4

The Microfoundations of Macroeconomics

4.1 Introduction

The question of the microfoundations of macroeconomics refers to the relationship between theory expressed in terms of aggregates and the underlying behaviour of decision-making units. It raises fundamental issues concerning co-ordination of behaviour, the response of decision-makers to unintended consequences of their actions, and the meaning of equilibrium. But the formulation of these issues varies among the four schools of thought to be considered, according to their focus of attention, the units chosen for microeconomic analysis and their use of the equilibrium concept. Indeed, the microfoundations issue provides an immediate illustration of the principles held in common *within* each school of thought, in spite of their other differences.

The fallacy of composition is a central feature of any discussion of microfoundations; according to this fallacy, individual actions, if common to a large number of individuals, will generate an outcome different from what was intended by each. Thus, in Keynesian economics, a general increase in the propensity to save reduces total income, and thus the absolute level of saving. In competitive markets, attempts by entrepreneurs to achieve supernormal profits are thwarted if other entrepreneurs act likewise. The outcome cannot be an equilibrium one in the sense that all expectations have been fulfilled; some further reactions can be anticipated. How then can an equilibrium situation, and the approach to that equilibrium, be modelled?

The co-ordination of individual behaviour has been a matter for concern ever since Smith attempted to analyse the new configuration of individual behaviour along the lines of specialized production. But the emergence of macroeconomics as an enquiry

separable from microeconomics was the outcome of the Keynesian Revolution. Neither Classical nor neo-classical economics had explicitly separated the two fields of study, most participants regarding the economy as a harmonious system whereby activity at the microeconomic level generated the outcome at the macroeconomic level captured in Say's Law. Certainly, after Smith, the Classicists had concentrated attention at the macro level, i.e. they were concerned with the determination of the rate of growth of activity and its distribution by class. The neo-classicists concentrated their attention on the micro level, i.e. they were concerned with the efficient allocation of activity. But neither viewed the two levels as being necessarily incompatible. Similarly, those, including Marx, who employed theories of systemic disharmony provided a holistic account incorporating individual behaviour and economy-wide outcomes in terms of the fallacy of composition.

The apparent anomaly of persistent unemployment during the Depression of the 1930s, and Keynes's explanation of it, raised questions as to how far individual self-interest could be relied upon to produce socially desirable outcomes at the macro level. Expressing his alternative theory in a manner inconsistent with neo-classical microfoundations, Keynes encouraged renewed attention to be given to macroeconomic aggregates. But the basis of this attention was the conclusion drawn within the orthodoxy that there must be reasons for microeconomic behaviour, as analysed within the neo-classical paradigm, not to satisfy Say's Law, not that there might be some inadequacy in neo-classical microeconomics itself. The macroeconomic problem studied by Keynes was thus interpreted by others as a result of a *logical* problem in aggregating from the micro to the macro level, not a result of the problem with the type of microeconomics employed. On this basis, it was regarded for some time as legitimate to study aggregated variables within a separate framework, while retaining neo-classical microeconomics in its traditional form. The predominant macro problem was persistent unemployment, the inability of the labour market to clear. This contrasted with the market-clearing framework of neo-classical microeconomics. It became conventional, as a result, to view macroeconomics as dealing with co-ordination failure and microeconomics with co-ordination success (see Leijonhufvud, 1981, pp.104-6; Shackle, 1972, p.334; Loasby, 1976, p.171).

This inconsistency between analysis at the two levels of

aggregation, initially justified by conventionalism, was further encouraged by Friedman's instrumentalism, which released macroeconomists from any requirement to use only realistic assumptions; in particular this stance justified the use of assumptions in macroeconomics which differed from those employed in microeconomics, quite apart from any question of realism. But inconsistency within an analytical system goes against the fundamental principles of Cartesian/Euclidean thought; indeed by the neo-classical definition of rationality it is irrational. And in fact Friedman in practice grounded his theory (of consumption and the demand for money, for example) in orthodox microeconomic principles.

It became imperative for conventionalist neo-classicists to demonstrate that the micro-macro inconsistency was indeed simply the outcome of the logic of aggregation, not an inconsistent use of microeconomic assumptions in the two fields and, understandably, not an indicator of any fundamental flaws in neo-classical economics. In fact, most of the major advances in neo-classical economics over the last 20 years have been adaptations to analysis at the micro level explicitly to address the logical problems entailed in translating microeconomics into macroeconomics (see Weintraub, 1979). However, since different schools of thought employ different forms of microeconomics, and take a different methodological position on the micro-macro interrelationship, the microfoundations issue is much broader in scope than is implied by the general equilibrium treatment (see Harcourt, 1977).

In considering the position of each school of thought on the issue of microfoundations, we look first at how the relationship between macroeconomics and microeconomics is viewed methodologically. We then examine the content of the assumptions as to microeconomic behaviour incorporated in macroeconomic theory: the choice of relevant microeconomic units, the motivation of those units, and the co-ordination of action. The discussion will focus on treatment of the labour market, since this has been the context of much of the recent discussion on microfoundations. (The rôle of money has perhaps historically been more central to the microfoundations issue; but since it is also central to the other conceptual issues to be discussed in chapters 5 and 6, the whole of chapter 7 is devoted to money alone.)

We start by examining the position of the neo-Austrian school, since it is most closely identified with the microfoundations issue,

and has indeed influenced other schools of thought in their treatment of microfoundations. We then examine the attempts dating from the 1940s to extend the neo-classical synthesis in macroeconomics to microeconomics within one grand general equilibrium system. The neo-classical synthesis had diverged from Keynes by ignoring the microfoundations of the *General Theory* and retaining only the aggregative results. (Indeed without such a separation, the neo-classical synthesis would not have been possible.) The logical outcome of adding neo-classical microeconomics to the neo-classical synthesis has been the restoration of Say's Law, albeit with much more sophisticated theoretical backup. Meanwhile Keynesians have been pointing out the error involved in presuming that Keynes accepted neo-classical microeconomics and only objected to their aggregation in Say's Law. The fourth section deals with the Keynesian position on microfoundations, and the different interpretations to which it has been subject. Marxians are described in section 4.5 as taking a position which was the polar opposite of that of the neo-Austrians on microfoundations.

4.2 Neo-Austrian Theory

The neo-Austrian school faces a microfoundations problem which is at best solved (or at most avoided) by means of eschewing macroeconomic analysis altogether. Hayek did explicitly set out to analyse the unintended consequences of human action (in accordance with Popper, 1963, pp.124–5), but without an apparatus for doing so in any systematic way. There is no theoretical necessity for individuals whose expectations have been disappointed to adjust their behaviour in such a way as to allow more rather than less co-ordination of their actions. The only possible solution is to focus all analysis on the subjectively determined behaviour of individuals, at the expense of reaching any aggregative conclusions. Where such conclusions have been reached, the theoretical leap has been made of *assuming* that individuals' actions are co-ordinated harmoniously.

