

On the Character of Macroeconomics, Macroeconomic Policy and Econometrics: The Need for Another Macroeconomic Policy Conception *

1. Introduction

Ever since its development in the nineteen thirties modern macroeconomics¹ has been strongly policy-oriented. In the fifties and sixties a rather general consensus on the objectives and conduct of macroeconomic policy emerged. The resultant macroeconomic policy conception, which we will term "traditional", was based on a shared view of the character and main conclusions of macroeconomics and on a *communis opinio* about the usefulness of macroeconomic models for macroeconomic policy issues.² The aims of this policy conception can be neatly summarised by paraphrasing Modigliani: "The economy need to be stabilized, can be stabilized and should be stabilized" (Modigliani, 1977).

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¹ In this paper macroeconomics will be simply defined as that branch of economics which deals with the economy as a whole. Therefore, general equilibrium theory may be seen as a part of macroeconomics. However, generally, macroeconomics is concerned with relations between aggregate variables. Although macroeconomics in our definition already existed long before Keynes' *General Theory of Employment, Interest and Money*, the publication of this book in 1936 marked the start of modern macroeconomics.

² For an identical view see ROGERSON (1987), p. 129. Of course, this does not imply that there were no dissenting views (recall for instance the criticisms of the Austrian school of economics with Hayek and Lachmann as important representatives and the position of Milton Friedman).

In the fifties and sixties policies in line with this "traditional" policy conception seemed to work well as most economies showed unprecedented rates of economic growth with only moderate rates of inflation. With the slowdown of economic activity in the seventies, which could not be remedied and even seemed to be aggravated by "traditional" policies, macroeconomics and macroeconometrics came under attack. Consequently, the "traditional" policy conception lost its solid reputation. More "laissez faire"-type policies became popular again with the revival of the belief that market economies are fairly self-adjusting. Econometricians responded to the criticism on their profession by urging for more testing of econometric models, by trying to devise new and better testing procedures (*cf.* Hendry, 1980) and sometimes by arguing for incorporation of elements of different economic theories in econometric models.

The aim of this paper is to argue that the "traditional" policy conception was rightly challenged, although on the basis of an insufficiently grounded belief in the equilibrating tendencies in market economies. In our view, the "traditional" policy conception should be rejected for its misconception of the character of macroeconomics. This misconception led to a too pretentious claim for the possibilities of macroeconomics and macroeconomic model-building in the field of macroeconomic policy. From this point of view, many of the above mentioned responses of econometricians to attacks on the usefulness of macroeconomic model-building are unsatisfactory, because they ignore that the main argument against the usefulness of macroeconomic model-building is derived from a methodological argument concerning the character of macroeconomics. It cannot be redressed by presenting more and better testing procedures.

Furthermore, it will be contended that the possibility of important deficiencies in the functioning of market economies cannot be precluded neither on theoretical nor on empirical grounds. Although the question as to the scope and contents of a macroeconomic policy conception which is consistent with the character of macroeconomics is a difficult one, in our view such a policy conception is needed and therefore this question has to be faced.

This paper is organised as follows. In Section 2 the "traditional" policy conception will be elaborated. In Section 3 the character of macroeconomics, its inconsistency with the "traditional" policy conception and the consequent need for another macroeconomic policy conception will be dealt with. Section 4 presents a general and

preliminary outline of such a policy conception. The role of macroeconomic models in this conception will be considered separately.

2. The "traditional" view of macroeconomics and macroeconomic policy

After the publication of the *General Theory of Employment, Interest and Money* (Keynes, 1936), many economists tried to interpret Keynes' theory in their own theoretical framework. Of these economists Hicks was the most influential. His 1937 "Mr. Keynes and the Classics" aimed at showing the essentials of Keynes' theory in relation to the "classical" theory to econometricians and mathematical economists. (It was originally published in *Econometrica*.) In this paper Hicks developed the well-known IS-LM model which became the main analytical apparatus of Keynesian economics and thus largely determined the image of macroeconomics.

In the IS-LM model the whole economy is summarised in a few equations containing aggregate variables, which seemed to be measurable, for at the time of the publication of Hicks' article national income accounting was already in development. However, it is likely that the emergence of Keynesian economics gave an additional impetus to attempts at measuring economic variables (see Patinkin, 1976). With the development of statistics of the main macroeconomic variables the stage was set for pioneering econometricians like Tinbergen to estimate the macroeconomic relations.³ Gradually, economists came to believe that econometric methods provided the instruments for a quantitative knowledge of the working of the economy. Because Keynesian economic theory asserted that market economies may show persistent unemployment and because it pointed to deficient effective demand as the cause with government demand management as the cure, the application of macroeconomic models to economic policy seemed only natural. Eventually the "traditional" macroeconomic policy conception emerged.

