Local Independence, Monotonicity, Incentive Compatibility and Axiomatic Characterization of Price-Money Message Mechanism[*]

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Abstract

To characterize money in a static economic model, it is known to be important to consider the agent-commodity double-infinity settings, i.e., the overlapping-generations framework. There does not seem to exist abundant literature, however, treating the axiomatic characterization problems for such monetary Walras allocations under the social choice and/or mechanism design settings. We show that the monetary Walras allocation for the economy with double infinities is characterized by *weak Pareto-optimality*, *individual rationality* and *local independence* or the *monotonicity*, or the *incentive compatibility* conditions of *social choice correspondence* among the *allocation mechanisms with messages* under the *category theoretic* approach in Sonnenschein (1974). We utilize Sonnenschein's market extension axiom for *swamped* economies that is closely related to the *replica stability* axiom of Thomson (1988). We can see how these conditions characterize the price-money message mechanism *universally* among a wide class of mechanisms, and *efficiently* in the sense that it has the minimal message spaces (*price-money dictionary theorems*). Moreover, by using the category theoretic framework, we can obtain the up-to-isomorphism uniqueness for such a dictionary object (*isomorphism theorems*).

KEYWORDS : Resource Allocation Mechanism, Social Choice Correspondence, Overlapping-Generations Economy, Monetary Walras Allocation, Local Independence, Monotonicity, Incentive Compatibility, Universal Mapping Property

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