For neo-Austrians then, microeconomics is coterminous with 'economics'. Whether the result of indubitable *a priori* knowledge, or of fallible introspection, information gathered by individuals in the course of economic activity is regarded as being the best information available on which to base not only economic

activity, but also economic theory. As a corollary, macroeconomic aggregates have no independent existence since they do not enter directly into decision-making at the market level; individuals have no objective experience of macro variables on which to draw for information. Information on general economic conditions may influence individuals' decisions, but the perception and interpretation of that information is subjective.

Market processes are viewed (without proof) as harmonious, being the outcome of actions by individuals seeking their own self-interest. This view generates the strong result that centralized activity by government which alters market signals is by definition disharmonious. Since the government is the only agency whose decision-making is influenced solely by macroeconomic aggregates, measurement and use of these concepts thus serves no socially useful function. The only purpose, then, in considering macroeconomic variables is for policy advice during a transitional stage while government macroeconomic policy is being phased out (see Hayek, 1931a). Even then, the value of such advice depends on the view taken of the capacity to make predictions, which requires that observed aggregates can be treated as if representing an equilibrium position. In summary, there is a presumption that whatever the level of aggregates, they are the outcome of a harmonious process; the important object of study is thus the market process which generates the aggregates, not the aggregates themselves. As a corollary, government *may* have a rôle at the microeconomic level of industry regulation, for example (see Littlechild, 1978, pp.38-43; Lachmann, 1973a).

The unit of study within neo-Austrian microeconomics is the individual, with particular attention paid to the entrepreneur. The individual is defined to be rational; rationality is thus equated with actual behaviour, rather than independently defined. Indeed, the absence of mathematical expression removes the need to be exact about axioms of human behaviour; in turn, it is because human behaviour is viewed as purposeful that mathematics is rejected as being an inadequate means of expression. The purposefulness of behaviour allows for a wide range of purposes; it also suggests creativity, and use of imagination. The speculative choices made by individuals in different markets, in their own interests, are the bricks and mortar of neo-Austrian economics. (See Alchian and Allen (1974) for a textbook treatment of speculative micro markets from a neo-Austrian perspective.)

Rather than focusing on a (notional or actual) position of

general equilibrium, neo-Austrians focus on the process by which individuals co-ordinate their market behaviour, i.e. the process of market adjustment. As in Schumpeter's analysis, entrepreneurs play a central role in profit-seeking behaviour, which requires alertness to new opportunities. The competitive environment is thus not seen as perfectly competitive in the neo-classical sense, since that leaves no scope for differential information, or for originative action by individual entrepreneurs. As long as there is freedom of entry, then firms within any industry are threatened by the possibility of new competitors seizing new opportunities within the industry. This behaviour ensures that excess profits do not persist. Competition is thus seen in the Classical terms of 'free competition'. More recent developments in the theory of the firm to take account of the management (rather than entrepreneurial) function draw on behavioural theory, in the sense of analysing the behaviour of individuals within the corporate system (drawing on, for example, Loasby, 1976, and Casson, 1982). In neo-Austrian hands, however, behavioural theory is subordinated to the *a priori* concept of purposefulness.

The importance of alertness in recognizing opportunities implies that they are not perceptible to all. Indeed, lack of full information is an important feature of this process analysis. It provides a role for advertising, which alerts consumers to new opportunities. The differences between information available to different individuals is, on the one hand, the driving force of the competitive market system, and on the other, the factor that ensures that a static equilibrium analysis misses the essence of that system. Even more than Kirzner's (1973) concept of alertness to *existing* information, Shackle's (1979) concept of originative behaviour involves the *creation* of new information which is even more eluded by static equilibrium analysis (see Loasby, 1983, for a discussion of these two concepts).

The neo-Austrian analysis of the labour market is conducted in the same way as that of any other market, being governed by the opportunity-seeking behaviour of firms and employees under conditions of incomplete information. Viewed in terms of market process, the labour market clears only by coincidence, since perpetually changing conditions in product markets generate changes in labour market conditions and perceptions of those changes. A worker who has been laid-off engages in search activity, gathering information on job opportunities and on the terms and conditions that can be commanded within the market

for her particular skills. Similarly, firms engage in search for the required skills, and gather information on the terms and conditions required to attract a worker with those skills. Because this process takes time, there will always be some frictional unemployment.

The level of frictional unemployment is influenced by the competitive structure of the labour market. The activities of strong unions restrict the choices open to the unemployed and to firms with job vacancies, by specifying the terms and conditions of job offers, and also influence the terms and conditions offered to the employed labour force in collective bargaining. Unions are thus seen as introducing rigidities into the labour market which inhibit the adjustment of relative prices required to emit the correct signals. Indeed it is the downward inflexibility of wages in strongly unionized sectors, which need not be the sectors where demand for labour is strongest, which introduces an upward bias in wage settlements in other sectors where demand for labour is strong, leading to wage inflation (see Hayek, 1960, chapter 18).

The level of unemployment does, however, fluctuate over time, reflecting fluctuations in the conditions of search activity. The neo-Austrian explanation analyses a fall or rise in total unemployment in terms of its sectoral composition. Income and employment fluctuations over the trade cycle are generated by fluctuations in investment activity, induced by changing monetary conditions (see section 7.2). Financial inducements to increase investment in excess of what the free market would have generated attract labour into the capital goods sector. But the resulting capitalisation of industry, being excessive, reduces labour productivity and thus wages. Dislocated labour, discouraged from employment in the capital goods sector by low wages then engages in search for more attractive employment opportunities. The change in relative wages is only accepted after some period of search and information gathering: With an excessive capital stock for current conditions, it takes time for normal conditions to be restored in the capital goods sector, with employment below expansion levels but above contraction levels. In short, any rapid sectoral shift, which is later reversed, creates additional difficulties for employers and employees in their attempts to identify the best opportunities for them, and thus prolongs the period of search on one or other side (see Hayek, 1967, pp.270–6). Ultimately, however, if there are no further outside shocks, harmonious co-ordination is assured.

4.3 Mainstream Theory

The apparent inconsistency between microeconomics and macroeconomic analysis derived from Keynes has posed fundamental questions within neo-classical economics, spawning the development of a sophisticated analytical structure designed to deal with those questions. This structure has been built on the work of those such as Hicks (1939) who had already been grappling with the difficult task of modelling the *process* of co-ordination in market behaviour, i.e. market behaviour over time (see Hicks, 1976). It is the resulting body of theory which we identify now as 'mainstream' economics, spanning both neo-classical theory and 'pure' general equilibrium theory.

The issue of microfoundations for macroeconomics, as expressed after Keynes, was perceived initially as arising from a deficiency in Keynesian macroeconomics as interpreted within the neo-classical synthesis; aggregative analysis had not been expressed in such a way as to provide an explanation rooted in individual behaviour. The pioneering work of Clower and Leijonhufvud, however, pointed out deficiencies in the neo-classical account of individual behaviour in market transactions, which could explain the micro-macro inconsistency. As a result, much of the neo-classical account of market behaviour has been developed along the lines indicated by Clower and Leijonhufvud in order to reconcile that inconsistency.