³ As is probably well-known, there was a famous debate between Keynes and Tinbergen on the usage and methodology of econometrics. This debate with other relevant letters of Keynes and others has been reprinted in KEYNES (1973b), pp. 285-320.

Its main elements can be described as follows. Macroeconomic theory demonstrates that market economies are not or only slowly self-adjusting. Macroeconomics is considered to deal with stable relations between impersonal aggregate variables which can be estimated with econometric methods.⁴ This supplies economists and policy-makers with knowledge about the working of the economy as a whole. Tinbergen showed how this knowledge can be used to design a consistent macroeconomic policy (Tinbergen, 1967, originally published in 1956). First, policy-makers have to list their goals and represent them by quantitative variables to be included in the macroeconomic model as endogenous variables. Second, they have to develop as many instruments as goals. These instruments also have to be translated in quantitative variables and inserted into the model as exogenous variables. A consistent policy consists of formulating target values for the goals and solving the econometric model for the values of the instrument variables with which these goals can be achieved. This comes down to solving the model in "reversed" order, *i.e.* by making the variables representing the goals exogenous and the variables expressing the instruments endogenous. In this way a trial and error process in which the correct values of the instrument variables are discovered gradually can be avoided. Moreover, with this methodology the consistency of a macroeconomic policy can be ensured. If the number of goals is greater than the number of available instruments, it is usually necessary to calculate an optimal trade-off between the goals on the basis of a valuation of the attainment of different levels of the target variables.

Although at least Tinbergen was clearly aware of the limitations of this kind of policy⁵ and although the "traditional" policy conception was often not rigidly followed as policies were often shaped by other considerations as well, it had an important influence on the style of macroeconomic policy by being an accepted standard for macroeconomic policy. It contributed to the prestige of macroeconomics and econometrics and presupposed and promoted the idea of macroeconomics as a quantitative science, capable of estimating and testing its relations. The methodology of macroeconomics was considered to be very much alike the alleged methods of the natural sciences. Macroeco-

⁴ Coddington has called this the hydraulic variant of Keynesianism (*cf.* CODDINGTON, 1983).

⁵ Apart from quantitative policy TINBERGEN (1967) also distinguishes qualitative policy and reforms.

nomics was thought to offer "hard" knowledge of the economy in which detailed policy measures could be grounded with much confidence.⁶ At the height of its popularity the "traditional" policy conception aroused the pretention that macroeconomics and macroeconometrics offered the knowledge for effectively managing and even fine-tuning the economy as a whole. Due to its mechanical picture of the working of the economy the "traditional" policy conception supported a rather technical view of the conduct of macroeconomic policy (see *e.g.* optimal control theory).

Finally, it should be noted that the "traditional" policy conception is coherent. It assigns definite tasks to macroeconomics (determining the theoretical structure of macroeconomic relations and advising the politicians on the design of instruments), macroeconometrics (building a macroeconomic model and advising the politicians on the design of instruments) and politicians (choice of the goals and instruments) in a consistent way.⁷

During the sixties and early seventies policies in accordance with the flavour of the "traditional" policy conception seemed to be effective. After the disenchantment of the late seventies and early eighties this policy conception lost ground and the reputation of macroeconomics and econometrics was eroded.⁸ The view that market economies have strong equilibrating tendencies and that consequently there is little scope for a macroeconomic policy with positive effects regained ground. However, this has not produced consensus on a new coherent policy conception. On the one hand, many macroeconomists still favour a more Keynesian view of the economic process. On the other hand, many politicians opt for a market-oriented approach, while at the same time at least paying lip-service to macroeconomic models

⁶ This is especially clear from the following famous quotation from Solow: "I think that most economists feel that the short run macroeconomic theory is pretty well in hand... The basic outlines of the dominant theory have not changed in years. All that is left is the trivial job of filling in the empty boxes [the parameters to be estimated] and that will not take more than 50 years of concentrated effort at a maximum" (SOLOW, 1965, p. 146). See also HELLER (1967), p. 9 and pp. 13-15.

⁷ The "traditional" policy conception is implicitly based on the assumption that both politicians and civil servants will strictly act in the general interest. Experience and public choice theory have made clear that this is a too rosy assumption. In the following we will not deal with this problem.

⁸ See also ROGERSON (1987), pp. 129, 130.

which incorporate many Keynesian elements and therefore cannot be employed to underpin their policies.⁹

3. The character of macroeconomics and macroeconomic policy

In our view, the "traditional" policy conception could not be maintained and should not be restored, because it is based on a mistaken view of the character of macroeconomics. Not because there is clear and sufficient evidence in support of a "laissez faire" approach to macroeconomic policy. First, in this section the character of macroeconomics will be analysed, mainly inspired by the work of Keynes and Hayek (3.1). Then, it will be argued that the described character of macroeconomics is inconsistent with the "traditional" policy conception (3.2). Finally, the case for a macroeconomic policy will be considered (3.3).

