cannot agree with Foley's (1986, p. 85) interpretation of what Marx is doing: it is not the case that Marx's *initial* schemes (period 1) were meant to represent reproduction for the *new* rate of accumulation (which they clearly cannot, as Marx indicates). Foley suggests that Marx merely wanted to find an adequate schema for 'period 1' and that the 'discrepancy' between the initial schema and the rate of accumulation 'annoyed Marx', and that he therefore 'devoted several pages of his notes to the attempt to find a schema that would exhibit proportional expanded reproduction'. No, Marx analyses the *process of change* following on from a change in the rate of accumulation. Koshimura (1975, pp. 17–19) equally neglects the transitional process.

Morishima (1973) hardly analyses the properties of Marx's schemes of expanded reproduction or the transitional process (pp. 117–20), concerned as he is to 'replace' Marx's 'special investment function' (department I's rate of accumulation determining the course) by what he considers the 'more reasonable' case for which capitalists of departments I and II 'have the same propensity to save' (p. 122). Whilst this precludes him from getting to grips with the logic of the schemes themselves, his exercise is of interest. In Morishima's reconstruction the model is one of unstable growth (with, depending on the compositions of capital, either explosive oscillations or monotonic divergence from the balanced growth path – p. 125). The account of Harris (1972) is along similar lines.

Desai (1979, pp. 147–53, 161–71), although he has a somewhat different view of the periodization from that outlined above, appreci-

ates the 'ex-ante' versus 'ex-post' character of Marx's schemes. His account de-emphasizes the level of abstraction at which the schemes operate and, consequently, we differ about the interpretation of the aim of the schemes. Desai also thinks that the dimensions of the schemes are 'labour-values' (so does Mandel, 1978, pp. 38) and that the schemes fail 'to pose the problem of expanded reproduction in the price domain'. On the first point he is wrong (at least, Marx says otherwise, for example on p. 473) and on the second he neglects Marx's view about its irrelevance for the problem at hand (see my comment on assumption f). Finally, and relatedly, he neglects Marx's emphasis on the twofold character of the entities he deals with. Therefore I cannot agree that Marx's problematic is 'entirely confined to the circuit of commodity capital'. (I do not want to disclaim the Marxian theories of these three authors in this field; however I am concerned here strictly with Marx's reproduction theory.)

24. Schema A has the same relevant properties as Schema B, except that it is somewhat simpler as the compositions of capital are equal. Its initial make-up is:

Schema A: expanded reproduction; production, period 1, initial regime

	<i>c</i>	+	<i>v</i>	+	<i>s</i>	=	<i>x</i>
I.	4000		1000		1000		6000
II.	1500		375*		375*		2250
	5500		1375		1375		8250

*Marx has 376, apparently to facilitate the calculations.

This might be a scheme of proportionality for a steady growth path of $g = 9.1\%$ ($6000 - 5500/5500$), if for both departments $\Delta c/s = 36.4\%$; $\Delta v/s = 9.1\%$; hence $\alpha' = 45.5\%$ (Marx does not mention this). The new rate of accumulation increases to $\alpha_1 = 50\%$. Note that for the new regime (end period 1) it just happens to be the case that $v_1 + u_1 = c_2$. But the same applied to Scheme B! Apparently Marx is then led to take this formula (much akin to the simple reproduction condition (F) as the starting-point for his analysis.

25. Marx uses the term this way (VIII: 595); α is of course linked to capital accumulated ($c + v$, abstracting from fixed capital) via equations (7) to (10).
26. The latter happens in Schema C. Whereas Marx lets department I dictate the course of things (α_1 fixed) – and whilst that may make sense within his line of thought – either or both of α_1 and α_2 might in principle be taken as semi-variables (with 'ex-ante' and 'ex-post' divergences).
27. It can be derived directly from either $x_1 = c + \Delta c$ or $x_2 = v + u + \Delta v$.
28. As I have indicated on p. 209, Marx sets out the interconnection in his numerical schemes; not quite, however, as generalizations. Nevertheless the latter are not difficult to derive from his schemes.
29. Numerical analysis in this field of economics was usual practice until the work of Kalecki (this is set out by Boumans, 1997).

