theory of Macroeconomic Policy

SECOND EDITION

Theory of Macroeconomic Policy

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Second Edition

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First Published 1974 by

PHILIP ALLAN PUBLISHERS LIMITED
MARKET PLACE
DEDDINGTON
OXFORD OX5 4SE

Second edition 1982

British Library Cataloguing in Publication Data

Peston, M.H.
Theory of macroeconomic policy. — 2nd ed.
1. Macroeconomics
I. Title
339'.01 HB171

ISBN 0-86003-038-5
ISBN 0-86003-136-5 Pbk

Typeset by *Sunrise Setting,* Torquay, Devon
Printed in Great Britain at Hartnoll Print Limited, Bodmin, Cornwall

Preface

PREFACE TO SECOND EDITION

The purpose of this second edition is twofold. One is to remove the errors contained in the first edition. The second is to try and take account of the many developments in the theory of macroeconomic policy which have occurred in the past few years.

Of the errors, they can be divided into three categories — typographical, technical, and doctrinal. I am obliged to all those readers who have been in touch to point them out. I would like to be certain that the new edition is free from all such faults, but past experience suggests that that is most unlikely. All I can hope is that future readers will be as forebearing as past ones.

Concerning the substantive changes, it is apparent that the first edition was a product of the years of confident interventionism based on a rather elementary version of Keynesian economic theory. Its emphasis lay on technique, and within that too little attention was paid to problems of inflation and to the open economy. The new edition is no less interventionist in spirit, and it remains well within the central tradition of the economics of Keynes. It does, however, pay more attention to matters which I am confident Keynes himself would have stressed at this time. In particular, rather more weight is given to the problems of stagflation. Relative to that the tone is more pessimistic. Certainly, the first edition contained passages indicating the circumstances in which policy does more harm than good. The new edition both enlarges the scope of that discussion, and also recognises that doing the best you can still on occasion leaves the problem of policy essentially unsolved.

In introducing new material, I have also taken the opportunity of removing other sections which appeared interesting when they were originally written, but have had little subsequent impact. I hope that

the additions are worthy of inclusion. But I must also recognise, with macroeconomics changing so rapidly at the present time, that it is impossible to include every new development of interest. In this connection, a great deal of thinking on new methods of monetary control on the one hand, and of incomes policy on the other, will dominate the economics of the 1980s. A textbook can bring these topics to the student's notice, but he must then be encouraged to become acquainted with contemporary events and the latest publications in the journals.

M.H. Peston

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January 1982

PREFACE TO FIRST EDITION

Although the theory of macroeconomic policy has advanced considerably in the past decade, the subject itself is rather short of textbooks. Students are obliged, therefore, to search the journals and select parts of a large number of books in order to gain some understanding of what it is all about, and even then they will find it difficult to arrive at a uniform view of the matter. The textbooks which have been published are admirable in many ways but do not cover at all well the two crucial areas of policy within a dynamic model and policy in conditions of risk and uncertainty.

The reason for the lacuna is twofold. First, some economists whose primary interest is in policy have not been equally interested in theory, and have not been acquainted with the technical advances that have recently occurred. Secondly, the relevant problems and methods have been formulated mathematically, and appear at first sight to be extremely hard and abstruse.

The object of this book is to expound the subject at an elementary level. It is intended for economics students in their final year of an honours undergraduate degree course or in the one year masters course. In other words, it assumes a basis of two to three years of economic theory, and one to two years of simple mathematics and statistics. It does not assume that the students are specialists in mathematics, statistics, or econometrics. Equally, students who are antipathetic to any form of analysis, qualitative or quantitative, will not read it with any degree of enjoyment.

To be more specific, the student is assumed to have some acquaintance with the following: (a) the theory of choice (of the household, the firm, etc.); (b) macroeconomic theory including the formulation of macro-models; (c) elementary calculus; (d) elementary algebra; (e) elementary probability and statistics. Some more advanced matters are dealt with in a number of appendices.

My own experience has been that most economics students have got this far by their third year and, indeed, would welcome an opportunity to bring these simple techniques to bear on some interesting problems. What sometimes happens instead is that they are not given a chance to apply them, and they come to the

conclusion that their early studies in these subjects were a waste of time. This is a pity, and can easily be avoided by studying a subject such as macroeconomic policy.