3.1. *The character of macroeconomics*

Decisions on the allocation of economic resources are dependent on a great many circumstances. As especially Hayek has clearly demonstrated, one of the main features of a market economy is that it allows for the usage of all the knowledge that is dispersed over all the people participating in the market process.¹⁰ The amount of knowledge employed in the market process is always greater than any single person or group of persons (smaller than all economic subjects) can possess. The market process is a method to discover the preferences of the economic subjects and the ways they can be satisfied.¹¹ The specific outcome of the market process in terms of (amounts of) produced goods, relative prices, etc. depends on all the available knowledge and

⁹ For example, the austerity policy of the Dutch government aimed at a strengthening of the market sector can hardly, if at all, be defended with its predicted effects in the macroeconomic model FREIA-KOMPAS of the Central Planning Bureau (CPB) which are almost all adverse both in the short and intermediate run (OKKER 1987, pp. 21, 22, especially table 8.1, third column).

¹⁰ See especially HAYEK (1937, 1945). Compare also HOOUDIN and SNIPPE (1987).

¹¹ See Hayek's articles: "The Meaning of Competition" (HAYEK, 1949) and "Competition as a Discovery Procedure" (HAYEK, 1978b).

on the specific way it is distributed over all the economic subjects. Since no person can possess all this knowledge and know its distribution, it is impossible to predict a specific outcome of the market process. Consequently macroeconomics, which studies the economy as a whole, has to deal with a complex system, *i.e.* a system the development of which is determined by the interaction of so many variables,¹² that many of the values of these variables cannot be known. Furthermore, as a result of learning and creativity of many individuals the amount of knowledge and the pattern of its distribution are constantly changing over time in a way that cannot be known in any detail. This adds enormously to the complexity of the system and makes it really dynamic and unpredictable in detail. There is a clear distinction between macroeconomics and most of the natural sciences where many phenomena can be explained with relatively few, observable variables which can be more easily isolated and manipulated in experiments.¹³

What sort of theoretical knowledge can be obtained about the working of a system that is complex in the described sense? This is the methodological challenge to macroeconomics. This challenge calls for a different approach from the methodology of the natural sciences. Macroeconomics cannot circumvent the complexity of the economic system through application of the law of great numbers. This law could only be applied if the circumstances in which (large groups of) economic subjects are making their decisions would be the same on average, only allowing for completely random disturbances. However, to assume this is in conflict with the essence of a market economy in which the result of the economic process is determined by the specific contents of the many relations between the economic subjects and by the particular distribution of the available knowledge over them. Therefore, it has to be emphasised that macroeconomics cannot provide

¹² See HAYEK (1967a, 1967b). It is not easy to present a general definition of complexity. Hayek is clearly aware of this but he thinks it is possible to measure the complexity of an abstract pattern: "The distinction between simplicity and complexity raises considerable philosophical difficulties when applied to statements. But there seems to exist a fairly easy and adequate way to measure the degree of complexity of different kinds of abstract patterns. The minimum number of elements of which an instance of the pattern must consist in order to exhibit all the characteristic attributes of the class of patterns in question appears to provide an unambiguous criterium" (HAYEK, 1976a, p. 25).

¹³ Exceptions perhaps being geology, meteorology and oceanography which resemble macroeconomics in a higher degree in the complexity of the systems which they describe. It should be stressed that the difference in complexity and manageability between macroeconomic phenomena and most of the phenomena explained by the natural sciences is relative rather than principal. However, this relative difference is so great that in our view it should have important methodological consequences.

knowledge about the specific course of the economy as a whole. The importance of this negative knowledge should not be underestimated, but macroeconomics is capable of providing positive knowledge as well. Macroeconomic theory should aim at revealing the general mechanisms underlying the working of the economy as a whole. These general mechanisms cannot be derived by an integration of analyses of parts of the economy in isolation, for these analyses have to assume as given some of the very factors that macroeconomics has to explain, for instance income (*cf.* Keynes 1936, p. xxxii). By neglecting this, one falls victim to the so called fallacy of composition. Therefore, macroeconomics is a subject of its own *beside* microeconomics.¹⁴

Given its necessarily incomplete knowledge, macroeconomic theories should only focus on *abstract* relations which prevail independently of all the specific circumstances in the economy.¹⁵ This only enables macroeconomic theory to analyse very general patterns allowing for a broad range of specific outcomes. Macroeconomic theory has, so to speak, to be concerned with the laws of the economic process in the form of the *kind* of results this process produces instead of with specific outcomes of the economic process in the course of time. Keynes' *General Theory* is a good example in this context, because it shows why a market economy does not automatically produce full employment. It does not tell what the level of employment will be at a specific moment. This would require much additional concrete information.

