

PART ONE

INTRODUCTION

Chapter I

The Nature and Scope of Macroeconomics

INTRODUCTION

^{Meaning} The term 'macro' was first used in economics by Ragner Frisch in 1933. But as a methodological approach to economic problems, it originated with the Mercantilists in the 16th and 17th centuries. They were concerned with the economic system as a whole. In the 18th century, the physiocrats adopted it in their *Table Economique* to show the 'circulation of wealth' (i.e., the net product) among the three classes represented by farmers, landowners and the sterile class. Malthus, Sismondi and Marx in the 19th century dealt with macro-economic problems. Walras, Wicksell and Fisher were the modern contributors to the development of macroeconomic analysis before Keynes. Certain economists, like Cassel, Marshall, Pigou, Robertson, Hayek and Hawtrey, developed a theory of money and general prices in the decade following the First World War. But credit goes to Keynes who finally developed a general theory of income, output and employment in the wake of the Great Depression.

Nature of Macroeconomics

Macroeconomics¹ is the study of aggregates or averages covering the entire economy, such as total employment, national income, national output, total investment, total consumption, total savings, aggregate supply, aggregate demand, and general price level, wage level and cost structure. In other words, it is aggregative economics which examines the interrelations among the various aggregates, their determination and causes of fluctuations in them. Thus in the words of Professor Ackley: "Macroeconomics deals with economic affairs 'in the large', it concerns the overall dimensions of economic life. It looks at the total size and shape and functioning of the "elephant" of economic experience, rather than working of articulation or dimensions of the individual parts. It studies the character of the forest.

¹From the Greek word *makros*, meaning 'large'.

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independently of the trees which compose it."²
Macroeconomics is also known as the theory of income and employment, or simply income analysis. It is concerned with the problems of unemployment, economic fluctuations, inflation or deflation, international trade and economic growth. It is the study of the causes of unemployment, and the various determinants of employment. In the field of business cycles, it concerns itself with the effect of investment on total output, total income, and aggregate employment. In the monetary sphere it studies the effect of the total quantity of money on the general price level. In international trade, the problems of balance of payments and foreign aid fall within the purview of macroeconomic analysis. Above all, macroeconomic theory discusses the problems of determination of the total income of a country and causes of its fluctuations. Finally, it studies the factors that retard growth and those which bring the economy on the path of economic development.

The obverse of macroeconomics is microeconomics. Microeconomics is the study of the economic actions of individuals and small groups of individuals—the “study of particular firms, particular households, individual prices, wages, incomes, individual industries, particular commodities.” But macroeconomics “deals with aggregates of these quantities; not with individual incomes but with the national income, not with individual prices but with the price levels, not with individual output but with the national output.”³ Microeconomics, according to Ackley, “deals with the *division* of total output among industries, products, and firms, and the *allocation* of resources among competing uses. It considers problems of income *distribution*. Its interest is in *relative* prices of particular goods and services.” Macroeconomics, on the other hand, “concerns itself with such variables as the aggregate volume of the output of an economy, with the extent to which its resources are employed, with the size of the national income, with the ‘general price level’.”⁴

Both microeconomics and macroeconomics involve the study of *aggregates*. But aggregation in microeconomics is different from that in macroeconomics. In microeconomics the interrelationships of individual households, individual firms and individual industries, to each other deal with aggregation. “The concept of ‘industry’, for example, aggregates numerous firms or even products. Consumer demand for shoes is an aggregate of the demands of many households, and the

²G. Ackley, *Macroeconomic Theory*, 1961, p. 4.

³K.E. Boulding, *Economic Analysis*, (3/e), p. 237.

⁴G. Ackley, *op. cit.*, p. 4. Italics in original.

supply of shoes is an aggregate demand and supply of shoes concepts.”⁵ “However, according to Professor Boulding, billions of dollars of consumer and government expenditures.”⁶ Thus the scope of the economy as a whole, “the product and industry of goods, or total production of an aggregate for the various goods and of capital (national income).”⁷ individual households uses aggregates which

Scope and Importance

As a method of theoretical and practical

To Understand economic variables in the economy. Our behaviour of total level in the economy thereby facilitating functioning of concepts help in transparent”. In measuring different understanding

In Economic point of view the underdeveloped national production, balance responsibility of overpopulation outputs, etc.

⁵*Ibid.*, pp.