If the axiomatic, deductive method is employed by neo-classical theory, all analysis must be reductionist. In particular, all results should be derivable from axioms about the behaviour of the smallest economic unit, the individual (although the axions *may* be applied to the household, or firm). For macroeconomics to be methodologically acceptable, therefore, it must be derivable from those axioms. Conventionalism allows modifications from the ideal theoretical system, but a blatant inconsistency is difficult to accept within any framework. This is particularly the case when the inconsistency arises from an anomaly (apparently involuntary unemployment) which has allowed a scientific 'revolution'. To the extent, however, that neo-classical economists persist with logical inconsistency between their macroeconomics and their microeconomics it is possible to question the truth of their analysis on logical grounds, without any need for qualification with

respect to the problems of induction, subjective observation, etc. While serious differences persist between neo-classical and pure general equilibrium theorists over the type of microfoundations to be employed (in the sense of representation of market behaviour as Walrasian or otherwise, for example), all are in accord as to the need for a consistent reductionist basis for macroeconomics based on a marginalist theory of value (see Weintraub, 1979; Perry, 1984).

A further difficulty stemmed from the Marshallian practice of specifying axioms in terms of a 'representative' individual. This practice was a means of simplifying from an actuality of diversity in the conditions and behaviour of individuals. But when the focus is put on the micro-macro distinction, it becomes apparent that a representative individual is simply an average derived from an aggregation of participants in any market; it cannot deal with the co-ordination of transactions among individuals within that market who are diverse in terms of tastes, perceptions and knowledge. With some help from neo-Austrian thinking, general equilibrium analysis became more truly reductionist in order to analyse co-ordination. Even so, the behavioural units employed are conventionally households, firms and government, each of which is a collection of individuals. For completeness, recent work has been directed towards explaining the unified behaviour of the group in terms of the behaviour of their constituent individuals (see for example Gale, 1982, 1983). For an attempt to show managerial and behavioural theories of the firm as consistent with those which identified the firm with the individual entrepreneur, see Machlup (1967). For a reductionist analysis of social behaviour see Becker (1976). But the trend (described below) of moving away from the representative individual to allow for diversity of tastes, information, etc., has at the same time taken analysis further and further from macroeconomics.

The axioms of individual behaviour define motivation and rules for rational behaviour. Individuals maximize utility subject to constraints given by the structure of consumer preferences and the conditions of production (the production function). Rational pursuit of this goal requires the specification of (consistent and transitive) preference orderings by consumers and income-leisure preferences by workers. The axioms are thus expressed in such a way as to allow equilibrium solutions to be generated; auxiliary assumptions are similarly required as to the mathematical properties of the production function also.

The co-ordination of individual behaviour generated by these axioms is traditionally captured in Walras' *tatonnement* process. The resulting law of markets states that the sum of excess demand across all markets is zero; alternatively, excess demand in any one market must be matched by an equal excess supply in one or more other markets. Put another way, demand for any good or service in a market is the mirror image of supply of a good or service to be given in exchange. The process by which excess demand and supply are eliminated is described in terms of an auction. An auctioneer calls out prices and takes supply and demand bids; if these do not match, then a higher price is called if there is excess demand, and a lower price if there is excess supply; a market-clearing price is reached by a process of iteration (or '*tatonnement*'). This is the process by which the market approaches the intersection of the supply and demand schedules central to neo-classical microeconomic analysis. Co-ordination thus takes a rather limited form in Walrasian theory, since no exchange actually takes place until the equilibrium set of prices is reached. Alternative representations of the market process (particularly the sequence analysis of temporary equilibrium theory) attempt to model reactions to actual exchanges.

The applicability of this analysis relies on the existence of independent demand and supply schedules. Doubts about the validity of the consumer axioms encouraged Samuelson's revealed preference approach which seemed to verify the existence of downward-sloping market demand curves (independently of the axioms) (see Samuelson, 1938, but see Wong's, 1978, critique). Further, Becker (1962) showed that the existence of budget constraints was sufficient to generate downward-sloping demand curves under certain carefully specified forms of 'irrational' behaviour. The supply curve also encountered difficulties on a range of counts: the logical inconsistencies arising from the constant returns to scale assumption of perfect competition, evidence suggesting increasing returns to scale, and evidence suggesting that industry was not, in general, perfectly competitive (see Shackle, 1967). Without the perfect competition assumption, supply curves could not be derived. Some, notably Hahn (1973b), take the limited realism of the perfect competition assumption as limiting the applicability of general equilibrium results; realism of assumptions is regarded as necessary to the realism of results. However, Arrow and Hahn (1971, Introduction), and Hahn (1973a), emphasize that description is not the purpose of general

equilibrium theory. The majority, however, follow Friedman's (1953) lead in treating perfect competition as an 'as if' assumption; verification of results implies that individuals and firms behave 'as if' the microeconomic assumptions were true.

The challenge of unemployment at the macro level to Walras' Law required an explanation of the failure of *tatonnement*; how could the labour market persistently fail to clear? The first explanation, provided by Modigliani (1944) was that there was an impediment to the free movement of money wages (as Keynes, 1936, had indeed suggested); if the real wage were not allowed (as a result of union action, say) to fall when there was an excess supply of labour, then that excess could not be eliminated. In this way, a fall in the general price level following a fall in aggregate demand would cause real wages to rise, unemployment to emerge and output to fall. Demand could thus affect supply (countering Say's Law) if wages were prevented from falling. Labour's behaviour could only be explained by money illusion; if only labour realized that a fall in money wages, when prices had fallen, did not represent a fall in real wages, the problem would not arise. In terms of Walrasian analysis, employment falls when the price level falls because the labour supply curve is (irrationally?) expressed in terms of the money wage, while labour demand is a function of the real wage.

Clower (1965), however, argued that deficient-demand unemployment did indeed contradict Walras' Law, because there was no mechanism whereby the excess supply in the labour market could be mirrored by a *perceptible* excess demand in any other market. The problem arose from the fact that transactions are conducted in terms of money; money must be possessed for demand to be expressed. According to his dual-decision hypothesis, the decision to hire labour for money is separate from the decision of workers to buy output with money; in particular the capacity for the latter decision is determined by the amount of employment income available. Starting from a disequilibrium position, where a fall in demand has induced a fall in employment, Clower showed that there was no mechanism by which the unemployed could convey to employers what their demand would be if they were employed, i.e. what their notional demand was. Employers were only aware of effective demand, and, as far as they were concerned, there was no excess demand for goods at the new, lower level of output. Although the excess supply of labour was matched by an excess *notional* demand for goods, there was no excess *effective* demand to induce a market reaction by producers.

Clower had thus pointed out serious implications of the absence in the labour and goods markets of an auctioneer who persists until the market clearing price is found; in practice, 'false trades' (trades at prices other than the equilibrium price) have income effects which have repercussions on subsequent market outcomes. This approach was further developed by Leijonhufvud (1968, 1981) who questioned the realism of the Walrasian assumption that adjustment would occur through price changes anyway. Rather he suggested that Keynes's analysis had assumed quantity adjustment. (He identified quantity adjustment with Marshall; see Leijonhufvud, 1974, for his further thoughts.) If in fact prices are slow to adjust, then the time frame within which market reactions occur becomes important. Leijonhufvud envisaged situations arising where lagged price adjustment allowed a downward spiral of output and employment. If a fall in aggregate demand caused stocks to pile up, firms would lay off workers. While prices would eventually fall, to run down stocks, and wages fall to reflect labour market conditions, unemployed workers and workers with lower earnings would by then have contracted their effective demand, further adding to stocks, and encouraging further lay-offs. As long as the price adjustment lagged behind quantity adjustment, this process could continue, generating a recession (without any automatic mechanism for reversal).