The falsifiability of macroeconomic theories is inevitably restricted. The application of econometrics cannot yield clear conclusions about the tenability of macroeconomic theories because due to complexity these have to be so general that no easily empirically testable or falsifiable statements can logically be derived from them (*cf.* Klant, 1985). This is only possible after the formulation of additional hypotheses which amount to a further specification of the theory and/or under the *ceteris paribus* assumption. However, this does not solve the problem for it cannot be ascertained whether an unfavourable testing result was not due to the choice of wrong additional hypotheses and/or

¹⁴ For an elaboration of this point and its relation to the quest for microfoundations for macroeconomics see HOOGDUIN and SNIPPE (1987).

¹⁵ Although the usage of mathematics may be very fruitful, if not necessary, in the study of complex systems, some mathematical techniques can only be fruitfully employed on the assumption that some variables do not change when others do (this applies for instance to the taking of partial derivatives). This assumption may be unjustified in a complex system with many interdependencies. Therefore, some mathematical techniques may not always be appropriate for the analysis of a complex system.

to an unjustified *ceteris paribus* assumption. All the "ceteris" that have to remain "paribus" cannot be observed.

To derive relations macroeconomic theory has to abstract from many details. However, a complex system cannot be described using only one method of abstraction, using only one (abstract) model. Analysis of different aspects of its functioning requires focusing on different abstract relations on the basis of an abstraction from other details. A complex system has, as it were, to be approached from different angles.¹⁶

Keynes, the father of modern macroeconomics, viewed macroeconomics, in line with our description, as a method to deal with complexity.¹⁷ He stressed the abstract nature of macroeconomic relations and emphasised the importance of the correct choice of an abstract macroeconomic model, which to some extent he considered to be an art.¹⁸ Moreover, he drew attention to the fact that the task of macroeconomic theory is to develop an (abstract) *analytical apparatus* (a box of tools) which can be used to derive correct conclusions about concrete economic phenomena. Macroeconomics might be seen as a specific branch of logic.¹⁹ It should be noted that this logic includes the theory of logical probability,²⁰ which allows for assertions not being certain but only probable on the given, incomplete knowledge. Correct macroeconomic conclusions need not be certain. Very often they can only be given definite probability in view of the incomplete knowledge on which they have to be based. New information, obtained in the course of time or supplied by others, may change the conclusions an economist

¹⁶ See also DOW and DOW (1985), pp. 61, 62.

¹⁷ This is especially clear from chapter 18 ("The General Theory of Employment Re-Statement") of the *General Theory*. See also KREGEL (1976), SNIPPE (1987a, b) and HOOGDUIN and SNIPPE (1987).

¹⁸ "Economics is a science of thinking in terms of models joined to the art of choosing models which are relevant to the contemporary world. It is compelled to be this, because, unlike the typical natural science, the material to which it is applied is, in too many respects, not homogeneous through time" (KEYNES, 1973b, pp. 296, 297). For economics as an art see also HAYEK (1967b), p. 8.

¹⁹ "It seems to me that economics is a branch of logic, a way of thinking; and that you [Harrod] do not repel sufficiently firmly attempts *à la* Schultz to turn it into a pseudo-natural-science" (KEYNES, 1973b, p. 296) and "The object of a model is to segregate the semi-permanent or relatively constant factors from those which are transitory or fluctuating so as to develop a logical way of thinking about the latter and of understanding the time sequences to which they give rise in particular cases" (KEYNES, 1973b, pp. 296, 297).

²⁰ Keynes developed his logical theory of probability in *A Treatise on Probability* (KEYNES, 1921). On Keynes' theory of probability see *e.g.* BATEMAN (1987), CARABELLI (1984), LAWSON (1985) and HOOGDUIN (1987). Carabelli also emphasises that for Keynes the theory of probability is a part of logic (CARABELLI, 1985, p. 169).

has to draw on a given problem. Because no one can claim to have all information, conclusions in macroeconomics should be derived and adapted in a continuous "debate" between economists.²¹ This character of macroeconomics implies that it is likely impossible to refute a theory finally. Rather, it is possible to judge it more probable than a competing theory, at least for the moment.²²

To derive abstract relations with respect to the economy as a whole, following Keynes, it is appropriate to make use of aggregates. However, macroeconomists should be aware, as Keynes clearly was, that these aggregates are meant to represent variables of importance for the explanation of the working of the economy as a whole without it being necessary that these theoretical variables can be measured in a consistent way over time or can be measured at all. Furthermore, the aggregation problem has proved to be very difficult, almost unsolvable. For an application of aggregates in abstract reasoning a solution of the aggregation problem is not necessary. However, this problem is a major obstacle to giving these aggregates a reliable empirical content over longer time periods.