30. Moreover this conclusion is not inconsistent with the view of Marx adopting a 'historical materialist' method of inquiry or a 'historical dialectics'. Historical materialism or historical dialectics might affect (1) the frame within which one places *Capital*, that is, this study of capitalism; (2) the particular questions addressed by Marx; (3) the way of attacking those questions (see, for example, the discussion about a given accumulation of capital and the prevailing ownership of means of production within the context of the degree of freedom in the models of simple and expanded reproduction, as well as the priority given to department I within the dynamics of the latter model on pp. 216–7 above); (4) his ontological and epistemological views; and (5) the categories he adopts (historically specific). All these, however, need not affect his method of reasoning, verification and presentation.
31. Many Marxian scholars, though certainly not all, would hesitate to adopt the term 'model' for Marx's or perhaps their own work, *even if* they do not consider Marx or themselves as working in a systematic–dialectical tradition. This is because they seem to identify economic modelling with some of the modern 'analytical' exaggerations of starting by just 'any' set of assumptions and playing on it with a mathematical tool kit.
32. See Arthur (1993). This reference to Arthur is not meant to imply that he shares this view of models. Of course these issues can be taken separately. One can hold that Hegelian dialectics is the proper logic for capitalism, while denying that it is compatible with 'modelling'.
33. Note that economists, and perhaps scientists generally, trained in mathematical and formal logical traditions of thought, may find it difficult that dialectical sub-models from different layers (levels of abstraction) are *conceptually different* from each other. To put it in orthodox language: if chapter 1 of a systematic–dialectical work, seemingly, defines money, the term 'money' may have a *different* meaning (richer, less abstract) some chapters later on. Thus in fact 'definitions' are not fixed in a dialectical method.
34. Even if that chapter in particular is a major achievement, one may have some dialectical complaints to make about it (see Reuten, 1993).
35. Note that systematic dialectics may not be inconsistent with historical dialectics in the same five ways as indicated in note 30. However, in this case, these five issues *cannot* be isolated from the specific systematic–dialectical reasoning, verification and presentation (starting-point, contradiction, conceptual development, levels of abstraction, and so on).

References

Note: All years in brackets are the original dates of publication as referred to in the text; editions quoted from may differ and are provided where appropriate.

Arthur, Christopher J. (1993) 'Hegel's *Logic* and Marx's *Capital*', in F. Moseley (ed.) pp. 63–87.

- Backhaus, Hans-Georg (1969) 'Zur Dialektik der Wertform', in A. Schmidt (ed.) *Beiträge zur Marxistischen Erkenntnistheorie*, Frankfurt a.M.; Engl. trans. M. Eldred and M. Roth, 'On the Dialectics of the Value-form', *Thesis Eleven*, 1, 1980: 99–120.
- Backhaus, Hans-Georg (1992) 'Between philosophy and science: Marxian social economy as critical theory', in W. Bonefeld, R. Gunn & K. Psychopedis (eds), *Open Marxism, Volume I, Dialectics and History*, Pluto Press, London/Boulder, pp. 54–92.
- Boumans, Marcel (1997) 'Built-in justification', *Amsterdam Working Papers in the History and Methodology of Economics*, University of Amsterdam, Faculty of Economics.
- Desai, Meghnad (1979) *Marxian Economics*, Basil Blackwell Oxford.
- Eldred, Michael (1984) *Critique of Competitive Freedom and the Bourgeois-democratic state: outline of a form-analytic extension of Marx's uncompleted system*, Kurasje, Copenhagen.
- Eldred, Michael, Marnie Hanlon, Lucia Kleiber & Mike Roth (1982/85, 1984) Reconstructing Value-Form Analysis 1–4, *Thesis Eleven*, no. 4, 1982; no. 7, 1983; no. 9, 1984; no. 11, 1985; modified as, 'A Value-form analytic reconstruction of "Capital"', Appendix to M. Eldred, 1984: 350–487.
- Foley, Duncan K. (1986) *Understanding Capital; Marx's Economic Theory*, Harvard University Press, Cambridge, Mass./London.
- Gehrke, Christian & Heinz D. Kurz (1995) 'Karl Marx on physiocracy', *The European Journal of the History of Economic Thought* vol. 2, No. 1:53–90.
- Harris, Donald J. (1972) 'On Marx's scheme of reproduction and accumulation', *Journal of Political Economy*, 80/3-I, pp. 503–22.
- Hegel, G.W.F. (1812, 1831) *Wissenschaft der Logik*; Engl. trans of the 1923, Lasson edn A.V. Miller, *Hegel's Science of Logic*, Humanities Press, Atlantic Highlands, NJ, 1989.
- Hegel, G.W.F. (1817, 1830) *Enzyklopädie der Philosophischen Wissenschaften in Grundrisse I, Die Wissenschaft der Logik*, Engl. trans of the 3rd edn, T.F. Geraets, W.A. Suchting and H.S. Harris, *The Encyclopaedia Logic*, Hackett Publishing Company, Indianapolis/Cambridge, 1991.
- Horowitz, David (ed.) (1968) *Marx and Modern Economics*, Monthly Review Press, New York/ London.
- Kaldor, N. (1955/6) 'Alternative theories of distribution', *Review of Economic Studies*, vol. 23: 94–100; reprinted in A. Sen (ed.), *Growth Economics*, Penguin Books Harmondsworth, 1970, pp. 81–91.
- Kalecki, M. (1935, 1952) 'A macroeconomic theory of business cycles', *Econometrica*, July 1935; revised as 'The determinants of profits', *Theory of Economic Dynamics*, Kelley, New York, 1969.
- Koshimura, Shinzaburo (1975) *Theory of Capital Reproduction and Accumulation*, ed. J.G. Schwartz, Engl. trans. Toshihiro Ataka, Dumont Press Graphix, Kitchener (Ontario); first published, in Japanese, in 1956.
- Klein, Lawrence R. (1947) 'Theories of effective demand and employment', *Journal of Political Economy*, April; reprinted in David Horowitz (1968, pp. 138–75).
- Leontief, Wassily (1938) 'The significance of Marxian economics for present-day economic theory', *American Economic Review Supplement*, vol. 28, No. 1, March; reprinted in David Horowitz (1968, pp. 88–99).
- Mandel, Ernest (1978) 'Introduction' to Marx (1885), English trans. Fernbach, pp. 11–79.