⁶R.A. Bils

⁷G. Ackle

supply of shoes is an aggregate of the production of many firms. The demand and supply of labour in a locality are clearly aggregate concepts.¹⁴ "However, the aggregates of microeconomic theory," according to Professor Bilas, "do not deal with the behaviour of the billions of dollars of consumer expenditures, business investments, and government expenditures. These are in the realm of microeconomics."¹⁵ Thus the scope of microeconomics to aggregate relates to the economy as a whole, "together with sub-aggregates which (a) cross product and industry lines (such as the total production of consumer goods, or total production of capital goods), and which (b) add up to an aggregate for the whole economy (as total production of consumer goods and of capital goods add up to total production of the economy; or as total wage income and property income add up to national income)."¹⁶ Thus microeconomics uses aggregates relating to individual households, firms and industries, while macroeconomics uses aggregates which relate them to the "economy-wide total".

Scope and Importance of Macroeconomics

As a method of economic analysis macroeconomics is of much theoretical and practical importance.

To Understand the Working of the Economy. The study of macroeconomic variables is indispensable for understanding the working of the economy. Our main economic problems are related to the behaviour of total income, output, employment and the general price level in the economy. These variables are statistically measurable, thereby facilitating the possibilities of analysing the effects on the functioning of the economy. As Tinbergen observes, macroeconomic concepts help in "making the elimination process understandable and transparent". For instance, one may not agree on the best method of measuring different prices, but the general price level is helpful in understanding the nature of the economy.¹⁷

In Economic Policies. Macroeconomics is extremely useful from the point of view of economic policy. Modern governments, especially of the underdeveloped economies, are confronted with innumerable national problems. They are the problems of overpopulation, inflation, balance of payments, general underproduction, etc. The main responsibility of these governments rests in the regulation and control of overpopulation, general prices, general volume of trade, general outputs, etc. Tinbergen says: "Working with macroeconomic concepts

¹⁴ *Ibid.*, pp. 4-5, n. 1.

¹⁵ R.A. Bilas, *Microeconomic Theory*, (1/e), p. 1.

¹⁶ G. Ackley, *op. cit.*

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is a bare necessity in order to contribute to the solutions of the great problems of our times.⁸ No government can solve these problems in terms of individual behaviour. Let us analyse the use of macroeconomic study in the solution of certain complex economic problems.

In General Unemployment. The Keynesian theory of employment is an exercise in macroeconomics. The general level of employment in an economy depends upon effective demand which in turn depends on aggregate demand and aggregate supply functions. Unemployment is thus caused by deficiency of effective demand. In order to eliminate it, effective demand should be raised by increasing total investment, total output, total income and total consumption. Thus, macroeconomics has special significance in studying the causes, effects and remedies of general unemployment.

In National Income. The study of macroeconomics is very important for evaluating the overall performance of the economy in terms of national income. With the advent of the Great Depression of the 1930s, it became necessary to analyse the causes of general over-production and general unemployment. This led to the construction of the data on national income. National income data help in forecasting the level of economic activity and to understand the distribution of income among different groups of people in the economy.

In Economic Growth. The economics of growth is also a study in macroeconomics. It is on the basis of macroeconomics that the resources and capabilities of an economy are evaluated. Plans for the overall increase in national income, output, employment are framed and implemented so as to raise the level of economic development of the economy as a whole.

In Monetary Problems. It is in terms of macroeconomics that monetary problems can be analysed and understood properly. Frequent changes in the value of money—inflation or deflation—affect the economy adversely. They can be counteracted by adopting monetary, fiscal and direct control measures for the economy as a whole.

In Business Cycles. Further macroeconomics as an approach to economic problems started after the Great Depression. Thus its importance lies in analysing the causes of economic fluctuations and in providing remedies.

For Understanding the Behaviour of Individual Units. Last but not the least, for understanding the behaviour of individual units the study of macroeconomics is imperative. Demand for individual products depends upon aggregate demand in the economy. Unless the causes of

⁸J. Tinbergen, *op. cit.* Italics mine.

deficiency in aggregate demand are analysed, it is not possible to understand fully the reasons for a fall in the demand of individual products. The reasons for increase in costs of a particular firm or industry cannot be analysed without knowing the average cost conditions of the whole economy. Thus, the study of individual units is not possible without macroeconomics.

We may conclude that macroeconomics enriches our knowledge of the functioning of an economy by studying the behaviour of national income, output, investment, saving and consumption. Moreover, it throws much light in solving the problems of unemployment, inflation, economic instability and economic growth.

Limitations of Macroeconomics

There are, however, certain limitations of macroeconomic analysis. Mostly, these stem from attempts to yield macroeconomic generalisations from individual experiences.