The abstract causal relations of macroeconomic theory summarise a great variety of specific relations. As we have seen above, due to the complexity of the economic system, macroeconomic theory cannot be more specific about these relations. In other words, the coefficients of these relations are changing over time and the macroeconomic relations cannot be quantitatively estimated with much confidence; the economic process is too less homogeneous over time to allow this.²³ To explain

²¹ This account of the character of macroeconomics points to a methodology along the lines of McCLOSKEY (1983).

²² "The object of our analysis is, not to provide a machine, or method of blind manipulation, which will furnish an infallible answer, but to provide ourselves with an organised and orderly method of thinking out particular problems; and, after we have reached a provisional conclusion by isolating the complicating factors one by one, we then have to go back on ourselves and allow, as well as we can, for the probable interactions of the factors amongst themselves. This is the nature of economic thinking" (KEYNES, 1936, p. 297) and "In economics you cannot convict your opponent of error — you can only convince him of it" (KEYNES, 1973a, p. 470). It is interesting to note that Hayek expressed a similar view: "All that the theory of the social sciences attempts is to provide a technique of reasoning which assists us in connecting individual facts, but which like logic or mathematics is not about the facts" (HAYEK, 1943, p. 73).

²³ This was the main point at issue in the above mentioned debate between Keynes and Tinbergen (see note 3 above): "For the main *prima facie* objection to the application of the method of multiple correlation to complex economic problems lies in the apparent lack of any adequate degree of uniformity in the environment" (KEYNES, 1973b, p. 316). The agreement between Keynes and Hayek on this issue is clear from the following statement of Hayek: "... the endeavour to become more 'scientific' by further narrowing down our formulae may well be a waste of effort; to strive for this in some subjects such as economics has often led to the illegitimate assumption of constants where in fact we have no right to assume the factors in question to be constant" (HAYEK, 1976b, p. 16). Note that the point about the instability of macroeconomic relations can be made with respect to *all* macroeconomic models, large or small, reduced form or structural models.

this further, it should be noted that the complexity of the economic system is closely associated with the fact that economic subjects (as well as the economists, see above) have to make their decisions in the face of uncertainty. Not only is information dispersed, the aggregate amount of knowledge of all economic subjects with respect to the effects of their decisions is inevitably also incomplete because these decisions are future-oriented. Consequently, people have to base their decisions on expectations about their future effects. Generally, some expectations will be based on correct predictions, but others will be based on wrong ones. This leads to redistributions of wealth between economic subjects and in the likely event that different people show different behaviour this implies instability of the macroeconomic relations.

Moreover, as expectations are determinants of the macroeconomic relations, these relations will change when expectations change. Expectations are liable to change in the course of time when people obtain new information making other expectations more probable than the previous ones.²⁴ Furthermore, even if people do not obtain new information they may change their expectations because of a revision of the interpretation of their environment. Finally, the emergence of knowledge of new possibilities in the course of time may change preferences, technical relations, etc. All these factors make for the instability of macroeconomic relations.

The fact that expectations are important in macroeconomic relations presents great problems for the measurement of these relations. Expectations are not directly observable, neither is it possible to derive their contents from observable variables completely. For in the formation of expectations more information is used than can be known to the theoretician. Moreover, the relation between information and the contents of expectations is not mechanical, it presupposes a scheme of interpretation. Interpretation schemes are not observable, nor is there

²⁴ The so called "Lucas-critique" (LUCAS, 1976) is a specific consequence of this point. In this case, the new information people get is that of a new government policy. Note that Hicks was already making a similar point in 1936 in his first review of Keynes' *General Theory*: "It is unrealistic to assume that an important change in data — say the introduction or extension of a public works policy — will leave expectations unchanged, even immediately. But this generally means only that there is a psychological unknown, affecting the magnitude of the impact effect. As more time is allowed, more and more scope is allowed for such variations, both in degree and kind. We must not expect the most elaborate economic analysis to enable us to see very far ahead" (HICKS, 1936, p. 88).

any theoretical reason to expect them to be identical to a given macroeconomic theory.²⁵

Consideration of the role of expectations formation finally takes us to a more general point. Macroeconomic phenomena are ultimately the result of human behaviour. They are shaped by intentions, motivations and beliefs of people like the theoretician himself.²⁶ This is an important difference with the natural sciences where the studied phenomena are not the result of purposeful actions. This character of macroeconomics implies that macroeconomic phenomena cannot be fully understood without paying attention to human beliefs, motivations and intentions. It also implies that macroeconomic phenomena can be influenced by events which act on human beliefs, for instance by the emergence of a new macroeconomic theory. Understanding of the purposeful dimension of economic phenomena cannot be obtained with econometric methods. Introspection and a study of the cultural and historical²⁷ background (including the existing institutions) cannot be missed, in particular in the practical application of macroeconomics where the abstract theoretical relations have to be supplemented with as much specific information as can be obtained.

