Chapter 6
The Keynesian Model with Money

Following a reappraisal by Clower (1965, 1967) and Leijonhufvud (1968) of attempts to analyze unemployment phenomena in the Keynesian spirit in monetary environments Barro & Grossman (1971), Benassy (1975b), Drèze (1975), Younès (1975), Malinvaud (1977), and others presented pioneering work integrating disequilibrium trading principles into the Hicksian monetary intertemporal framework. This induced a reconsideration of the Keynesian criticism of equilibrium theory as being an inadequate tool to describe unemployment situations in aggregative economies. Within two decades a considerable number of publications presented extensions and justifications for this approach attempting to provide microeconomic foundations to Keynesian macroeconomics with unemployment configurations. The surge of publications with the joint perspective of microeconomic foundations to potential macroeconomic applications was designed to describe a modeling framework to characterize stationary disequilibrium configurations with typical permanent price and wage rigidities.

The contribution of that literature consists in developing general principles and concepts of trading under situations without market-clearing and defining associated allocative equilibrium concepts. Following the original contributions by Drèze (1975); Younès (1975); Barro & Grossman (1976) general approaches were presented as a new macroeconomic theory for disequilibrium allocations with price rigidities (as in Benassy, 1983, 1986; Malinvaud, 1980; Böhm, 1980, 1989). These are defined as a system of prices and constraints which guarantee market clearing under an extended concept of excess effective demand and quantity constraints as an extension of the standard equilibrium in the sense of Arrow and Debreu (see Drèze, 1991, 2001; Younès, 1975). By construction these so-called fixed-price equilibria are a static equilibrium concept within an arbitrary temporary situation of an economy detached from dynamic considerations. Therefore, as in the theory of temporary equilibrium with market clearing, this literature does not provide a description of the intertemporal adjustments of prices and constraints between any two periods as a descriptive part of the temporary configuration in an economy.

The realization of fixed-price equilibria requires and is perceived of as a virtual adjustment mechanism à la tâtonnement (dually recognized by researchers in the area.
and expressed by Drèze, 1991, 2001). Its equilibrium points are not the limit point of a dynamic adjustment mechanism of prices and constraints of the Hicksian model, but only a zero of an excess demand system extended to prices and constraints (see Drèze, 1991, 2001). Therefore, prices and constraints satisfy static rigidity conditions or consistency. They do not describe rigidity or persistence of prices over time.

This literature did not receive general acceptance as a foundation for stationary configurations of a dynamic macroeconomic theory as originally intended by its proponents. The critics claim that it fails to provide sufficient reason why prices are necessarily rigid to explain for example a lasting or a permanent cause for unemployment. The critique is justified since the allocative description of equilibria at fixed prices is an extended static equilibrium concept detached from dynamic considerations in the Hicksian sense of intertemporal adjustments.

In order to overcome the critique it is conceptually meaningful to apply the rationing methods and use the trading principles to model a dynamic adjustment of prices – but remove the consistency conditions (and the tâtonnement requirement) of the short-run equilibrium concept based on relations between rigid prices and constraints. In other words, the rationing is assumed to occur at temporarily inflexible prices which are wrong (measured by excess demand criteria), i.e. temporary price rigidity prevails in a state of an intertemporal economy. Then, dynamic price rigidity is said to prevail if it is a stationary state of the economy with price adjustment, i.e. a fixed point of the dynamical system with total rigidity, or an invariant set (or an attractor) with restricted rigidity, but not the zero of an extended modified static excess demand function based on a tâtonnement adjustment in a virtual quantity setting. Chapters 6 to 8 provide the associated extensions of the model of Chapter 3 without imposing the equilibrium conditions on constraints showing that the trading principles allow inferences on dynamic, i.e. intertemporal rigidity when combined with dynamic price adjustments.

6.1 Disequilibrium: Trading when Markets Do Not Clear

Invoking the rationing principles of the literature of fixed-price equilibria in situations when equilibria on the commodity market or the labor market do not exist implies a natural extension of the equilibrium model of Chapter 3 to analyze consistent income determination and feasible trading in markets. But it can also be applied successfully when prices and wages are not sufficiently flexible in the given period to obtain simultaneous equilibrium in the two markets. In particular, when both of them are fixed at the beginning of each period trades and incomes have to be determined under disequilibrium conditions before prices and wages readjust at the beginning of next period.

In order to describe feasible allocations with market evaluations in disequilibrium under general economic principles it is necessary to define trading rules which imply feasible allocations under income consistency at all prices and wages in every period. Formally, this means that a generic state of the economy in an arbitrary