STUDIES IN
MONETARY ECONOMICS

4

sme

A STUDY IN THE THEORY OF INFLATION AND UNEMPLOYMENT

CLAES-HENRIC SIVEN

NORTH-HOLLAND

A Study in the Theory of Inflation and Unemployment

CLAES-HENRIC SIVEN
Department of Economics
University of Uppsala

1979

NORTH-HOLLAND PUBLISHING COMPANY
AMSTERDAM • NEW YORK • OXFORD

ISBN: 0 444 85252 2

Publishers:
NORTH-HOLLAND PUBLISHING COMPANY
AMSTERDAM • NEW YORK • OXFORD

Sole distributors for the U.S.A. and Canada:
ELSEVIER NORTH-HOLLAND, INC.
52 VANDERBILT AVENUE
NEW YORK, N.Y. 10017

Library of Congress Cataloging in Publication Data

Siven, Claes-Henric, 1940-
A study in the theory of inflation and unemployment.

(Studies in monetary economics ; v. 4)
Originally presented as the author's thesis, Stockholm, 1975.
Bibliography: p.
1. Inflation (Finance) and Unemployment--Mathematical models. 2. Microeconomics. I. Title.
HD5707.S53 1978 332.4'1'01 78-24271
ISBN 0-444-85252-2

PRINTED IN THE NETHERLANDS

A STUDY IN
THE THEORY OF
INFLATION AND UNEMPLOYMENT

Studies in Monetary Economics

Editors

KARL BRUNNER
STANLEY FISCHER

Associate Editors

RUDIGER DORNBUSCH
PIETER KORTEWEG
THOMAS MAYER

Volume 4

NORTH-HOLLAND PUBLISHING COMPANY
AMSTERDAM • NEW YORK • OXFORD

INTRODUCTION TO THE SERIES

This series publishes books of interest to students and researchers working in the fields of macro-economics, monetary theory and policy, banking and the operation of financial markets. It is intended that works of empirical emphasis will be included in the series along with theoretical contributions. Publications will include research monographs and the proceedings of significant conferences. The editors welcome submissions of manuscripts for inclusion in the series.

PREFACE

This book is an outgrow of my interest in short run macroeconomics and the impulses I got from the Workshop of the International Economic Association in Bergen in 1971. Prototypes for chapters II and III were presented at that occasion and much of the work since then has been refinements and extensions of those prototypes.

Various versions of the chapters have been discussed in seminars at the Institute of Economics at Stockholm University. Foremost I want to thank my teacher, Lars Werin, for his interest in my work, encouragement and constructive advice. I am also very grateful to Tõnu Puu, Ragnar Bentzel and Harald Dickson, who have given many valuable suggestions for improving the mathematical analysis. Chapter III (as well as the rest of the book) has benefited a great deal from the criticism by Bo Axell. Chapter IV might never have been written were it not for constructive advice from Karl-Göran Mäler. Hans Söderström and Jan Herin have given me many good ideas for chapter V. Chapter VI has greatly improved from the advice by Nils-Henrik Schager. I also want to thank the other members of the seminar for their criticism and constructive advice: Kerstin Lövgren, Irma Rosenberg, Thomas Franzén, Bengt-Christer Ysander, Lewis Taylor, Richard Murray, Lars Nyberg, and Staffan Viotti.

William Melton has translated Chapter II and corrected the English of the other chapters. Kerstin Edwardsson, Kerstin Grundberg, and Ulla Blomqvist have typed various preliminary versions of the chapters. Kerstin Lindskog has done the typing of the final version. By a kind generosity by The Industrial Institute for Economic and Social Research, the figures were drawn by Berit Lindberg. Financial support has been given by Svenska Handelsbanken Foundation for Social Science Research and by The Swedish Council for Social Science Research.

With the exception of a few corrections, the book was completed in October 1975.