3.2. *Macroeconomics and its inconsistency with the "traditional" policy conception*

Macroeconomics, as we have just characterised it, cannot be reconciled with the view of macroeconomics and the central role for macroeconomic models in the "traditional" policy conception. Let us briefly summarise our argument. The "traditional" policy conception assumes that macroeconomics is capable of providing reliable quantita-

²⁵ The rational expectations hypothesis can, in our view, not claim to be a general theory of rational expectations formation. It is an assumption or elegant working hypothesis which is unlikely to be reasonable for all expectations that underlie macroeconomic relations. This conclusion follows from an examination of rational expectations formation under uncertainty. We cannot elaborate on this conclusion here for lack of space. For those interested, we refer to VAN DER FELTZ and HOOGDUIN (1987).

²⁶ "I might have added that it [economics] deals with motives, expectations, psychological uncertainties. One has to be constantly on guard against treating the material as constant and homogeneous. It is as though the fall of the apple to the ground depended on the apple's motives, on whether it is worth while falling to the ground, and whether the ground wanted the apple to fall, and on mistaken calculations on the part of the apple as to how far it was from the centre of the earth" (KEYNES, 1973b, p. 300).

²⁷ Hicks has even stated: "As economics pushes on beyond "statics", it becomes less like science, and more like history" (HICKS, 1979, p. xi).

tive knowledge about the course of the economy as a whole on the basis of a macroeconomic model. This would make prediction and effective steering of the economy possible. In our view of macroeconomics, the "traditional" policy conception pretends to have far more knowledge about the economy as a whole than is possible.²⁸ In our conception, macroeconomic theory should deal with abstract relations which can not always be estimated quantitatively and, if they can, they are likely to be unstable considered over time periods relevant for estimation purposes. Predictions of the course of the economic process can often not be made with great confidence. The "traditional" policy conception assumes too much that macroeconomics is akin to the natural sciences. To understand a complex system like the economy macroeconomics cannot restrict itself to one model, it should employ different models to different problems. In our view, an essential aspect of macroeconomics is to take account of the dependence of the course of the economic process on human motivations, intentions and beliefs. The "traditional" policy conception too much neglects this aspect of macroeconomics and therefore also largely ignores the role of introspection.

3.3. *The case for a macroeconomic policy*

As we have explained above, the "traditional" policy conception assumes that market economies need a macroeconomic policy in order to be stabilised and also that they can be stabilised. Recall that in the nineteen seventies it was challenged on this ground. What conclusions can be drawn on the need for a macroeconomic policy on the basis of our view of macroeconomics?

Our characterisation of macroeconomics is rather concerned with the choice for a certain methodology than with the choice for a specific macroeconomic theory. This methodology is mainly inspired by the work of Keynes and Hayek who held radically different opinions on the working of the economy. Essential part of the character of macroeconomics is the very fact that macroeconomic theories cannot easily be rejected. Competitive theories with different visions on the working of the economy leading to different specific policy advices may continue to exist side by side.

²⁸ Hayek forcefully made this point in his Nobel prize lecture (HAYEK, 1978a).

If a broad view is taken, it may be said that since the beginning of economic science, a distinction can be made between theories which stress the strength and beneficial effects of unhampered market forces and theories which emphasise the deficiencies in the working of market forces.²⁹ The former theories tend to favour more restraint by government, while the latter theories support a more activist government policy. Modern representatives of the first branch of economic theories are (with all their differences) neo-Austrians, monetarists and new classicals and modern representatives of the other branch can be found in all the different shades of Keynesianism. The influence of the two branches of economic theory on economy policy is likely to fluctuate over time partly depending on the (most) recent economic experience. A balance between the two types of theories has continuously to be sought on the basis of new evidence and new insights. The choice of the most plausible balance is inevitably an uncertain one, to be based on (the probability of) a belief obtained via the weighting of available knowledge (including the results of econometric testing).

Although we do not intend to argue for a specific macroeconomic theory, we do think there is a theoretical argument in favour of the view that adverse market outcomes, not or slowly corrected, cannot be excluded. The belief that market economies always show strong equilibrating tendencies is merely based on an assumption, not on theoretical arguments that show how equilibria ultimately result from rational behaviour in disequilibrium situations.³⁰ The Keynesian belief that market economies do not always tend to full employment equilibrium automatically and quickly can be grounded in the theory of decision making under uncertainty. Moreover, it is more general and thus more probable *a priori*.

