

## MULTI-SECTOR CURRENCY FLOWS BASED ON THE INPUT-OUTPUT MODEL, PART 1: THEORY AND TECHNIQUES

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**ABSTRACT.** *This paper imitated the Leontief input-output model to study the multi-sector currency flows according to the characteristics of the currency flow. We classified all subjects of the social economic system into several sectors, and described the components of the currency flows for every sectors. We established a gridiron type table that can simulate the real interdepartmental currency flows of the economic system, and gave out several quantitative equilibrium relations in the input-output table. After we separated the deposits and loans respectively from the currency inflows and outflows of commercial banks, we obtained two mathematical models that are consistent with the Leontief input-output model. On the assumption that the ratios of currency inflows are fixed, we deduced the horizontal input-output equations, and on the assumption that the ratios of currency outflows are fixed, we deduced the vertical input-output equations. We introduced the concepts of direct inflow coefficient, complete inflow coefficient, direct outflow coefficient and complete outflow coefficient. By means of the complete inflow coefficient matrix and the complete outflow coefficient matrix, it is easy to study the quantitative relations between the gross currency flows of sectors and commercial banks' deposit and loan scale.*

**Keywords:** Currency flow, Currency inflow, Currency outflow, Input-output model

**1. Introduction.** As is well known, the value transformation exists almost every aspect of the social economic system, and because of the intermediary role of currency, the involving subjects of the currency flows are omni bearing and systematic. The traditional theory usually classified economic subjects into the government sector, commercial banks, central bank and social public. However, this dim definition of “social public” in traditional classification goes against the further study of money supply and demand theory. Undeniably, the other subjects (the social public in traditional classification) except the government, commercial bank and central bank, have some common characteristics on the currency revenues and expenditures, but owing to the diversified affecting factors of currency flowing such as the income source and amount, business features, behavior habit and cultural custom of the microscopic subjects, different social public subjects usually show some differences with each other in their currency activities. Researching the holistic regularity of currency flows by studying the features of each subject one by one is impractical, so it is more reasonable to classify all the subjects into several sectors based on their characteristics on currency revenues and expenditures, and figure out the currency inflow and outflow regularity by studying these sectors from medium-view. In the study of the currency flowing system composed of several sectors, there are some problems as follows: what specific items are the interdepartmental currency flows composed of; what are the number and ratio of each sector's currency inflows from other sectors; what are the number and ratio of each sector's currency outflows to other sectors; what is the economic