NONCLEARING MARKETS: MICROECONOMIC CONCEPTS AND MACROECONOMIC APPLICATIONS

Jean-Pascal Bénassy

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RESEARCH QUESTION

Provide a micro foundation for the New Keynesian Model

POSITIONING

- Don Patinkin (1956), Robert Clower (1965), and Axel Leijonhufvud (1968)
  - Agents need to be quantity-constrained
- Robert Barro and Herschel Grossman (1971)
  - Aggregate fixprice model (other than quantity constrained)
- What's missing?
  - Rational price formation + general equilibrium
- What does this paper do?
  - General equilibrium model with a non-clearing market where price is endogenous

EQUILIBRIUM

DEFINITION 2: *A fixprice equilibrium for a given set of prices p is characterized by transactions z_{ih}^*, $i = 1, \ldots, n$, $h = 1, \ldots, \ell$, and quantity constraints $\bar{d}_h$ and $\bar{s}_h$, $h = 1, \ldots, \ell$, such that:*

(a) $\sum_{i=1}^{n} z_{ih}^* = 0$ *for all* h

(b) *The vector z_i^* is solution in z_i of the following program:*

Maximize $U_i(\omega_i + z_i, m_i)$ such that

$$\begin{cases} pz_i + m_i = \bar{m}_i \\ -\bar{s}_h \leq z_{ih} \leq \bar{d}_h \qquad h = 1, \ldots, \ell \end{cases}$$

(c) *If $z_{ih}^* = \bar{d}_h$ for some agent i, then $z_{jh}^* > -\bar{s}_h$ for all agents j.*
If $z_{ih}^* = -\bar{s}_h$ for some agent i, then $z_{jh}^* < \bar{d}_h$ for all agents j.

DEFINITION 3: *An equilibrium with price makers is characterized by a set of prices p_i^*, net demands $\tilde{z}_i$, transactions z_i^*, and quantity constraints $\bar{d}_i$, $\bar{s}_i$ such that:*

(a) $p_i^* = \psi_i(p_{-i}^*)$ *for all* i

(b) $\tilde{z}_i$, z_i^*, $\bar{d}_i$, $\bar{s}_i$ $(i = 1, \ldots, n)$ *form a fixprice equilibrium for the price vector p^*, i.e., they are equal respectively to $\tilde{Z}_i(p^*)$, $Z_i^*(p^*)$, $\bar{D}_i(p^*)$, $\bar{S}_i(p^*)$.*

MODEL - EDGE BOX VERSION

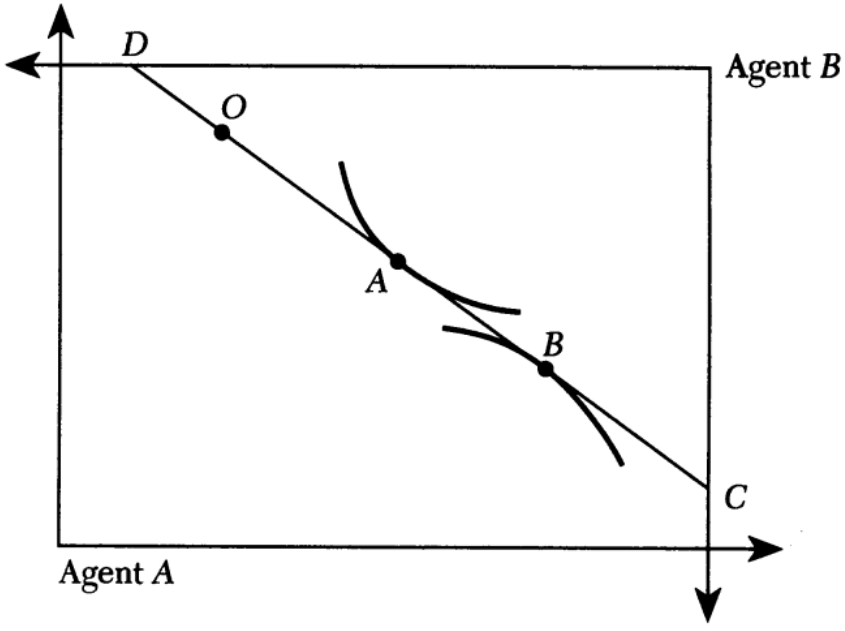

Figure 2.

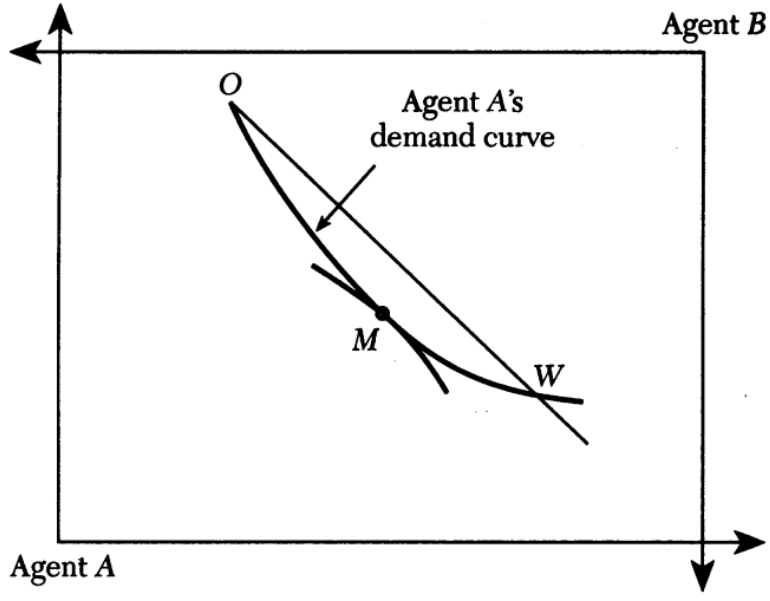

Figure 3.

LIMITATION

- Trade-off between the objective demand function and the general equilibrium
  - General equilibrium -> price must be set up under effect of all markets (includes both income and substitution effect at least)
  - Objective demand function is tough to derive in cases that are more complicated than the edge box exchange economy
  - This paper used a subject demand function to apply the model in a macro context
  - New Keynesian model solved the objective demand function in partial equilibrium (one firm changes price will not influence the price index)