There is also an empirical argument in favour of the practical relevance of the Keynesian belief. The belief in strong equilibrating market forces requires that markets can function perfectly. In almost all countries there are important frictions in the working of markets, in the working of labour markets in particular. These frictions may have important macroeconomic consequences.³¹ Although it might be said that the best policy is to try to remove these frictions themselves,³² in

²⁹ See GREENWALD and STIGLITZ (1987) for a similar view.

³⁰ This point was already made by Hayek in 1937 and repeated in 1945 (HAYEK, 1937, pp. 45, 50, 51 and HAYEK, 1945, p. 91).

³¹ See e.g. BARRO and GROSSMAN (1976) and MALINVAUD (1977, 1980).

³² The question of whether these frictions can be removed in principle or whether they are inherent in market economies and the question of whether their removal would be a sufficient condition for the achievement of full employment are subject to debate among Keynesians.

the context of macroeconomic policy they can be taken as given as long as they exist. Moreover, most industrialised economies are faced with unemployment problems which show too much persistency to justify a belief in the working of strong equilibrating market forces (see also Blinder, 1987 and Blanchard and Summers, 1986).

Therefore, it can be concluded that it is sensible to believe that there is scope for a macroeconomic policy. The question we have to address is how to conduct such a policy and what pretence can be claimed for it, given the character of macroeconomics defended here.

4. Macroeconomics and the distinctive features of another macroeconomic policy conception

As we have only dealt with the general character of macroeconomics, in contrast to the methodology underlying the macroeconomics of the "traditional" policy conception, we can only treat the general features of a macroeconomic policy conception consistent with the presented character of macroeconomics. In this, we will mainly focus on the features which distinguish this policy conception from the "traditional" one. We will rather focus on the differences in style and points of emphasis than on differences in the specific contents of macroeconomic policies. The latter is not very sensible anyway, because from the description of the character of macroeconomics it is clear that the specific contents of a policy has to be based on the choice of an (abstract) economic model most appropriate to the particular problem at hand. However, the more general principles of macroeconomic policy can be assumed to be more persistent. The continuity and predictability of macroeconomic policy has to be found in the adherence to these general principles. In Section 4.1 a preliminary outline of some general principles of another macroeconomic policy conception will be presented. Section 4.2 briefly considers the role of econometric model-building in this macroeconomic policy conception.

4.1. *Outline of another macroeconomic policy conception*

It immediately follows from the character of macroeconomics that macroeconomic policy should be modest in its claims. Macroeconomics cannot provide detailed knowledge about the outcome of the economic process. In fact, one of the most important elements of a macroeconomic policy conception should be to stress the limitations of the possibilities to manage the economy in great detail.

Further, it should be realised that any policy has an uncertain outcome, for macroeconomics can only supply us with (a necessarily incomplete series of) more or less probable outcomes. Therefore, success cannot be guaranteed and risks have to be taken because they cannot be avoided by any means given the incompleteness of the available information. An optimal policy cannot be fully calculated in advance on the basis of a macroeconomic model, as is sometimes supposed in the "traditional" policy conception. It is presumptuous to assume that there cannot be learned from the experience in the execution of policy measures. The development of the best policy is a trial and error process. The optimal policy cannot be fully designed, it has largely to be discovered in practice.

Although this implies the usage of discretion in the conduct of economic policy, this discretion should be employed carefully and in a definite manner. To explain this it should be noted that the best way to reduce the unavoidable uncertainty in the economic process is to sustain an environment that is as stable as possible. Institutions, norms, rules (of thumb and of law) have the very function of conveying information about what can be expected in certain *kinds* of circumstances, *i.e.* they have often a rather general character. Given the lack of knowledge about the details of economic circumstances, macroeconomic policy should primarily be directed to influencing general economic conditions and the economic climate in which decisions have to be made rather than to influencing these decisions in any detail (*cf.* Hayek 1967b, p. 19). Discretion should, therefore, be used to find the institutions, norms and rules that are most appropriate to the changing economic conditions and to the realisation of the goals of macroeconomic policy which cannot be formulated in precise figures. Of course, there exists a certain tension between the function of institutions to create predictability which requires their continuity and the usage of discretion to change them. However, we can only repeat that it is not possible to "calculate" the optimal balance between continuity and discretionary change of

institutions fully in advance, nor can it be assumed that this balance will be constant over time. It has to be discovered. In trying to find the correct balance, unfortunately the making of mistakes cannot be excluded. Finding the correct balance has something of an art. The conduct of macroeconomic policy cannot be a completely technical affair. It is important for a policy-maker to have a good intuition.