- Marx, Karl (1867, 1890) *Das Kapital, Kritik der Politischen Ökonomie, Band I, Der Produktionsprozess der Kapitals*, Engl. trans. Ben Fowkes, *Capital, A Critique of Political Economy, Volume One*, Penguin Books Harmondsworth, 1976.
- Marx, Karl (1885, 1893) ed. F. Engels, *Das Kapital, Kritik der Politischen Ökonomie, Band II, Der Zirkulationsprozess des Kapitals*, MEW 24, Dietz Verlag, Berlin, 1972; Engl. trans. David Fernbach, *Capital, A Critique of Political Economy Vol II*, Penguin Books, Harmondsworth, 1978.
- Marx, Karl (1894) ed. F. Engels, *Das Kapital, Kritik der Politischen Ökonomie, Band III, Der Gesamtprozess der kapitalistischen Produktion*, MEW 25, Dietz Verlag, Berlin, 1972; Engl. trans. David Fernbach, *Capital, A Critique of Political Economy, Vol III*, Penguin Books, Harmondsworth, 1981.
- Marx, Karl (1904/10, 1956/66) ed. K. Kautsky, *Theorien über den Mehrwert (1904/10)*; selections first translated 1951 by G.A. Bonner & E. Burns; 2nd edition (1956/66) by Institut für Marxismus-Leninismus, *Theorien über den Mehrwert Teile I, II, III*, MEW 26.1, 26.2, 26.3, Dietz Verlag, Berlin, 1973, 1972, 1972; Engl. edn: *Theories of Surplus Value, Part I*, ed. S. Ryazanskaya, trans. E. Burns (1963); *Part II*, ed. and trans. S. Ryazanskaya (1968); *Part III*, ed. S.W. Ryazanskaya & R. Dixon, trans. J. Cohen & S.W. Ryazanskaya (1971), Lawrence & Wishart, London, 1969, 1969, 1972.
- Morishima, Michio (1973) *Marx's Economics; A dual theory of value and growth*, Cambridge/New York, Cambridge University Press.
- Moseley, Fred (ed.) (1993) *Marx's Method in 'Capital': A reexamination*, Humanities Press, Atlantic Highlands, NJ.
- Murray, Patrick (1988) *Marx's Theory of Scientific Knowledge*, Humanities Press, Atlantic Highlands, NJ/London, 1990.
- Oakley, Allen (1983) *The Making of Marx's Critical Theory: A Bibliographical Analysis*, Routledge & Kegan Paul, London.
- Reuten, Geert (1993) 'The difficult labour of a theory of social value; metaphors and systematic dialectics at the beginning of Marx's *Capital*', in F. Moseley (ed.) pp. 89–113.
- Reuten, Geert (1995) 'Conceptual collapses; a note on value-form theory', *Review of Radical Political Economics*, vol.27, no. 3: 104–10.
- Reuten, Geert & Michael Williams (1989) *Value-Form and the State: the tendencies of accumulation and the determination of economic policy in capitalist society*, Routledge, London/New York.
- Robinson, Joan (1948) 'Marx and Keynes' (in Italian for *Critica Economica*, 1948); in J. Robinson, *Collected Economic Papers I*, Oxford, 1950; reprinted in David Horowitz (1968, pp. 103–16).
- Robinson, Joan (1951) 'Introduction' to Rosa Luxemburg (1913), *The Accumulation of Capital*, Routledge and Kegan Paul, London, 1971, pp. 13–28.
- Smith, Tony (1990) *The Logic of Marx's Capital: Replies to Hegelian Criticisms*, State University of New York Press, Albany.
- Smith, Tony (1993) 'Marx's Capital: and Hegelian Dialectical Logic', in F. Moseley (ed. pp. 15–36).
- Williams, Michael (1998) 'Money and Labour-Power: Marx after Hegel, or Smith plus Sraffa?', *Cambridge Journal of Economics*, vol. 22, no. 3 (forthcoming).