In suggesting that one can teach the subject at an elementary level, I am not, of course, arguing either that one can cover all of it or that it is possible to go very far into the fundamental issues. It is possible, however, to offer a serious account of the main topics and to make a good deal of progress using simple examples. Even the theory of optimal stochastic control is intrinsically a great deal easier than much of the economic theory with which undergraduates are expected to cope. Indeed, the difference between an elementary and advanced approach is often little more than that between elementary but laborious methods, and advanced but more powerful ones.

While I have called this book the *Theory* of Macroeconomic Policy, my view is that the value of such theory lies in its practical applicability, and that what is set out here is relevant to actual policy making. Examples have been chosen with that aim in mind. Except for certain *obiter dicta* I have not devoted much space to the precise institutional arrangements in the UK, but I do refer in certain places to particular events in UK post-war economic history, and indicate what further reading the student might do to investigate these topics further.

Lastly, the presentation is in many places argumentative. This has been my method of teaching and I have found it to be a successful one. It does mean, however, that students will find some of what I have to say disagreeable and possibly even quite wrong. In addition, bitter experience has shown me that the mathematical parts are also bound to contain errors. Obviously, I would like to hear from those readers who discover them. Apart from that I must express my indebtedness to colleagues at Queen Mary College for critical advice and aid, but utter the usual disclaimer of responsibility on their behalf.

M.H. Peston

Queen Mary College,
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The Need for Macroeconomic Policy

The need for macroeconomic policy arises because the economic system does not adjust appropriately to the shocks to which it is constantly subjected. One view is that over the range of behaviour in which we are interested the system does not adjust at all, and at best settles down to a new equilibrium some distance from its desired state until a new shock moves it again. A second view, rather less extreme, is that there is an equilibrium to which the economy has a tendency to return, but that this tendency is too slow and must be accelerated if at all possible. Apart from that, the system may have a tendency to return to an equilibrium condition, but that condition or equilibrium path may have certain undesirable properties (for example, excessive unemployment, or too violent fluctuations) which it would be desirable to remove. In other words, policy may be introduced for two sorts of reasons: to influence where the system goes, and to influence how it gets there.

It must be said at once that the need for policy does not imply the feasibility of policy. It could be that, while the uncontrolled economic system exhibits a great many bad characteristics, we still do not know enough about its workings to improve its performance. (Indeed, it is important to recognise a substantial body of opinion amongst economists which says that the economy works well enough without economic policy, and that most of its shortcomings can be attributed to faulty government policy based on ignorance.)

A large part of positive macroeconomics is devoted to the study of the economic system, both in theory and in practice, with a view to

throwing some light on how it works and on how it can be made to work better. The theory of macroeconomic policy takes its point of departure from macroeconomics proper, and uses this to determine the likely consequences of particular policies, and to determine better or even optimal policies. It is, therefore, limited by the state of macroeconomics.

The theory of macroeconomic policy is positive economics in the sense that it predicts the consequences of particular policy changes in a way which is subject to empirical test. It may also be a positive discipline in another way, namely in predicting the policy changes themselves as a function of the economic variables. Thus it may predict the effects of government expenditure on national income, or the effects of national income on government expenditure, or both.

The subject is also normative in the two usual senses of that word. On the one hand, it may be concerned with propositions of the sort 'if the government wishes to achieve these ends, it should follow policy *A*', or 'if the government wishes to achieve these ends, it should follow policy *A* or policy *B* depending on whether it prefers *X* to *Y*'. Now, these are normative propositions in the sense of being concerned with ends and of using the word 'should'. (Related to them are propositions stating what the ends of actual governments happen to be.) They are also positive because they are empirical and testable. On the other hand, the theory of macro-policy is normative in the sense of presenting particular ends, or saying what the ends of governments ought to be. The economist has not hesitated to express himself on such matters and, even where he is more restrained, the very ends he considers in his positive theory may be taken to express a value judgment concerning their significance compared with other ends which are not considered. Related to normative theory in this second sense is a body of economics concerned with the analysis of ends as such. An attempt is made to clarify the meaning of concepts such as full employment, or to ask what lies behind the treatment of them as social ends. This is a logical and philosophical matter and is a form of meta-theory of normative propositions, usually falling under the general heading of welfare economics.