In "normal" conditions it is likely to be preferable to change institutions, rules, etc. only gradually and one by one, certainly not all at the same time. However, radical changes in the economic environment or great economic disturbances cannot be excluded to happen. These may justify the consideration of a more comprehensive usage of discretion.

Economic policy as an ongoing learning process requires a continuous evaluation of the results of policy measures, of the changes in economic conditions, additional information and the development of macroeconomic theory. Therefore, the making of macroeconomic policy necessitates a continuous debate between economists and policy-makers. A sharp distinction between them should be avoided, for this might seriously harm the effectiveness of macroeconomic policy.

Finally, the prominence of the "traditional" policy conception has led to the underdevelopment and underutilisation of some instruments that are potentially available for policy objectives and which are perfectly consistent with the character of macroeconomic knowledge. The "traditional" policy conception is based on a too mechanical view of macroeconomics and consequently it undervalues the development and applicability of instruments directed to human beliefs and motivations, such as the persuasion of economic subjects of the desirability of certain behaviour,³³ distribution of information and building of confidence. A macroeconomic policy conception should allow for the development and usage of these kinds of instruments, although of course not in all situations spectacular results may be expected from their application.

³³ For the importance of persuasion as an element of economic policy, see CARABELLI (1985), pp. 173-176.

4.2. *Macroeconometric models and macroeconometric policy*

Macroeconometric models cannot have as dominant a role in our macroeconomic policy conception, as they have in the "traditional" one. We have argued that the character of macroeconomics implies that competing macroeconomic theories continue to exist. Policy-makers have to reflect on the working of the economy and have to select a theoretical framework which they think is most plausible for the problem at hand. A macroeconometric model can only be employed for economic policy purposes after the consistency of the view of the working of the economy incorporated in such a model and the theoretical view of the policy-makers has been established. Macroeconometric models which contain no clear theoretical view, for instance because only by making the model very hybrid and/or by introducing *ad hoc* elements statistically satisfactory estimation results could be obtained, should not be used. A macroeconometric model can only be used to describe the past and present conditions of the economy,³⁴ provided that apart from the test for "theoretical consistency", it has also passed statistical testing procedures, in particular for structural breaks. A macroeconometric model satisfying both the theoretical and statistical tests may supply us with a feeling for the order of magnitude of important economic variables in the present conditions, no more and no less. However, given the character of macroeconomics the probability that a satisfactory macroeconometric model can be found is not high. Therefore, an analysis of the available information with simpler statistical techniques as well as studies of the historical and institutional background of the economy should mainly be used to create a picture of the present state of the economy.

When it comes to the development of a macroeconomic policy, it has to be realised that many macroeconomic relations are unlikely to be stable. This is especially relevant when new policies or the change of existing institutions or rules are contemplated. Moreover, macroeconometric models are ill-equipped to deal with policies aimed at influencing human motivations and beliefs. All in all macroeconometric models can often not be employed with much confidence for the prediction of the effects of policy measures. This does not mean that such predictions should not be made, only that they should be used very carefully and

³⁴ Although often, "it is not a very lucid way of describing the past" (KEYNES, 1973b, p. 315).

not as the sole or even an important criterium for decisions on economic policy. Detailed predictions have no value; predictions should only aim at indicating a direction of change. The sensitivity of the predictions for different assumptions concerning the path of development of exogenous variables should be extensively tested and always clearly mentioned. Different macroeconometric models, built by different institutions, may be used to judge the robustness of the predictions.³⁵

Our overall conclusion is that macroeconometric models have mainly a heuristic role in providing assistance in the process of discovery of the most appropriate macroeconomic policies and institutions. More important elements of an effective macroeconomic policy are a study of the results of theoretical reflections on the working of economies as a whole, learning from experience with the execution of macroeconomic policies, consciousness of the institutional and historical background of the economy under consideration, good judgement and intuition in the choice of a macroeconomic model that is most relevant to the policy problem at hand, and a good presentation and explanation of policy measures. Research with respect to the further elaboration of a macroeconomic policy conception can likely be more fruitfully devoted to these latter elements which were relatively undervalued in the "traditional" policy conception than to the further improvement of already well-developed econometric techniques which cannot change the basic insight that macroeconomic relations are liable to instability and consequently macroeconometric models have a restricted usefulness.

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³⁵ In his debate with Keynes, Tinbergen already advocated competition between model builders: "... would it not be healthy if a number of investigators, in mutual competition so to speak, would try to get the most satisfactory results? I always see my work as a first step in such competition" (KEYNES, 1973b, p. 293).

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