Clower and Leijonhufvud's work pointed the way to the necessary avenues of enquiry for general equilibrium theorists attempting to deal with the micro-macro inconsistency. They had demonstrated the problem as lying with the co-ordination of individual behaviour out of full Walrasian equilibrium. Dealing with this problem would allow an explanation for market successes, where activity was co-ordinated in such a way as to propel markets back to equilibrium, and market failures, where activity was prevented from co-ordinating successfully. This disequilibrium analysis would thus focus on the problems of information flows within markets and the sequencing of market reactions. They are often classified as 'quantity-rationing models', because of the income effects of excess supply or demand; if employment (or demand for goods) is rationed, a simultaneous excess demand for goods (or labour) is only notional and cannot induce the Walrasian market response. These models are often described as Keynesian because of the fixed-price assumption (particularly when that price

is the wage rate), although that involves a severe misinterpretation of Keynes's own framework.

The possibility of quantity rationing (both in the labour and goods markets) is seen by disequilibrium theorists as driving a wedge between their theory and equilibrium theory. A quantity constraint is a market, rather than individual constraint; it is the outcome of aggregated effects of individual behaviour, which generate involuntary unemployment and slow down adjustment to equilibrium (see Malinvaud, 1977; Solow and Stiglitz, 1968). In Solow's (1979, p.345) words:

> The difference between the equilibrium view and the disequilibrium view is not that in one theory agents are assumed to optimise and in the other they are not. The difference is in the constraints they are assumed to take into account.

The fixed-price assumption, however, raises periodic questions about the competitive structure which allows prices not to respond to supply and demand; why should rationed workers or buyers be price-takers? Following Arrow (1959), Grandmont and Laroque (1977), for example, conclude that industry must have a monopolistically competitive structure, although Malinvaud and Younes (1977, p.95) point out that the perfect competition assumption might still be necessary if the (mathematical) existence of equilibrium positions is to be proved; firm and industry supply curves are necessary to the theoretical framework. An alternative has been sought in implicit contract theory, whereby a fixed nominal wage contract represents an optimal sharing of risk between employers and employees, in the face of uncertain demand conditions (see Baily, 1974; Azariadis, 1975; Gordon, 1974; Hall, 1980).

One development of particular interest for econometric work has been to model constraints as being stochastically determined, since systematic constraints pose such difficulties for explanation in terms of rational behaviour. Stochastic constraints are characteristic of the rational expectations approach of Lucas (1972), Sargent (1973), Sargent and Wallace (1975) and Barro (1976). Otherwise, their approach is distinguished from 'pure' general equilibrium theory by the presumed one-to-one correspondence between theory and reality, and the corresponding econometric treatment of expectations (to be discussed in section 6.3).

Further developments drew on temporary, or short-period

equilibrium models, which specified non-market-clearing equilibrium positions which could arise from the limited information available at a particular point in time (using concepts developed by Hicks, 1939). While the outcome of the actions incorporated in this equilibrium would produce new information in the next period, and thus a new temporary equilibrium, each equilibrium during the relevant short period involves no impetus for change. However, because of the sequential character of these equilibria, attention must be paid to expectations formation, which governs the conjectures on which individuals base their market bids. Further, following Clower, money must be brought explicitly into the range of assets open to choice, because of its central rôle as a medium of exchange; money could only be excluded from a full Walrasian equilibrium on the grounds that, if all other markets cleared, then Walras' Law stated that the money market must also clear. In chapters 6 and 7 we explore the treatment of expectations and money in these neo-Walrasian models.

There has been a plethora of theoretical developments along the lines outlined above over the last decade. Surveys of the relevant literature may be found in Weintraub (1979), Cásson (1981), Hey (1981) and Muellbauer and Portes (1978). The trend has been towards temporary or short-period equilibrium frameworks and away from disequilibrium analysis. Equilibrium requires that agents' plans, on present information, be compatible; the outcome may alter bids in the next period, but there is no possibility of an outcome which is involuntary for any participant. This trend in analysis away from the earlier disequilibrium analysis has been justified on the grounds that any process of adjustment outside equilibrium, unless it is determined by rational individual action, must be *ad hoc*. Hahn (1977), one of the guiding lights in conjectural equilibrium analysis, rejects any attempt at disequilibrium analysis on the grounds that there is 'no theory of "out of equilibrium behaviour" on offer' (Hahn 1977, p.35). Disequilibrium models are often referred to as 'Keynesian' (in the sense of neo-classical synthesis Keynesian). They are justified on grounds of realism; the limited availability of information at any one time in practice allows non-market-clearing to persist for some time (see Tobin, 1980b).

Hey (1981, p.229) refers to all these developments in microfoundations as increasing the 'intellectual honesty' of aggregative economics. Yet, the notion of reasonable progress in this area conveyed by Weintraub and Hey is not reflected in the revealing

Harcourt (1977) volume of papers from a conference on microfoundations. What have these developments meant for mainstream macroeconomics? It is difficult to draw any conclusion from most of the literature, which is engrossed in the tremendous complexities of modelling individual trading behaviour and its co-ordination. Herein must lie the answer; mainstream economics is moving towards neo-Austrian theory in coming to equate economics with microeconomics. Given the current state of knowledge, it is simply too difficult to build a complete general equilibrium framework which would answer macroeconomic questions for economies out of equilibrium; the only choice for orthodox macroeconomists is to ignore the logical inconsistency between macroeconomics and neo-classical microeconomics or to sacrifice neo-classical microeconomics. But this does not accord with the professed aims of neo-classical theorists. In the words of Tobin (1981, p.36):

> The adjustment process itself has not, in general, been successfully described as optimising behaviour, the only paradigm that carries theoretical conviction in our profession. This failure, neither surprising nor discreditable in view of the intrinsic difficulties of the task, is the root of the chronic crisis in macro-economics.

For 'pure' general equilibrium theorists, anything other than complete micro-macro consistency is methodologically untenable. Having surveyed recent developments in general equilibrium microfoundations, Hahn (1977) devotes the final paragraph to the question we have just posed, and explains that he has not discussed macroeconomics as such because 'I have nothing to say ... how one is to give it a theoretical foundation I do not know' (Hahn, 1977, p.39). (A shift in position in favour of macroeconomic analysis is, nevertheless, evident in Hahn (1983).