Author Index

- Adorno, T., 82, 91
Aoki, M., 68
Aristotle, 40
Arthur, C.J., 9, 11-13, 64, 89, 128,
222-3, 227
- Babson, S., 89
Backhaus, H.-G., 223
Baudrillard, J., 62
Bailey, S., 40, 97, 152-3
Benjamin, W., 82
Bentham, J., 57
Böhm-Bawerk, E. von, 152
Bonefeld, W., 68
Bortkiewicz, L., 95, 184
Boumans, M., 223, 226
Brenner, R., 68
de Brunhoff, S., 153
Byrne, J., 78
- Campbell, M., 12-13, 30, 64, 152-3,
200, 207, 223, 225
Carchedi, G., 64, 223
Caston, A., 71, 76-8, 90
Clark, K., 78
Clarke, S., 183-4
Clausing, D., 90
- Davidow, W., 76, 79-80, 90
Davis, S., 76, 81, 85, 90
Dertouzos, M., 68
Destutt de Tracy, A., 178
Devine, P., 90
Desai, M., 15, 225-6
Domar, E.D., 14, 203
Dow, A., 156
Dow, S., 156
- Edelman, D., 76
Eldred, M., 223
Elson, D., 90
Engels, F., 3, 7-9, 12, 14, 17, 25, 30,
98, 100, 124-5, 128, 160, 163-4,
166, 169, 188, 223
- Fernbach, D., 8, 14, 62, 126
Florida, R., 80-1, 90-1
Foley, D.K., 30, 183, 225
Fowkes, B., 125
Freeman, A., 125
Friedman, M., 147, 155
Fujimoto, T., 78
- Ganssmann, H., 152
Gehrke, C., 159, 223
Geras, N., 90
Glick, M., 68
- Hanlon, M., 223
Hapoienu, S., 85
Harcourt, G.C., 14
Harris, D., 225
Harrod, R., 15, 203
Harvey, D., 61-2, 82, 89
Hauser, J., 90
Hegel, G.W.F., 5, 12, 99, 101,
110-13, 115-17, 187, 219
Heinrich, M., 183
Hicks, J.R., 147, 153
Hilferding, R., 9, 31, 184
Holloway, J., 68
Horowitz, D., 14
Hounshell, D., 68
Howard, M.C., 14-15, 159
- Imai, M., 68
- Jameson, F., 61
Jasny, N., 15
Jones, D., 70-1, 77-8, 90
- Kaldor, N., 200, 224
Kalecki, M., 9, 14, 200, 226
Kautsky, K., 8
Kemp, T., 1
Kenney, M., 80-1, 90-1
Keynes, J.M., 14, 150, 153, 155-6,
190-1, 200, 224
King, J.E., 14-15, 159