Although we shall cover only a limited amount of the ground in what is intended to be an introductory and elementary book, we shall touch on macroeconomic policy in all of its senses. Our main

concern will be with the consequences of particular policies and the analysis of optimal policies. In so far as we investigate models in which some or all of public expenditure and taxation are endogenous, we shall also be operating on the fringes at least of a positive theory of government behaviour at the macro-level. In addition, we have a number of things to say about ends themselves; related to what they are, how they are encompassed in a theory of policy, what meaning can be attached to them, and even what they ought to be.

It is worth saying right away, therefore, that while it is important to recognise that policy can be sub-optimal and that governments are capable of making things worse, the standpoint of the present writer is that macroeconomic policy is both necessary and feasible. Broadly speaking, the system responds to contractionary shocks by reducing real output and employment. Near full capacity working it responds to expansionary shocks by price level increases of a continuing kind. While its responses may be bounded in that output and employment do not tend to zero, or the price level and its rate of change to infinity, it is not self-adjusting in the sense of always returning to full employment at constant prices.

In addition the path that it follows will not necessarily be a stable one. The real balance effect may be significant in establishing the existence of full equilibrium, although even here many theoretical difficulties remain to be dealt with. But it is hard to believe that, with or without so-called rational expectations, the actual economy exhibits a satisfactory self-adjusting mode of behaviour.

In this connection there are two additional points to be made. The sort of economic systems we are talking about (those of the advanced industrial countries) contain significant public sectors. These are not artificial or arbitrary additions to the economy to be discarded at will; they are ignored at his peril by the economist excessively devoted to the theory of individual private sector behaviour. Governments are there. They behave in ways which affect the economy and their behaviour is affected by the economy. Any theory of the automatic adjustment of the economy is, therefore, obliged to explain the role of the government in that adjustment, even if the government itself is not engaged in macroeconomic control. The system left to itself, the uncontrolled system, is still one that contains a government and must be studied accordingly.

Secondly, a great deal of writing in the past fifteen or so years has emphasised how difficult economic policy making is, especially when the dynamic stochastic nature of the economy is taken into account. It has been shown how government economic policy can make things worse; indeed, how easy it is for that to happen given the complex situation in which the macroeconomic decision maker finds himself. In the case of the UK, it has even been claimed that there have been a number of cases since the war when government intervention has been destabilising. One can refer to the incorrect timing of the devaluation of November 1967 (by about six months), to the insufficient expansionary power of the Budget of 1970 (by between £500m and £1,000m), and to the delayed expansion of the Budget of 1972 (by six months to a year). More recently there has been the failure to introduce a policy to moderate the rise of money incomes in 1974, or to control public sector pay in 1979–80. (It has also been claimed that an improved performance since the war is hardly if at all attributable to public policy.)

Now, while I shall offer examples of the kind of policy that can make matters worse, it is my view that it is possible to exaggerate the significance of all this, and that the climate of opinion in economics has swung much too far in the cautionary direction. (Of course, it could be argued with some cogency that this is always a desirable thing to do because of the exaggerated claims of politicians.) In practice, public policy has not been as bad as all that, and where it has (as in much of the 1970s) the reasons do not appear to have been economic. More to the point there is considerable scope on the basis of existing knowledge for improved policy. It is important to distinguish here between two situations in which active policy could be harmful compared with no policy depending on whether or not a better policy was available. Good macroeconomic policies may exist but not be used because the government does not know about them, or has other ends to pursue with which they are incompatible, or even because it is wilfully stupid. While this may discourage the economist, it should not necessarily cause him to doubt the efficacy of the policies as such. It should also be added that it is not helpful to go to the other extreme and, instead of insisting on the mistakes of policy, interpret all public sector activity as optimal by definition. Behaviour may no more reveal government preferences than it does the preferences of the single individual. At either level mistakes may be made; and even if the revealed preferences are taken to be

those of the government, it is always possible and sometimes helpful to define social welfare in other ways independent of the government, so as to interpret public policy as sub-optimal relative to it.