Fallacy of Composition. In macroeconomic analysis the "fallacy of composition" is involved, i.e. aggregate economic behaviour is the sum total of individual activities. But what is true of individuals is not necessarily true of the economy as a whole. For instance, savings are a private virtue but a public vice. If total savings in the economy increase, they may initiate a depression unless they are invested. Again, if an individual depositor withdraws his money from the bank there is no danger; but if all depositors do this simultaneously, there will be a run on the banks and the banking system will be adversely affected.

To Regard the Aggregates as Homogeneous. The main defect in macro analysis is that it regards the aggregates as homogeneous without caring about their internal composition and structure. The average wage in a country is the sum total of wages in all occupations, i.e., wages of clerks, typists, teachers, nurses, etc. But the volume of aggregate employment depends on the relative structure of wages rather than the average wage. If, for instance, wages of nurses increase but typists fall, the average may remain unchanged. But if the employment of nurses falls a little and of typists rises much, aggregate employment would increase.

Aggregate Variables may not be Important Necessarily. The significance of aggregate variables which form the economic system may not be of the same importance as that of individual incomes. For instance, the national income of a country is the sum of all individual incomes. A rise in national income does not mean that individual incomes have risen. The increase in national income might be the result of the increase in the incomes of a few rich individuals in the country. Thus a rise in the national income of this type

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significance from the point of view of the community.)

Prof. Boulding calls these three difficulties as "macroeconomic paradoxes" which are true when applied to a single individual but which are untrue when applied to the economic system as a whole.⁹

Indiscriminate Use of Macroeconomics Misleading. An indiscriminate and uncritical use of macroeconomics in analysing the problems of the real world can often be misleading. For instance, if the policy measures needed to achieve and maintain full employment in the economy are applied to structural unemployment in individual firms and industries, they become irrelevant. Similarly, measures aimed at controlling general prices cannot be applied with much advantage for controlling prices of individual products.

Statistical and Conceptual Difficulties. The measurement of macroeconomic concepts involves a number of statistical and conceptual difficulties. These problems relate to the aggregation of microeconomic variables. If individual units are almost similar, aggregation does not present much difficulty. But if microeconomic variables relate to dissimilar individual units, their aggregation into one macroeconomic variable may be wrong and dangerous.

MACRO STATICS, MACRO DYNAMICS AND COMPARATIVE STATICS

Statics. The word 'statics' is derived from the Greek word *statike* which means bringing to a standstill. In physics, it means a state of rest where there is no movement. In economics, it implies a state characterised by movement at a particular level without any change. It is a state, according to Clark, where five kinds of changes are conspicuous by their absence. The size of the population, the supply of capital, methods of production, forms of business organisation and wants of the people remain constant, but the economy continues to work at steady pace. "It is to this active but unchanging process," writes Marshall, "that the expression static economics should be applied." Static economy is thus a timeless economy where no changes occur and it is necessarily in equilibrium. Indices are adjusted instantaneously: current demand, output and prices of goods and services. As pointed out by Prof. Samuelson: "Economic statics concern itself with the simultaneous and instantaneous or timeless determination of economic variables by mutually interdependent relations." There is neither past nor future in the static state. Hence, there is no element of uncertainty in it. Prof. Kuznets, therefore, believes that "static economics

⁹K.E. Boulding, *A Reconstruction of Economics*, p. 173.

deals with relations and processes on the assumption of uniformity and persistence of either the absolute or relative economic quantities involved.¹⁰

Macro-static analysis explains the static equilibrium position of the economy. This is best explained by Professor Kurihara in these words, "If the object is to show a 'still picture' of the economy as a whole, the macro-static method is the appropriate technique. For this technique is one of investigating the relations between macro-variables in the final position of equilibrium without reference to the process of adjustment implicit in that final position."¹⁰ Such a final position of equilibrium may be shown by the equation

$$Y = C + I$$

Where Y is the total income, C is the total consumption expenditure and I , the total investment expenditure. It simply shows a timeless identity equation without any adjusting mechanism. This macro-static model is illustrated with the aid of Kurihara's diagram reproduced below.

According to this static Keynesian model, the level of national income is determined by the interaction of aggregate supply function and the aggregate demand function. In Figure 1.1, 45° line represents the aggregate supply function and $C+I$ line, the aggregate demand function. 45° line and $C+I$ curve intersect at point E , the point of effective demand which determines OY level of national income.