- Kleiber, L., 223
 Klein, L.R., 191
 Kline, S., 84
 Koike, K., 69
 Korsch, K., 183
 Koshimura, S., 225
 Kugelmann, L., 14, 30
 Kurz, H.D., 14, 159, 223
- Lakatos, I., 70
 Lange, O., 15, 159
 Lassalle, F., 18, 30
 Lavoie, M., 156
 Lenin, V.I., 184
 Leontief, W., 9, 159, 172, 190
 Lester, R., 68
 Levine, N., 125, 128
 Louca, F., 223
 Lowe, A., 154
 Luxemburg, R., 9, 184, 224
 Lyotard, J.-F., 62
- Mäki, U., 151
 Maleki, R., 88
 Malone, M., 76, 79-80, 90
 Mandel, E., 1, 11, 14-15, 30-1,
 57-61, 63-5, 226
 Marx, K., *passim*
 Matsu, K., 84
 Mattick P. Jr, 7, 10, 30, 32, 64,
 223
 Mattick P. Sr, 29-30, 32
 Mayer, M., 86
 McDonough, J., 85
 Meyer, S., 14
 Minsky, H., 154
 Moggridge, D.E., 14
 Moore, B., 153, 155
 Morgan, M., 223
 Morishima, M., 159, 225
 Morrison, M., 223
 Moseley, F., 12-14, 64, 182-3,
 223-4
 Murray, P., 3, 10-11, 14-15, 62, 127,
 223-4
- Nugent, T., 61
- Oakley, A., 14, 189
 Ohno, T., 88
- Polanyi, K., 39
 Postone, M., 61-2
- Quesnay, F., 12, 47, 127, 161, 163-4,
 166-71, 183, 189, 191, 194, 200,
 223-4
- Ramsay, 171, 177
 Rank, H., 84
 Reich, R., 88-89
 Reuten, G., 13-14, 64, 220-1, 223,
 227
 Ricardo, D., 47, 63, 153, 171, 191
 Robinson, J., 14-15, 191, 224
 Roderick, J., 62
 Rogers, C., 154-5
 Roos, D., 70-71, 77-8, 90
 Rosdolsky, R., 30-1, 35, 61, 183
 Roth, M., 223
 Rubel, M., 17, 30-1, 125
 Rubin, I.I., 183
- Sawyer, M.C., 14
 Say, J.B., 63, 171
 Schott, 14
 Schrage, M., 91
 Schweickert, D., 90
 Shaiken, H., 88
 Simmel, G., 44, 63
 Sismondi, J.C.L. de, 152
 Smith, A., 12, 14-15, 38, 40, 47,
 63-5, 123-4, 127, 153-5, 160-1,
 163-78, 182-4, 189
 Smith, T., 7, 11, 64, 70-71, 83, 85,
 127, 223
 Solow, R., 68
 Straffa, P., 109, 183
 Steuart, J., 153-5
 Stone, G., 15
 Stone, R., 15
 Storch, H., 177
 Sweezy, P., 10, 34, 184
- Tapscott, D., 71, 76-8, 90

- Thompson, W., 196, 224
 Toffler, A., 77
 Tooke, R., 134-5, 142, 178
 Tugan-Baranowski, M.I., 9, 31, 184
- Untermann, E., 8
- Walker, R., 68
 Warner, T., 88
 Williams, M., 14, 220-1, 223
 Winger, R., 76
 Wolfson, M., 155
 Womack, J.P., 70-1, 76-8, 90

Subject Index

- abstraction, 37, 42, 132–3, 192, 194
 determinate, 195
 general, 39, 194
 level of, 100, 220
 in practice, 97
abstract categories, phenomenal
 expressions of, 7
accumulation, 41 *et passim*
 rate of: out of surplus value, 206,
 226 (n.25); decreasing, 213
advertisement, 84
appearance, as form, 31 (n.14)
assumption(s)
 general, for *Capital II*, 130–1
 ‘normal’, 130–4
 precious metal money and
 Marx’s method, 134–6
 for simple reproduction, 192–6

balance, accidental, 143–4, 181,
 202–4, 210
buying time, 50

capital, 106–8, 161–3 *et passim*
 analysis of, and Marx’s goal, 19
 circulating, 46–7, 49, 63 (n.33)
 circulation of, 3–5, 25, 42, 52, 96,
 132, 161–2, 182, 189:
 continuity of and hoards,
 137; and reproduction, 189
 of circulation, 47, 63 (n.33)
 circuit(s) of (*see also* circuit), 3, 22,
 56, 95–7, 100, 106–8, 199:
 fourth, 119–24; and Hegel’s
 Logic, 110–13, 116–18; Marx’s
 summary of, 101; moments
 of, 107; and unity-in-
 difference, 113; and
 universality, particularity
 and individuality, 113–16;
 unity of, 107–8
 as class relation, *see* class
 relation