This book is largely theoretical and therefore will not devote much space to the description of government and governmental institutions, or to the study of actual policy making. It will also take as given the relevant economic theory and econometric estimates of macroeconomic models. This is chiefly a matter of division of labour, and we refer appropriately to the further reading that a student of policy must pursue. At a more fundamental level, however, it should be realised that our neglect of econometrics is rather unsatisfactory; or more correctly the econometric neglect of policy is unsatisfactory. What I mean by this is that it is crucial to public policy to have some knowledge of the real behaviour, present position, and likely future position of the economy. In large part this is a matter of econometric estimation, and what the engineers call filtering and prediction. What we need to know is a function of what policies we wish to pursue, while our policies will be a function of what we know. It needs to be shown that it is possible to separate knowledge from the policies or the econometrics from the control. In many cases such a division can be shown to be valid; but it would be better still if the general rule in economics was for the two to appear together in the same textbook as indeed does happen in control engineering. The theory of economic policy would be partly a theory of the optimal acquisition and analysis of information on how the economy works, and partly a theory of the use of that information to improve the performance of the economy. At the moment it is not, and in large part we shall take the first task, of data acquisition, as done.

Having said that we shall take the task of formulation and estimation of the macroeconomic model as given, this should not be taken to mean that we ignore these and certain closely connected topics entirely. In Chapter 11 we discuss the problem of forecasting both in theory and in practice. We also show how the forecasting and control problems are related to each other. In various places in the book we discuss the consequences of the kind of risk and uncertainty due to errors in the specification and estimation of an economic model and more generally how lack of information and imperfect forecasting limit what the policy maker can do. The

crucial point to understand is that imperfect information is a constraint on policy and on average involves the decision maker in costs relative to the (notional) situation of perfect information. Optimal policies under imperfect information will differ from those under perfect information and, of course, their consequences will be imperfectly predictable. Moreover, in general, an attempt to remove risk and uncertainty or to behave as if it did not exist will be sub-optimal. A serious policy problem in the UK is to convince politicians and officials of these simple points and to accommodate parliamentary government to them. It is optimal to make some mistakes, and Members of Parliament should devote some effort to criticising Ministers who use their energies chiefly to avoid error, and not simply concentrate on the errors that occur. At the same time, Ministers should be less cowardly and be prepared to defend policies on the ground that they were still correct in the *ex ante* circumstances in which the decision was made, even if they go wrong in the sense of having undesirable consequences.

A weakness of the economics that we teach at universities and to civil servants is its lack of emphasis on risk and uncertainty. This is partly because these are difficult issues and partly because what we have to say tends to be negative rather than positive. Nevertheless macroeconomics which is non-stochastic can be seriously misleading. One objective of this book is to show that it is possible to discuss some relevant problems in an elementary (if not too rigorous) way suitable for undergraduate teaching.

The literature on economic policy makes a great deal of fuss about discretionary versus automatic policy making. It is likely that the significance of this distinction is exaggerated relating as it does chiefly to the length of time for which particular decisions are intended to last. We have already remarked that in an economy such as ours, the assumption of a government whose macroeconomic impact is zero has little relevance in theory or in practice. The government exists and in general has an impact whether or not it consciously pursues macroeconomic objectives. Given the existence of government activity, and that it takes place in circumstances and relative to preferences which are constantly changing, it is difficult to see either that it is or should be constant or be a constant ratio to national income. The notion that public expenditure and taxation decisions can be fixed for an indefinitely long period of time (or even that the principles can be fixed

according to which they are decided) is surely rather far-fetched either as a matter of fact or as an objective to aim at. There is nothing general in economic theory or economic research that suggests that this is the case or should be the case. Even the economists of the new right have a policy of public sector change (albeit in a downward direction); and in favoured fields such as military expenditure they certainly favour the adjustment of government activity to circumstances. Where they advocate the setting of monetary targets, these are specified within a broad band, and are for the medium term at the longest.

Those other economists who favour long-range planning do not mean by this the taking of once-for-all decisions, but rather the attempt to take some account of the possible long-term consequences of decisions. This does not mean, of course, that long-term commitments are bad and that frequent changes in policy are good. It does mean that *sometimes* long-term commitments may be bad, and sometimes it may be valuable to introduce some flexibility into a policy even at a cost in order to obtain some other benefit or avoid some larger cost.