Specifically, in terms of the labour market, general equilibrium theory has also followed in neo-Austrian footsteps. The persistence of, and fluctuations in, unemployed labour must be explained by workers' plans which are compatible with employers' plans in any one period of temporary equilibrium. In other words an explanation was sought for this unemployment to be voluntary, an explanation which was found in search theory. Search theory in mainstream analysis differs from neo-Austrian search theory in terms of being modelled according to axiomatic

rules for behaviour within an equilibrium setting; the significance of this difference in setting will be explored in the next chapter. Otherwise, the general rationale is the same, that it takes several periods for new information to be acquired and for bids to be adjusted. In each period, workers weigh up the opportunity cost of job search against the expected benefits of seeking alternative employment, just as employers weigh up the relevant costs and benefits associated with hiring or firing on the basis of currently available information on product prices and wages. This behaviour is symmetrical in the sense that a worker may give up a job in order to undertake job search.

The analysis conforms to the Walrasian supply and demand analysis, except that supply and demand schedules are based on conjectural information, and include search costs for employers and employees, and may involve some wage and/or price rigidity if competition in the relevant market is not perfect, or reflecting implicit contracts between employer and employee. Thus individual workers may be unemployed because of a fall in demand for their product which is beyond their control; but they remain unemployed only out of their own choice. In this case in particular, once unemployment becomes an outcome of intersectoral adjustment, the focus is naturally micro rather than macro. The major source on search theory as an exercise in general equilibrium microfoundations is Phelps (1970); see also Dow and Earl (1982, chapter 14). Frydman and Phelps (1984) present their book of readings as the post-rational expectations follow-up to the Phelps volume.

4.4 Post Keynesian Theory

The issue of microfoundations has been presented so far as following on the Keynesian Revolution; it represented primarily an attempt to reconcile Keynesian macroeconomic analysis with neo-classical microeconomics. Certainly there is a degree of optimism within general equilibrium economics that significant progress has been made in that direction. The remaining work to be done lies in the logical extension of this work in generating a complete system which yields macroeconomic results; much of the progress so far has been in the microeconomic analysis of market adjustment.

Keynes, however, can be interpreted also as having taken a

holistic approach in the sense that the *General Theory* was a logically consistent combination of micro and macro analysis, but the microfoundations were not equivalent to neo-classical microfoundations. Keynes's own microfoundations did include some elements in common with neo-classical economics. But the case is persuasively made by Chick (1983) that the argument of the *General Theory* was structured in such a way as to show, in some parts, the inadequacies of Say's Law even *with* neo-classical microfoundations. This makes it difficult to state categorically what Keynes's own microfoundations were. But we are concerned here with the microfoundations analysis of present day Post. Keynesians, who do not inevitably adhere to Keynes's choices. We shall, therefore, focus (where confusion might otherwise arise) on Post Keynesian microfoundations, although referring to Keynes as an important contributor to Post Keynesian theory. The other major influence on Post Keynesian microfoundations is Kalecki (1937, 1971).

The first principle of microfoundations within this paradigm is that macroeconomics refers to the aggregation of the outcomes of individual action, and thus should not be logically inconsistent with the analysis of individual behaviour. Second, given the complexities of constructing a complete micro-macro system (as discovered by mainstream theorists), it is nevertheless legitimate to analyse behaviour in terms of aggregates. Keynes was very careful in his choice of aggregates and in the means of measuring them (see Chick, 1983, chapter 3), so that, although any aggregation is problematical in suppressing conflict and co-operation within the aggregate (see Green, 1977), these problems would be made as harmless as possible. Thus, implicit is the judgement that there are sufficient regularities between the chosen aggregates to allow useful analysis of policy questions, without grounding the analysis explicitly in individual behaviour. In other words, without the reductionist imperative of a Cartesian/Euclidean mode of thought, it is acceptable to have different chains of logic which do not necessarily stem from a common set of axioms which refer to the smallest unit of analysis.

In any case (following Classical tradition), the individual is not necessarily viewed as the appropriate unit of analysis, to which all analysis can be reduced. There are several areas of Keynesian macroeconomics where the group (or class) is the basic unit of analysis; although groups are made up of individuals, it is the impact of group behaviour on individual behaviour which is the important factor in, for example, the formation of expectations. Rather than founding all analysis on axioms of individual behaviour, then, Keynesian analysis is in part based on postulates as to group behaviour. In this sense, it is the aggregate which governs the individual, rather than the other way round (see Crotty, 1980). As a result, the problems of specifying co-ordination are limited to co-ordination between groups. Put another way, individuals can legitimately be treated as representative individuals since it is aggregate, or average, values which influence behaviour; scope must be left, however, for creative individual activity to instigate a shift in group behaviour.

Finally, the micro–macro relationship is analysed explicitly in terms of the logical distinction between the two levels of analysis. Keynesian results frequently follow from the fallacy of composition, whereby the consequences of individuals' actions in aggregate thwart the individuals' plans. Thus, attempts by labour to increase employment by accepting lower money wages may be thwarted if that leads to a contraction in effective demand. Since this problem arises only if a sizeable proportion of the relevant group (of workers in this case) behaves in this way, the appropriate unit of analysis is the group rather than the individual. Indeed any theoretical system which deals with disharmony – in macroeconomic terms, crisis – *must* focus analysis at the macro level (see Harcourt, 1982, p.9; Harris, 1975).

Given this position on the microfoundations issue, then, what determines the view taken of individual or group behaviour? Keynes's own conception of rationality underwent some change during his lifetime. Under the influence of Russell and Moore, and no doubt also of his father, Keynes's early view was that all behaviour was potentially rational in the sense of 'justifiable by reason'. But his work on probability suggested that reason had to act on limited information, and thus on subjective assessments of probability. Indeed Keynes came round to the view that reason and emotion cannot necessarily be treated separately (see Keynes, 1972b, pp.433–50). This rejection of the rational/emotional dual is consistent with the perception that Keynes rejected a dualistic mode of thought. Within the more holistic view of human nature which Keynes adopted (stemming from his analysis of the consequences of information problems), Shackle's concept of human imagination and creativity has been an important influence on Post Keynesian analysis of the individual. Human behaviour is thus conditioned by the environment in which actions are taken. In

particular, Keynes emphasized the problems of decision-making under conditions of uncertainty (which will be explored in detail in chapter 6, which deals with expectations formation). Lacking the capacity in many instances to form predictions, even in probabilistic terms, individuals employ conventions which rely heavily on group behaviour. Thus in some circumstances the conventional prediction is the group prediction.

Keynes perceived individuals' motivation within a capitalist society to be determined by the nature of its social arrangements: an important motivating factor was the accumulation of monetary wealth (Keynes, 1937, p.213; 1972a, pp.268-9 and 292). Far from questioning individuals' motivation, general equilibrium theorists present the accumulation of wealth as being rational, reflecting a choice in favour of future consumption, at the expense of present consumption. Keynes in contrast observed rather accumulation without any particular consumption plans in mind. This he viewed as irrational (Keynes, 1972b, pp.307-9); indeed he seemed to view it in Freudian terms (see Keynes, 1971, p.290; see Winslow, 1983, for a full expression of this argument). It could be argued further that Freud's behavioural psychology (of which Keynes was certainly familiar; see Keynes, 1925, pp.643-4) influenced Keynes to define consumption and asset-choice behaviour in terms of 'psychological laws'. Given the social conditioning involved both in individuals' motivation, and in their expectations formation, Keynes's use of psychology was not individualistic. By taking account of the diversity and creativity of individual behaviour, Keynes did not opt for the atomism of individualistic psychology, rather he opted for a combination of individualistic and social psychology. Keynes's views find a precedent in Smith (1759) who argues that individuals deceive themselves in imagining that greater wealth brings greater happiness; for Smith, this self-deception had the positive externality of creating the conditions for growth.