Uppsala, September 1978

Claes-Henric Siven

CONTENTS

CHAPTER I. INTRODUCTION

1. Starting Points, Problems, and Purpose of the Analysis

Two important objections could be made to the "traditional" inflation and unemployment theory.[1] The first of these objections is that, despite the simultaneity of inflation and unemployment in reality, there is no common, integrated theory for these two phenomena. To the extent that the mechanisms generating inflation and unemployment are independent, this of course is not much of a problem. But since that is probably not generally the case, the bifurcation of short-run macroeconomics constitutes a problem both from a scientific and an economic policy point of view.

The second objection is that neither inflation nor unemployment theory builds on relevant microeconomics. This is a drawback, since it is difficult to determine the exact assumptions about household and firm behavior which the postulated macro dynamic process builds on. The basic reason for the deficiency of the microeconomic foundations of inflation and unemployment theory was the fact that microeconomics - *i.e.*, general equilibrium theory - in deducing the macroeconomic relationships started from an analysis of the behavior of individual economic agents in perfect competition. The abstraction from adjustment costs caused by, *e.g.*, incomplete information concerning the market situation and transactions possibilities implied that microeconomics was not very suitable for describing phenomena, the driving forces of which to a great extent probably depend on these frictions.

Presently rather extensive work is being done to develop short-run macroeconomics on the basis of studies of the behavior of "rational" economic agents in a generalized neoclassical milieu.[2] This research is being done in two directions. The first

---

1) Here is meant the theory of demand and cost inflation developed during the forties and fifties and keynesian employment theory, respectively.

2) Chapter II contains a rather detailed survey of this work.

of these is associated with the names of Clower, Patinkin, Leijonhufvud, Barro, and Grossman. It implies an investigation of the fundamentals of the multiplier mechanism: What effects will restrictions on the transaction possibilities generated by disequilibrium in some markets have on the course of events on the other markets of the economy? To what extent do feed-back mechanisms tend to amplify or modify the effects of various disturbances?

The general starting point for this analysis has been an exogenously given and fixed price system. Given this price system, excess supply or excess demand on different markets will imply rationing restrictions of different kinds. This will influence the behavior of the firms and households on other markets through the spill-over effects induced by the extra restrictions. The advantage of this analysis is that the restrictions on the choice possibilities of the economic agents (e.g., involuntary unemployment) caused by disequilibrium are the focus of interest. The main disadvantage is the assumption of an exogenously given price system. For the analysis of the behavior of rational economic agents to be carried through satisfactorily, price and wage determination must also be studied. The abstraction from this important aspect of the problem has also implied that the process of inflation, and the interaction between inflation and unemployment, have been out of reach of the analysis.

The second direction of research is represented inter alia by contributions of Stigler, Alchian, Phelps, Holt, and Mortensen. The common starting point has been a study of markets in which information concerning transaction possibilities is imperfect and in which the absence of a common market price not only induces search activities, but also constitutes one possible explanation for unutilized resources, e.g., unemployment. The thought here is that it is not profitable for persons who have newly entered the labor market to accept all employment offers since they could get better offers by further search.

The strategy of the unemployed could therefore be described by minimum requirements on the employment offers which they accept. These minimum requirements should neither be too low, nor too high. If they are too high, the expected length of the unemployment period will be unduly long. The minimum requirements should further be coupled to present market conditions. The higher the demand for labor, the higher the minimum requirements should be.

The fact that both firms and household have an incomplete overview of the market however means that various sorts of mistakes are possible. As to the firms, their attempts during a boom to attract employees from other firms by increasing their wage offers in relation to the offers of the other firms may result in an increase in the actual rate of wage inflation in comparison to the expected rate. For the unemployed, the rate of unexpected wage inflation implies that a greater fraction of the employment offers will be accepted, since the minimum requirements relate to <u>expected</u> market conditions. This implies that the number of new hirings will increase on the same time as the rate of unemployment falls.

The above reasoning also implies a connection between the rate of inflation (more strictly the rate of wage inflation) and the rate of unemployment. This means that it has been possible, starting from an analysis of the behavior of "rational" economic agents on markets with imperfect information, analytically to derive the connection between unemployment and wage increases which has been empirically observed (the Phillips curve).