‘commerce and industry’ picture
 of, 33, 38, 41–2, 54–7, ch. 3,
 passim, 127 (n.30): and
 distinction between
 circulating capital and
 capital of circulation, 48–9
commodity, 23, 33–4
constant, 49, chs 7 and 8 *passim*
constituted as capital, 107
dialectic of fluidity and fixity of,
 99, ch. 5 *passim*: and Hegel’s
 Logic, 111
empiricist concepts of, 102
fetishizing of, 45
fixed, 46, 64 (n.34), 141, 144, 154
 (n.27), 200–3: and
 discontinuity of investment,
 179–81, 184 (n.12), 201–3
form, 35, 41, 53
and ideality of its concept of self-
 reproduction, 117–18
general formula for, 22
industrial, 23, 96, 101, 131–3, 136,
 152 (n.4), 154 (n.29)
in general, 22–4
interest-bearing, 147
merchant’s, 131–3
metamorphoses of, 37, 47, 191
moments of, 107, 133
money, 23, 33–4, 43, 153–4 (n.22):
 potential, 140, 153–4 (n.22),
 180–1
money dealing, 131–4
as movement/motion, 23, 37, 96,
 106–8, 116, 131, 133, 173,
 189–90, 193: of absolute
 negativity, 117; and
 dialectical movement, 112;
 production of, 3, 13; *see also*
 production
productive, 34, 44, 102
recalcitrance in material basis of,
 117–18

- capital *continued*
 self-positing movement of, 5, 117
 social, 23–24, 36, 189
 valorisation of, 4, 96: as value-in-process, 96
 variable, 49, ch. 8 *passim*: and wealth, 20, 33
- Capital
 Books and Volumes of, 2
 Book II of: characterisation of, 19, 33, 131; early drafts of, 98–100, 163–70; editions of, 8; Engels' editorial work on, 8–9, 17, 30 (n.1), 124–5, 188–9; general assumptions of, 130–1; influence of, 9; outline of, 6–7
 interconnection of Books I and II of, 2–6
 Marx's plans for, 17–18
 method of, 6–7; *see also* method
 Volume II of, *see* Book II
 capital–consumer 'co-destiny relation', 79
 appraisal of, 80–8
 capitalist economy / production *passim*
 duality of, 14 (n.4), 38, 191, 199, 201–2, 221–2: redoubled, 221
 centralization and lean production, 89 (n.8)
 circuit (*see also* capital)
 of commodity capital, 105–6; and standpoint of physiocracy, 109; and standpoint of Sraffians, 109–10
 of consumption ($L-M-C$), 86
 of factors of production, 119–20; defect of, 120–3; merit of, 123–4
 of industrial capital (*see also* capital, industrial): as a system of circuits, 112
 of money capital, 101–4: and standpoint of mercantilism, 108–9
 of productive capital, 104–5: and standpoint of classical political economy, 108–9
 circulation (*see also* capital); commodity; money, 25–26
 costs, 45–6: general law of, 141–2; monetary, 129, 135; time, 45, 50, 133; and lean production, 71–72
 circulatory functions, 45
 tendencies for material transformation of, 54
 class division, 35, 43–4, 53, 87, 103, 138, 195
 class relation, capital as, 7, 21, 24, 26–27, 103
 classical political economy, 4, 19–20, 37–40, 47, 95, 97, 108–9, 123, 162, 171
 commodification, 83–4
 commodity *passim*, 3, 19–21, 60, 62 (n.20)
 circulation, 25; generalized, 34, 42, 129; simple, 34, 36, 54–5, 129
 dual nature of (*see also* capitalist economy), 27: exchange and money, 135; form, 83: and consumer wants, 84
 competition, 24
 computer-aided design (CAD), 77–8
 computer-aided manufacture (CAM), 77–8
 concept, fluidity of, 113
 Concept, The
 determinateness of, 111: in Hegel's *Logic*, 110–13
 conceptualisation (*see also* method)
 level of, 5
 consumer / consumption
 and Marxian theory, 74:
 manipulation of dispositions of, 84
 and neoclassical theory, 75:
 subservience of, 80–6
 consumerism, 82
 consumption time, socially necessary, 82