It was Keynes's conceptualization of human motivation and behaviour which determined the limits of his formal (deterministic and reductionist) economic analysis. If human behaviour necessarily includes the exercise of imagination and the expression of emotion, as well as reasoned action, then that behaviour cannot be captured in a determinate system, based on axioms or rules of rational human behaviour. Within a Cartesian/Euclidean framework, such a view of human behaviour would rule out scientific analysis altogether. But within the Keynesian

framework, analysis is still possible, since the axiomatic approach is rejected. In particular, since several chains of reasoning are admissible, it is possible to form conclusions as to predominant features of economic behaviour in any one context on the basis of historical, sociological or psychological analysis. Keynes's concept of animal spirits (Keynes, 1936, chapter 12), for example, as the moving force behind investment decisions, is a signal to the economic analyst to study indicators of investors' mood as a crucial variable in determining aggregate demand. If one understands how different moods are generated and what their consequences are, then actual economic events can be analysed more fully than any deterministic analysis would allow.

So far, all Post Keynesians would be in accord, with varying degrees of enthusiasm, with this characterization of microfoundations. But by releasing analysis from a strict, unified axiomatic framework, and by using groups as well as individuals as the unit of analysis, there is scope for a range of different theoretical developments. The two major developments within Post Keynesian economics are represented by the long-run analysis in the Ricardian and Marxian traditions and the short-period analysis more directly influenced by Keynes, emphasizing the significance of uncertainty and money for macroeconomic outcomes (with Kalecki and Robinson providing a bridge between the two).

Both strands of thought have developed around the common theme that unemployment is the outcome of systematic forces at work in a capitalist economy which determine effective demand. The nature of these forces is thus of crucial importance, and Keynes's way of representing them has led to considerable confusion. In particular, his use of a competitive framework seemed to reinforce marginalist supply and demand analysis (although it was not the *perfectly* competitive marginalist framework, with demand and supply schedules); he did, for example, adopt the neo-classical demand curve for labour, and a downward sloping marginal efficiency of capital schedule. Whether these devices were employed for expository reasons only, or not, they certainly eased the task of the neo-classical synthesis in viewing unemployment as the result of temporary phenomena rather than persistent forces. It has thus been a more difficult task for Post Keynesians to present a short-period analysis which could clearly be distinguished from the neo-classical synthesis, presenting the short-run choices between money, other financial assets and capital goods in a way which reflected the

systematic forces behind unemployment. This difficulty has not been relieved by sympathizers with the long-period approach who reject short-period asset choice analysis as detracting from perceptions of the systematic long-run forces (see Garegnani, 1978, 1979; Eatwell, 1979; Milgate, 1983; but see also Robinson, 1979; Nell, 1983; Barens, 1983; Harcourt and O'Shaughnessy, 1983).

The long-period analysis derives, methodologically, from Classical analysis, where expenditure and the determination of value are analysed by class, rather than the outcome of individual choices. While activity is conducted by individuals, that activity is determined by the class to which they belong. The framework is provided by production conditions rather than market conditions. The starting-point for the modern development from the Classical tradition was Sraffa's critique of the perfect competition framework of marginal analysis. Sraffa demonstrated logical inconsistencies within the marginalist framework, and that it could not generate a logical theory of income distribution, and then proceeded to demonstrate the possibility of a system which determined value independently of demand conditions, i.e. independently of market conditions. Reinforced by Robinson's work on monopolistic competition (and her logical critique of the neo-classical treatment of capital), and building on the independent work of Kalecki (1937) these developments encouraged a rejection of marginalist market analysis as being only tangential to the study of the questions of the level of output and employment and the distribution of income. Using the assumption of imperfect product markets within the manufacturing sector, profits could be shown to be the result of mark-ups on cost, employed in such a way as to promote accumulation. Thus the major portion of saving is conducted by capitalists, with a view to investment; supply is priced to increase surplus value, not to meet demand (see Steindl, 1945, 1952; Ball 1964; Eichner, 1973, 1976; Wood, 1975; Harcourt and Kenyon, 1976; Shapiro, 1977). Finally, the level of effective demand need not be the full employment level; there is no automatic mechanism whereby the labour market clears.

The short-period Post Keynesian analysis refers more explicitly to individual behaviour, and to short-run fluctuations in economic activity. It focuses on Keynes's three 'psychological' factors: the propensity to consume, liquidity preference and the marginal efficiency of capital. Attention is thus paid to choices made by individuals (albeit group-determined) between consuming and saving, between holding money and other assets, and between

new capital goods and other assets. As with the long-period analysis, however, demand and supply in any market (for consumer goods, money or capital goods) are, even if identifiable, not independent; indeed each is profoundly influenced by the current state of expectations, both short run and long run. Also in common with long-period Post Keynesians, from the common root of Kalecki's work, markets are not treated as perfectly competitive; in particular, product markets are sufficiently uncompetitive, and average costs sufficiently constant over the relevant range, that mark-up pricing is presumed to be generally employed. While a downward-sloping MEC curve suggests that Keynes himself postulated a U-shaped average cost curve, the result of diminishing returns to new investment can be shown to be consistent with constant average costs as long as demand is not perfectly elastic (see Chick, 1983, chapter 5; Sardoni, 1984). Indeed, since investment is determined by the marginal efficiency of investment rather than of capital, the relationship between investment and the rate of interest must refer also to elasticity of supply in the capital goods sector. As long as that elasticity is less than perfect *in the short run*, even an elastic MEC schedule will generate a determinate demand for investment relative to the rate of interest. But, in any case, neither a downward-sloping MEC or MEI curve implies a negative relation between investment (and thus the capital stock) and the rate of interest *over time*. The dominant factors posited by Keynes were the shifts in MEC due to changes in 'animal spirits' and the *interdependence* between financial markets and the capital goods market (and thus the expected rate of return on investment and on financial assets including money).

In spite of the protestations of some participants in different parts of the Post Keynesian group, their analysis can in fact be presented in a mutually compatible fashion. The insistence by some that only neo-Ricardian analysis is admissible, and others that only short-period analysis is admissible, reflects the pervasiveness of the Cartesian/Euclidean mode of thought, even among those who reject it in most aspects of their work; it encourages the notion of an exclusively correct scientific procedure. Joan Robinson's work, in contrast, sets a fine example of consistent use of both short-period and long-period Post Keynesian analysis (see Kregel, 1983).

The long-period analysis starts with general observations regarding behaviour; the accumulation motive, and the limited scope for savings out of labour income, relative to corporate or

capitalist saving. By establishing the capital requirements of particular levels of output, given the state of technology, conditions are established for the equality of planned saving and investment. These conditions define a centre of gravitation to which an economy will be pulled in the long run.