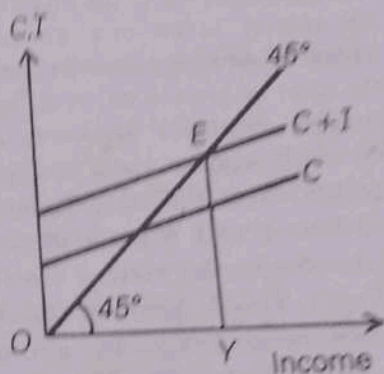


FIG. 1.1

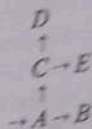
Thus, economic statics refers to a timeless economy. It neither develops nor decays. It is like a snapshot photo from a 'still' camera which would be the same whether the previous and subsequent positions of the economy were subject to change or not.

Dynamics. Economic dynamics, on the other hand, is the study of change, of acceleration or deceleration. It is the analysis of the process of change which continues through time. An economy may change through time in two ways: without changing its pattern and by changing its pattern. Economic dynamics relates to the latter type of change. If there is a change in population, capital, techniques of

¹⁰K. Kurihara, *An Introduction to Keynesian Dynamics*, p. 22.

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production, forms of business organisation and tastes of the people—in any one or all of them—the economy will assume a different pattern, and the economic system will change its direction. In the accompanying diagram, given initial values of the economy, it would have proceeded along the path AB , but suddenly at A the indices change the pattern, and the direction of the equilibrium changes towards C . Again, it would have proceeded to D but at C the pattern and direction is changed to E . Thus, economic dynamics studies the path from one equilibrium position to another: from A to C and from C to E .



Prof. Hicks in his *Value and Capital* defines economic dynamics "as those parts where every quantity must be dated"¹¹ But Prof. Harrod does not agree with this when he says: "In dynamics dating is no more necessary than in statics." He, therefore, suggests that dynamics should concern itself with the analysis of "continuing changes generated by the special nature of a growing economy."¹² According to him, dynamic economics concerns itself with "the necessary relations between the rates of growth of the different elements in a growing economy."¹³ Harrod considers *once-over changes* to fall within the domain of economic statics. Such changes imply a shift from one position of equilibrium to the other. In terms of our diagram a shift from A to C and from C to E without traversing the path is static economics. Prof. Hicks accepts this view of Harrod in his *Trade Cycles*.

Ragner Frisch, however, regards economic dynamics not only a study of continuing changes but also of the *process* of change. According to him, it is a system in which "variables at different points of time are involved in an essential way."¹⁴ Thus, the study of economic dynamics involves the discovery of functional relationships of economic variables at different points of time. The knowledge of such relationships is essential for forecasting. Prediction, thus, becomes the essence of the Frischian definition, according to Baumol. He, therefore, defines economic dynamics as "the study of economic phenomena in relation to preceding and succeeding events."

¹¹J.R. Hicks, *Value and Capital*, 1939, p. 115.

¹²R.G. Harrod, *Towards a Dynamic Economics*, 1948, p. 4.

¹³*Ibid.*, p. 19.

¹⁴R. Frisch, 'On the Notion of Equilibrium and Disequilibrium,' *R.E.S.*, vol. III, 1935-36.

Economic dynamics is, thus, concerned with time-lags, rates of change, and past and expected values of the variables. In a dynamic economy, data change and the economic system takes time to adjust itself accordingly. We may conclude with Prof. Kuznets: "Economic theory which seeks to explain the phenomenon of economic change, the implications of such change, and to examine the factors at work in bringing about a given change and trace the process of that change and the consequences of succeeding movements step by step is called economic dynamics."

According to Kurihara, "Macrodynamics treats discrete movements or rates of change of macro-variables." He further writes: "This method separates the process of trial and error into a series of continuously changing reactions and indicates, step by step, what is cause and what is effect. It describes the changing universe as it is related to previous or subsequent adjustments, it analyses the discrete and continuous changes of aggregates, the sequence of cause-and-effect events arising from some initial disturbance and the time-paths of macro-variables and aggregative relationships. Thus, the macro-dynamic method enables one to see a 'motion-picture' of the functioning of the economy as a progressive whole."¹⁵

The macro-dynamic model is explained by Kurihara in terms of the Keynesian process of income propagation where consumption is a function of the income of the preceding period, i.e., $C_t = f(Y_{t-1})$, and investment is a function of time and of constant autonomous demand function and 45° line is the aggregate supply function. If we begin in period t_0 where with an equilibrium level of income OY_0 , investment is increased by ΔI . then in period t income rises by the amount of the increased investment (from t_0 to t). The increased investment is shown by the new aggregate demand function $C+I+\Delta I$. But in period t , consumption lags behind, and is still equal to the income at E_0 . In period $t+1$ consumption rises and along with