- corporation, horizontal, 78
 credit money, 134
 credit system, 129, 130, 132, 134–7, 144–51, 153 (n.17), 155 (n.40), 180–1
 and disturbance, 148
 crisis (*see also* disproportionality; disruption; overproduction; underconsumption), 28–9, 141, 179, 181, 191, 201, 204, 223
 particular, 29
 possibility of, 28, 143–4, 202–3
 world market, 29
- decentralization and lean production, 89 (n.8)
 demand, effective, 28
 determination
 and 'The Concept', 111
 and form, 62 (n.21)
 dialectic(al)/systematic–dialectic, 187–8
 character of the capital circuit, 106–8
 character of reproduction scheme, 218–23
 of The Concept, 110–13
 exposition/presentation, 5, 104
 dialectical unity, 37
 disproportionality, 31–32 (n.32), 179
 disruption, 130 (*see also* crisis)
 and fixed capital, 141, 172–3, 179–81, 184 (n.12)
 and money, 134
 duality, *see* capitalist economy
 economic crisis, *see* crisis;
 disruption
 economic form (*see also* capital form; commodity form), value form, 19–20, 27
 economic growth, 201–2
 steady state, 205–6, 217
 economic value (*see also* value), 20
 economics (*see also* macroeconomics)
 bourgeois and the concept of capital, 102
 Marx's and modern orthodox, 5
 modern orthodox, 5, 187–8, 218
 (*see also* neoclassical economics)
 economy, the, 26
 commercial and capitalist, 34
 epistemology, social, 49
 equilibrium (*see also* balance), 28, 95, 197
 fetishism, 50
 financial assets, 137, 146
 Fordism, 67–68
 form, *see* capital form; commodity form; economic form; value form; social form
 funds
 accumulation (latent money capital), 140
 fixed capital (amortization fund), 141, 154 (n.27): disruptive influences of, 141
 reserve (circulation hoards), 139–40, 153 (n.21)
 turnover, 140
 Hegel's *Logic* and Marx's capital circuits, 110–13
 Hegelian, 37
 historical dialectics, 227 (n.35)
 historical materialism, 36, 226 (n.30)
 hoards/hoarding (*see* money hoards)
 social hoard, 138; subdivisions of, 139–41
 horizontal corporation, 78
 'human capital', 55
 idealization, 131
 input–output tables (Leontief), 159, 172, 224 (n.12)
 integration, vertical, 89 (n.8)
 International Symposium on Marxian Theory (ISMT), 2, 13, 125
 inventory costs), 45
 and lean production, 72–3

- just-in-time approach, 69–70, 72
- labour, *passim*
concrete, 58–61
productive and unproductive, 44–6, 57–61; and Mandel's position, 57–61
wage, 138–9, 150
- labour power, 102, 103 *et passim*
appearing as commodity, 43
- labour-time, 21, 30 (n.13)
- lean production, 68–70
and capital–consumer relation, 79; appraisal of, 80–8
and circulation time, 71–2
and consumer sovereignty, 74–80
and feedback loop connecting capital and consumers, 76–80
and inventory costs, 72–3
and turnover time, 72
- liberalism, 34, 57
- macroeconomics, construction of, 190–4, 218
two-sector, 194
- market exchange, 20
- market categories, forms of
appearance of capital, 27
- mass customization, 76–8
- measure, quantitative (*see also* value), 104
- mediating and mediated, 113
- mediation, circle of, 113
- mercantilism, 37, 108–9
- method/methodology
Marx's in *Capital*, 6–7, 130–4, 134–6, 152 (n.6), 159, 163, 187–8, 195–6, 218–23
see also abstract(ion); assumptions; determination; dialectic; models
- micro-foundations, 5
- micromass consumption, 76–8
- models, economic, 19, 188–90, 218–19, 223, 227 (n.31)
- moment, 219–20
- money, 44, *passim* esp. ch. 6
and capital (*see also* capital), 102, 150, 182
circulation of, 141–4
capitalists' monopoly over, 138, 141, 150
credit (*see also* credit system), 134–5
vs credit, 137–8
and disruptions, 134
form, 135, 138
endogeneity of, 145, 151, 153 (n.21), 154–5 (n.33)
high-powered, 137, 153 (n.15)
hoards (*see also* hoard, social), 129–30, 136, 137–41, 146–51, 153 (n.14), 155 (n.34–5, 37–8), 181, 207; socialization of, 147
necessity of, in capitalism, 129–30, 139, 150
normal functions of, 135, 137–47: and applicability to credit money, 136
metal (commodity), 144, 147–8, 152 (n.9, 11), 154–5 (n.33), 155 (n.36, 39)
metal, assumption, 134–6, 137
quantity of, 138, 143–7, 151, 153 (n.18), 169; and prices, 154–5 (n.33); and surplus value, 142–3; and wages, 138, 153 (n.17)
quantity theory of, 139–40, 153 (n.21), 169
reflux of, 141–44, 166, 169; and revenue, 182
supply, 138, 144–7
symbolic, 136, 152 (n.9); and universal equivalent, 139
monopoly, capitalists' and money, 138, 141, 150
- 'normal' assumption, 130–4, 136–7
- negation, 99
- neo-Ricardian, 162
- interpretation of Marx's theory of value and price, 159–60, 183 (n.1, n.8)