If public policy exists and has a macroeconomic impact, the question must be asked whether and how it can be modified to improve macroeconomic performance (or at least a remarkable degree of intellectual restraint is involved in not asking such a question). Now, it is perfectly possible that the answer is that no improvement is possible in the present state of economic knowledge or in the foreseeable future. This should not be a matter of faith, but of theory and fact, and certainly some economists have come to that conclusion. All that can be added is that others, the majority, reject such a conclusion as too pessimistic and consider that consciously directed macroeconomic policy is feasible and desirable. The point at issue here, however, is not quite that, but whether macroeconomic decisions can and should be taken effectively once and for all and therefore be non-discretionary. Presumably, what this would mean is that the government would take a view of the likely course of the economy from now to an indefinite future in the absence of macroeconomic policy, compare it with the best feasible alternative state and then take policy decisions from now to an indefinite future to bring the actual into line with the best available.

It should be noted immediately that even if this were the correct thing to do, the once-for-all decision would not necessarily be a

simple one such as to let public expenditure or the quantity of money rise at $x\%$ per annum, or to let taxes be a constant proportion of all incomes above the lowest quartile. It could involve a very complicated tax and expenditure package or, more to the point, it could be in the form of a rule of tax changes (for example for every percentage point that the national income exceeds $y\%$ raise tax rates by $z\%$) which itself would produce a complicated tax package. Even that, however, does not get us to the heart of the matter which is that, whatever is decided beforehand, it is a matter of discretion to follow through with that decision at the moment it is supposed to take place. As a matter of pure logic the decision not to do anything or to go ahead with what we had planned is itself a matter of discretion.

Thus, some economists hold that the chief task of macroeconomic policy is to make occasional far-reaching structural changes which will assist the automatic working of the system but not replace it. Others, while not going that far, would limit policy to correcting only major deviations from the desired state of affairs. A third group would see policy aiming to correct many if not all deviations; to engage, that is, in 'fine tuning' of the economy. There may also be a divergence between those who emphasise the need to create an environment in which the market mechanism can work to best advantage, including the strengthening of that mechanism, and those who argue that macroeconomic policy must interfere with and limit the market mechanism so that other methods of resource allocation must be introduced. These are interesting and important arguments, but they do not turn on discretion versus rules in any meaningful sense.

The issue is not one of discretion but of the principles of decision making and the nature of particular decisions, of how flexible they should be, and of how frequently they should be re-examined. Even change itself is a matter of definition. If tax rates are fixed, tax revenues will be variable, but the distinction between rates and revenues can hardly be one involving the fundamental philosophy of public policy making. It may be neither rates nor revenues that are fixed, but the rule or rules that determine them. But why should fixed rules be regarded as fundamental and, anyway, what is a fixed rule? Is it the procedure for determining taxes (for example put taxes equal to the difference between desired and actual income divided by the multiplier), or the procedure for determining this

procedure (for example construct a model, posit an objective to be reached, consider all the available information and determine the correct policy accordingly)?

As time passes we accumulate knowledge in two senses. Firstly, we accumulate new observations of the economic phenomena which we are interested in. Secondly, economic theory and method itself advances. The latter may be a slow process, but as and when it happens we should surely take some account of it in our policy making. The former occurs all the time and must affect the decisions we take in a particular sense, and sometimes may even affect our policy rules. In the UK every quarter we obtain new observations of the many variables that enter into a macro-model (some of them the results of the very policies we have been pursuing). This enables us to re-estimate the equations in our model which in turn may modify, however slightly, our view of the consequences of various policies. This new information may even cause us to doubt the very models themselves and lead us to examine new ones. At the same time we use the latest information to predict the course of the economy over the next year or two. All of this may lead us to leave policy as it is to work automatically or as it was previously determined. Alternatively, we may be led to a particular policy change, but of the sort we have been pursuing heretofore. Yet another possibility is that we may change the rules of policy making themselves, using entirely new policies or existing policies quantitatively in a significantly different way. These changes (or lack of changes) may be the consequences of rules or principles at a higher level. Thus, they are simultaneously discretionary and automatic. It seems to me, therefore, that the debate about a framework for policy has been slightly misleading. The issue is the use of rules or procedures versus *ad hoc* and arbitrary behaviour. The former are not identical with no change, and the latter is not the same as discretionary behaviour. If by 'discretionary' one means policy that is unjustifiable, *ad hoc*, or irrational (and plenty of public policy is all of those things), discretionary policy will be rejected by everyone. But if one means policy which adjusts to changing circumstances and is decided by policy makers, then all policy must be discretionary.

There is one other aspect of the accumulation of knowledge which is important, and, while appreciated long ago, is receiving particular attention at the moment. It is that knowledge of or beliefs