Short-period analysis, on the other hand, analyses actual outcomes as determined by the state of expectations in asset markets. These conditions thus determine the depth and persistence of cycles and, cumulatively, the long run as a series of short runs. But actual (and perceived) long-run trends act independently on investment plans in the short run. The resulting actual outcomes can then be compared with the conditions established by the long-period analysis to assess the *nature* of the centre of gravitation to which the economy is moving. Joan Robinson's 'Golden Age' set out the conditions for balanced growth while demonstrating the contradictions involved in the process of accumulation, rather than a prediction of what an actual outcome would be (see Gram and Walsh, 1983, pp.532-6). While the long-period analysis does not require microfoundations to generate the aggregative conditions for particular long-run outcomes to arise, microfoundations are required for the analysis of how an economy actually fares, relative to these conditions. For both Robinson (1965, p.101) and Kalecki (1971, p.165) the extrapolation into the long run of existing conditions is a significant benchmark for economic analysis and even as an influence on current behaviour, but it is an imaginary rather than concrete phenomenon.

Finally, developments within behavioural economics provide a firmer foundation for Post Keynesian short-period analysis; much of the rejection of Keynesian short-period analysis as 'neo-classical' stems from the invalid equation of microeconomic (and market) analysis with neo-classical microeconomics. Starting from the presumption of imperfectly competitive markets, with supply and demand interdependent, behavioural analysis studies the actual behaviour of consumers and producers, with emphasis on the institutional environment, and employing a type of social psychology reminiscent of the *General Theory* (see Loasby, 1976; Earl, 1983, 1984). Although the connection is not a straightforward one, this work can be fed into macroeconomic analysis by allowing a better understanding particularly of expectations formation, as well as the functioning of financial markets (see Dow and Earl, 1982). Behavioural analysis does not generate specific predictions of consumer, producer or investor behaviour,

but it does promote the type of understanding which reinforces the role of the expectations formation to which Keynes attached such importance (see Dow and Dow, 1985 and chapter 6 below). But, for macroeconomic analysis, it must be used in combination with analysis of the institutional and social environment within which individual behaviour is conducted (see Carvalho, 1983-84).

The (short-run) Post Keynesian treatment of microfoundations can perhaps best be illustrated in terms of the labour market. We will follow Chick's (1983, chapters 7 and 8) treatment, which is contrasted explicitly with the mainstream treatment which involves independent labour demand and supply schedules expressed with respect to the real wage, and conducive to clearing. (A more explicitly sociological treatment of labour market behaviour, emphasizing the segmentation of that market has been presented by Piore (1979). This type of analysis moves even further from the marginalist framework.)

First, wage bargaining is conducted in terms of the money wage, not the real wage. Employers have control over the price of their own product (which is the particular price relevant for their real wage calculation) as long as they operate in imperfectly competitive markets (or indeed as long as competitive markets are not in long-run equilibrium). Employers thus have the capacity to translate a money wage into a range of real wages, determined by the feasible range of product price changes. Workers, on the other hand, have no control whatsoever of their real wage over the contract period, the relevant denominator being the general price level. (Wage contracts will influence the general price level only in aggregate.) Nor do they have any firm knowledge as to what price level changes will be over that period. Their wage claims will be *influenced* by expectations as to changes in the price level, as well as by observed trends in wage differentials between them and other trades. But the relevant variable for wage bargaining is the money wage.

Second, the supply of labour above some full employment level (where there is no excess supply of labour at the going wage) is a positive function of the money wage. But, when firms anticipate sufficient demand for their products to justify an increase in employment above the full employment level, they must take into account the institutional fact that any wage increase designed to attract new members of the labour force must also be paid to the existing work force; a very significant increase in expected effective demand will be necessary before the firm will embark on

such an action. During the initial period of anticipated rising demand, then, prices are rising but money wages staying constant, so that real wages are falling. Real wages only have a chance to rise once the demand increase is sufficient to justify attempts to attract additional labour.

When product demand starts to contract, however, there is no mechanism to reverse the money wage increase. It is easier for employers to lay off excess workers than to institute a fall in money wages. For those workers still in employment, there is no incentive, and no mechanism generally, to induce a wage cut. More important, the unemployed have no mechanism for signalling their willingness to regain employment at a lower wage. The contraction in employment, then, is off the labour supply curve. Nor has it been possible to specify a labour demand curve, if only because the marginal cost of hiring is determined by whatever the labour force happens to be before an expansion. (Indeed the absence of a demand for labour curve would follow from the absence of a product demand curve, see Asimakopulos (1980-81, p.164).) Also, the money wage during the contraction, and during the early stages of expansion before full employment is reached, is whatever it happened to be at the peak of the expansion.

As Chick (1983, p.162) points out, the distinguishing features of this labour market theory are that:

1. There is no unique relationship between employment and *either* money or real wages.
2. The cyclical pattern of employment and wages is not reversible.
3. The money wage level throughout all of the cycle except the later stage of the cycle and the point at which money wages are allowed to rise is the result of historical accident.

It is important to note also that it is anticipated effective product demand which determines the demand for labour, not labour's marginal product. The marginal product of labour is relevant only at the next stage, when employers work out the wage which they will offer the labour they have already decided to hire (see Weintraub, 1956; Davidson, 1983a,b). Further, the distribution of income is determined once money wages are set; as we have seen, money wages through a large proportion of the cycle are determined by what they *happen* to be at cycle peaks.

This account of the determination of employment differs from

that in the long-period Post Keynesian analysis. The latter focuses on labour requirements in a steady state given the capital goods sector requirements determined by the aggregate demand for consumer goods, and given technological change. These labour requirements will in general fall short of full employment. Thus, within labour market analysis as such, no inconsistency arises between the two time dimensions of analysis: one sets out the path of short-term, cyclical fluctuations, while the other specifies the conditions for a long-run steady state, and both postulate a general condition of less-than-full employment. As we shall see in chapters 6 and 7, however, the difference in treatment of expectations and money *could* generate inconsistencies arising from the two different positions on microfoundations.

4.5 Marxian Theory

The Marxian position on microfoundations is the diametrical opposite of the neo-Austrian position, but with a similar methodological foundation in *a priori* knowledge. While neo-Austrians see the individual as the appropriate unit of analysis, Marxians see class as the appropriate unit of analysis. While neo-Austrians have *a priori* knowledge of the individual, Marxians have *a priori* knowledge of class, given class consciousness (see Hollis and Nell, 1975). For the neo-Austrians, macroeconomic aggregates derive their only significance from the individual behaviour which generates them; for a Marxist, individuals derive their behaviour from the social conditions of the class to which they belong. Not only is individual motivation class determined, there is also the possibility of class consciousness, which promotes individual sacrifice in the interests of the class. Methodologically, class performs a rôle in Marxian theory similar to groups in Keynesian theory, although the former is applied more deterministically, and more comprehensively. Individuals can thus more generally be regarded as representative individuals in a Marxian framework, in the same way as the rate of profit is regarded as a representative rate of profit.