- neoclassical economics (*see also* economics, modern orthodox), 4, 40, 75, 95, 123, 150, 159, 162
- overcapacity, 210
- overproduction, 202–3, 205, 212–13, 216–17
- post-Keynesian, 150–1
- physical quantities, 159, 172, 181–2, 184 (n.12), ch 7 *passim*
- physiocracy, 37, 106, 109, 168, 189
industrial, 110
- price of the total product, 160, ch. 7 *passim*
- production (*see also* capital)
time, 45, 50, 152 (n.5)
unity of process of and circulation, 106, 132, 136, 153 (n.12)
- production in general, 33, 42
- productivity increase, 51
- profit, 133
- Ricardians, 97, 133
- realisticness/unrealisticness, 131, 136, 151 (n.2), 192
- reproduction *passim*
dual character of social, 27, 191
reproduction schemes, *passim* (ch.7 and ch.8)
and circulation of capital, 51–2
and division of departments, 52–3, 174, 194; in early draft, 164
early drafts of, 163–70; and exchange between departments, 174–175; and exchange within departments, 175
- notation, 197
- purpose and function of, 28–9, 51–2, 160, 190–1
- and expanded reproduction, 178–81, 201–17: assumptions, 203–4; formalisation, 214–17; periodisation, 204–5; proportionality condition, 209
- and simple reproduction, 171–8, 190–201; assumptions, 192–6; proportionality condition, 197
and transformation of values into prices, 32 (n.33), 159
and value-added, 198–200
revenue, 160, 165–6, ch 7 *passim*
- selling time, 50
- service industries and (un)productive labour, 57
- 'Smith's dogma', 160, 171, ch 7 *passim*
- social form (*see also* economic form), 37–8, 40–2, 53, 55–6, 109
- spiral (multiplier) effects, 202, 210, 216
- Sraffian(s)
and circuit of commodity capital, 109–10
linear production theory, 159–60, 172
- storage costs, *see* inventory costs
- subsumption
formal and real, 35, 53, 61 (n.8), 85–6; and capital–consumer relation, 85–6; and use-values, 53, 56
real, 36; of circulation under capital, 53–4
- successivism, 95–8, 106
- supervenience, 107, 116
- surplus value *et passim*, 19, 133, 138
originating in production, 43
- syllogism, Hegel's theory of, 110–13, 127 (n.38)
and Marx's circuits of capital, 113–16
in Marx's *Grundrisse*, 127 (n.32)
- Tableau Économique*, 12, 166–9, 189, 200, 225 (n.17)
- tendencies, 54
- time, 97, 133, 145
- transportation costs, 45
- turnover (time), 50, 140, 145, 148–8, 154 (n.24)
and lean production, 72

- twofold character, *see* capitalist economy, duality
- underconsumption, 28, 32 (n.32)
- use-value, 34–6, 41–2, 43–4
and circulation costs, 45
and formal and real subsumption, 53
and social form, 56
- utility, 63 (n. 30–1)
- valorisation *passim*
of capital, 4
in its form, 106
process, 106
- value *passim* (*see also* economic value), 97, 133, 153 (n.12)
added, 198–200
and capital, 96–7
and circulation costs, 46
exchange, 97
ideal and endogenous money, 153 (n.21)
intrinsic, 97
labour theory of, 152 (n.5)
'objective' character of, 135, 136, 152 (n.9)
and prices, 173
standard measure of, 97
valorized, 106
- value form(s) *et passim*, 20, 34–5, 37–41, 55–6, 191
- wage labour, *see* labour, wage
- wealth and capital, 20, 33
- wealth, 40–1, 57, 62 (n.16), 138
generalised circulation of, 33
- wealthism, 40, 56
- wealth fetishism, 40
- widow's cruse, 200, 210
- workers, separation from means of production, 35, 43, 138
- working time, 50, 152 (n.5)