If this direction of research thus represents the first attempt to construct an integrated theory of inflation and unemployment on a microeconomic basis, the limitations of the analysis must nevertheless be stressed.

a. Unemployment is mainly voluntary. Variations in the rate of unemployment are due to faulty expectations about market conditions which cause the unemployed sometimes to refrain from accepting "good" employment offers, sometimes to accept "bad" employment offers.

b. The analysis is restricted to developments in the labor market. Events in the goods market are exogenously determined. This implies that it is impossible to study the interactions between the processes of wage and price inflation -- an interaction which is of central importance for modern inflation theory.

c. Furthermore, it is not clear to what extent events in the goods market will influence the development of unemployment. Is it possible, for example, to speak about a unique connection between "the rate of inflation" and the development of unemployment?

d. If it is clear that the "new" multiplier theory essentially does not build on equilibrium assumptions, the answer to the same question is less determinate as regards the "new" theory of inflation and unemployment. On the one hand, the emphasis of the latter theory on the significance of different imperfections on the labor market implies assumptions which are not consistent with the assumptions of perfect information concerning the transactions possibilities underlying traditional equilibrium concepts. On the other hand, the high degree of (price and) wage flexibility assumed by this direction of research implies possibilities of market clearing via the price system. The problem thus is whether the analysis is based on equilibrium assumptions or not.

The list above touches on problems concerning the properties of the different macroeconomic models. However, the underlying microeconomic analysis also leaves open several questions.

e. What role does the coordination of the price and wage setting of firms play for their planning in markets with imperfect information? What implications will this coordination have for the process of price and wage increases?

f. When discussing markets with imperfect information, not only variations of prices and wage rates, but also of the supply of information, should be important for the individual firms when trying to attract new customers and recruit new employees. The question then is what role the coordination between the price, wage and information policy plays in the planning of the firm. It should be stressed that the possibility that the firms may attract new employees by other means than by increasing their wage offers implies <u>one</u> possible mechanism generating involuntary variations in the rate of unemployment. If the firms plan to decrease the number of their employees, this could be done by diminishing the supply of information implied by the number of vacancies. This means - irrespective of the wage level and the minimum requirements of the unemployed - increased difficulties of getting a job.

g. Just as firms may vary their supply of information, households may vary their search activity on the goods and labor markets.

In the micro analyses which have formed the basis for analytical derivations of the Phillips curve, no precise analysis has been made of what conditions govern the search activity of households. Instead the basis of the analysis has been a rather vague notion that there is some sort of indivisibility which implies that the unemployed have a comparative advantage for searching. This indivisibility is also a possible explanation for the minimum requirements for accepting a job offer. An unemployed who accepts an employment offer will according to this discussion thereby gain an immediate increase of the income but on the other hand loose much of the possibilities of further search.

h. Not only an endogenous explanation of the intensity of search is needed, however. Various other aspects of search are of great interest and should be analyzed. One example is simultaneous search on several markets. Another is repetitive search. The acceptance decision of the unemployed can not be regarded as a one-time event, as has usually been the analytical assumption. The first employment constitutes but a link in a chain of future employments. The value of an employment offer could thus not be calculated without consideration of future on-the-job search. Search thus has to be analyzed within an intertemporal context.

The problems outlined above constitute some of the most important starting points for the present study. The main goal is to further develop the new inflation and unemployment theory so as to take into consideration the interaction between the processes of price increases and wage increases. To this end, it has been considered important to base the macro model on a microeconomic analysis of the behavior of rational firms and households acting in a world where information about transaction possibilities is imperfect and where contacts between trading partners are costly to achieve. Thus constructed, a microeconomic foundation of the macro analysis creates the possibility of studying the actual macroeconomic implications of various assumptions about the milieu in which the economic agents live, plan and act.

But the microeconomic studies also have an intrinsic value. The development of the neoclassical theory has to a considerable extent been held back by the assumptions of complete market information and the absence of transactions costs which constitute