The *a priori* knowledge of class relations is prompted by observation, as Kant would suggest. Indeed, Marx and Engels (who edited much of Marx's writings) were both steeped in factual knowledge of industrial conditions in England. (This tradition is being continued by, for example, Lazonick, 1979.) In

other words, their consciousness of class relations was derived from micro data. Evading any problem of induction, the *a priori* basis for knowledge allows generalizations to be *recognized* in the mind which were only stirred by particular observations. As a corollary, the generalizations at class level can also be applied at firm level or household level. Indeed attempts have been made to model Marxian theory along general equilibrium lines by making these microfoundations explicit (see Roemer, 1981, for example).

This does not mean that there is no tension between the individual and class. Rather, competition (among capitalists and among workers) imposes a behaviour pattern on individuals according to their class; capitalists are induced to invest rather than to consume, while workers are induced to offer their labour at lower wages than others. Marx (1857-58, p.248) argued, with respect to the apparent individuality of exchange that 'entirely different processes go on in which this apparent individuality, equality and liberty disappear' because 'exchange value already in itself implies compulsion over the individual'.

In addition, Marxian theory rests heavily on 'paradoxes' derived from the fallacy of composition. Competition among capitalists induces increased capitalization which reduces the rate of profit, for example. Unintended consequences of action are, however, compatible with a theory which attempts to capture the 'laws of motion' of capitalism; there is no requirement, imposed by any need for a static equilibrium solution, to be able to model a resolution of the paradox which would halt motion.

Marx's view of individual rationality within capitalism had much in common with that of Keynes (see Winslow, 1983), although he foresaw scope for increasing rationality within socialism. The social conditions of capitalism generated the motive of financial accumulation among owners of capital, and survival among workers (see Marx, 1867, p.739). Marx viewed such motivation as fundamentally irrational, in the sense that it was the outcome of 'false consciousness'. A rational motive for behaviour would be self-fulfilment in some form, but wealth in itself could not provide the fulfilment of any rational need if it was simply accumulated in such a way as to increase in value as much as possible (see Marx, 1857-58, p.162). Similarly, the acquiescence of workers in allowing their labour value to be exploited only allowed their survival in the sense of subsistence. If consciousness of their objective condition could be acquired, they would perceive their real interests as lying within a change from capitalism to socialism.

The level of employment is analysed in terms of secular trends in production, punctuated by crises. The competitive market structure of capitalism (in the Classical sense) encourages technological innovation and increasing capitalization, i.e. an increase in the organic composition of capital. Relative labour requirements are thus reduced, so that unemployment progressively increases. But, since labour surplus value is the source of profit, the rate of return on capital falls as this process proceeds. This process is offset by technological improvements and by imperialistic extensions of markets and of sources of labour. In addition, the increasing 'reserve army of the unemployed' can be used as a threat to workers remaining in employment, allowing subsistence wages to be lowered, and the fall in profit rates to be dampened. Say's Law is not in general satisfied since, although firms save only in order to invest, the timing and value of investment is dependent on expected profits as well as on conditions in financial markets. Say's Law would only be satisfied in a position of general equilibrium.

Marx postulated that there was scope for firms' expectations to be mistaken. If wages are kept too low to satisfy the supply of consumer goods, or if workers succeed in increasing wages, then actual profits will fall short of expected profits and further investment plans will be shelved. Savings already made will be hoarded in money form to avoid capital loss, since a widespread cutback in investment plans will start a downward spiral in product and asset prices, and demand for credit will increase to cover the earnings shortfall. The resulting general overproduction crisis causes an addition to the reserve army of the unemployed. It also causes bankruptcy among the weaker firms, lowering the value of their assets which are then bought up by the stronger firms. As a result the industrial structure becomes progressively more concentrated with every financial crisis.

The level of employment, then, is generally independent of the real, or nominal, wage, although attempts by labour to increase wages at the expense of profits may instigate increased capitalization of production, which neutralizes those attempts. Rather, the competitive forces in the process of accumulation are seen as the underlying forces, with wage rates and employment levels the appearance of these forces in exchange. Thus, while these underlying forces refer to relations between individual capitalists and workers, the forces are regarded as so generally applicable as to suppress individuality. The laws of motion of capitalism are not

seen as capable of influence by any individual action. Thus, the microfoundations of Marxian theory are such that the problem of co-ordination can be analysed at the level of class, i.e. at the macro level.

4.6 Conclusion

The relationship between the determinants of individual actions on the one hand and their co-ordination (or lack of co-ordination) as represented in macro outcomes, on the other, poses fundamental questions for all macroeconomic theory. But the discussion of microfoundations has been dominated by the particular problems posed within the general equilibrium school of thought. At one extreme, neo-Austrians avoid the problem by arguing that there is no macroeconomic knowledge other than that generated by microfoundations. The polar version of Marxian theory suggests that there is no microeconomic knowledge other than what derives from the macro, or class, level; by concentrating on production conditions as determined by the existence of competitive forces, Marxians can deal with the problem of lack of market co-ordination in terms of macroeconomic aggregates. (The analysis of crisis, however, does require more explicit reference to market behaviour.)

The Post Keynesian approach does not take either of these extremes, but is also a holistic approach which attempts to avoid any logical micro-macro inconsistency. First, some participants study conditions for long-run steady states, which need not contradict (even if they do not employ) the short-run analysis which explicitly recognizes its microfoundations. Second, the unit of analysis is frequently groups, on the grounds that this provides macrofoundations for microeconomic behaviour. But group behaviour is not deterministic in that it is susceptible to shifts arising from diversity of behaviour, as well as unfulfilled expectations. The presence of unfulfilled expectations resulting from conflict between individual actions and the macro outcome are compatible with an analysis which does not require static equilibrium solutions.

Microfoundations have constituted a continuing problem for 'Keynesian' macroeconomics within the neo-classical synthesis, because the latter does appear to contradict the principles of neo-classical microeconomics, which are the only recognized

microeconomics within this school of thought. Indeed this acceptance of a common framework for microeconomic analysis is an important unifying factor in mainstream economics. A fundamental source of difficulty is the reference point of equilibrium, which precludes conflict between micro behaviour and macro outcomes, i.e. which requires successful co-ordination.

In so far as a logical micro-macro inconsistency is regarded as acceptable, macroeconomics has continued in purely aggregative terms, within a neo-Walrasian general equilibrium framework, by imposing constraints on individual behaviour and studying disequilibrium conditions; this is what is commonly known as neo-classical theory. 'Pure' general equilibrium theorists, however, deny any justification for these constraints, or for studying behaviour out of equilibrium, on the basis of the axioms of rational individual behaviour. The former, neo-classical, group allow interesting questions to be addressed but at the cost of adopting a theoretical structure which is not logically complete. The latter, pure general equilibrium, group severely limit the scope of their analysis, but retain logical consistency. Both, however, had as the ideal a complete micro-macro system deduced from the axioms of individual rationality.

The treatment of microfoundations, and their relationship to macroeconomics, is conditioned significantly by the use of equilibrium within the framework employed. Indeed it is this concept alone which seems to divide neo-Austrians and mainstream theorists. In the next chapter we turn to the equilibrium concept to see how each school of thought deals with it.