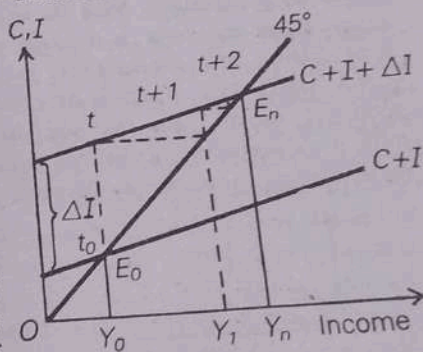


FIG. 1.2

¹⁵K.K. Kurihara, *op. cit.*, p. 21.

the new investment it increases income still higher in QY . This process of income propagation will continue till the aggregate demand function $C+I+G$ intersects the aggregate supply function AS at E_2 in the n th period, and the new equilibrium level is determined at OY_2 . The curved steps t_0 to t_n show the macro-dynamic equilibrium path.

Comparative Statics. Comparative statics is a method of economic analysis which was first used by a German economist, F. Oppenheimer, in 1916. Schumpeter described it as "an evolutionary process by a succession of static models." In the words of Schumpeter, "Whenever we deal with disturbances of a given state by trying to indicate the static relations obtaining before a given disturbance impinged upon the system and after it had had time to work itself out. This method of procedure is known as Comparative Statics."¹⁸ To be precise, comparative statics is the method of analysis in which different equilibrium situations are compared.

The distinction between static, comparative static and dynamic situations is explained with the help of the accompanying figure. If the economy is working at situation A where it is producing at a constant rate without any changes in the variables, it is a static state which is functioning at a point of time. When the economy moves from the equilibrium point A to point B through time, it is economic dynamics which traces out the actual path of movement of the economy between the two static equilibrium points.

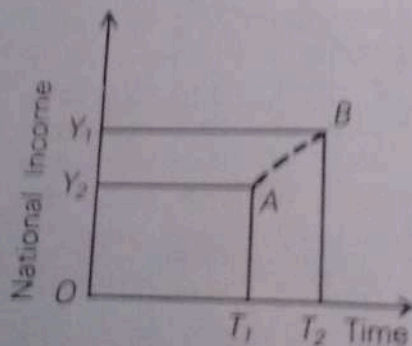


FIG. 1.3

Comparative statics, on the other hand, is related to *once-over* change from point A to point B in which we do not study the forces behind the movement between the two points. Thus comparative statics is not concerned with the transitional period but "involves the study of variations in equilibrium positions corresponding to specified changes in underlying data."

The Keynesian Employment, Income and Output analysis is also based on the theory of shifting equilibrium wherein he compares different equilibrium levels of income. According to Kurikara, Keynes

¹⁸J.A. Schumpeter, *History of Economic Analysis*, 1954, p. 965. Italics mine.

made no attempt to show the process of transition from one position of equilibrium to another. He simply used comparative static analysis. Figure 1.3 explains two different levels of income, OY_2 at OT_1 time and OY_1 at OT_2 time. Independent of each other, both the income levels relate to economic statics. But income at OY_2 level is higher than at OY_1 level. This is comparative statics which compares two static levels of income as against dynamic economics which traces out the path AB , showing increase in income.

But comparative statics is not without limitations. Its scope is limited for it excludes many important economic problems. There are the problems of economic fluctuations and growth which can only be studied by the method of dynamic economics. *Second*, comparative statics is unable to explain the process of change from one position of equilibrium to another. It "gives only a partial glimpse of the movements, for we have only the two 'still pictures' to compare, whereas dynamics would give us a movie." Further, we are not sure when the new equilibrium will be established because this method neglects the transitional period. This makes comparative statics an incomplete and unrealistic method of economic analysis.

We sum up the discussion among macro statics, macro dynamics and comparative statics thus: Economic statics is the study of relations between economic variables at a point of time, whereas economic dynamics explains the relationship of economic variables through time. In a static economics there is movement but no change in economic phenomena while in a dynamic economics the fundamental forces themselves change. The former studies movement around the point of equilibrium, but the latter traces the path from one point of equilibrium to the other, both backward or forward. On the other hand, comparative statics studies and compares two static equilibrium positions. If savings at a point of time are S' and at another moment of time S'' , this is once over change which is comparative statics. But if a given rise in savings leads to increase in investment, output, income and to a further rise in savings, this sequence of interdependent events of continuous changes is dynamic in nature.

No doubt economic dynamics is the antithesis of economic statics, yet the study of dynamic economics is a necessary adjunct to the hypothetical static analysis to enable economists to formulate generalisations. The *raison d'être* of all statical investigations is the explanation of dynamic change. On the other hand, dynamic economics is made up of static situations. If economic dynamics is the running picture of the working of the economy, economic statics relates to the 'still'—the stationary position of the economy. Thus,