

## MULTI-SECTOR CURRENCY FLOWS BASED ON THE INPUT-OUTPUT MODEL, PART 2: MODEL ANALYSIS AND APPLICATION

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*ABSTRACT.* In part 1 of the author's paper, we have gotten two kinds of input-output models of multi-sector currency flows, and studied the theoretical property of the models proposed. This paper studies the application of these models. Through setting reasonable values to the direct inflow and direct outflow coefficient matrix, we computed the real complete inflow coefficient matrix and the real complete outflow coefficient matrix. By these matrixes, we did research on the quantitative relations between the commercial banks' deposits and loans and the total currency flow of all the sectors, and studied the influence of one sector's deposits and loans to all the other sectors. The results showed that the model proposed in this paper confirms to the economic meanings of currency flows very well. At last, this paper proposed a monetary policy-optimizing model based on the vertical equilibrium relations, and deduced the corresponding mathematical formulas.

**Keywords:** Currency flow, Currency inflow, Currency outflow, Linear programming

**1. Introduction.** This paper is the subsequence of the author's paper. In part 1 of the author's paper, we classified all subjects of the social economic system into eight sectors, described the components of the currency flows for every sector, established a gridiron type table that can simulate the real interdepartmental currency flows of the economic system, separated the deposits and loans respectively from the currency inflows and outflows of commercial banks, and obtained two kinds of input-output table, so we obtained the 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 introduced the concepts of direct inflow coefficient, complete inflow coefficient; on the assumption that the ratios of currency outflows are fixed, we deduced the vertical input-output equations, and introduced the concepts of direct outflow coefficient and complete outflow coefficient. Part 1 is the theoretical foundation of the research using Leontief input-output model to study the multi-sector currency flows.

This paper studies the application of the models proposed in part 1. Through valuating the parameters and making hypothesis of the variables reasonably, and by means of the established model, we studied the holistic currency flowing regularity of economic system and proposed a method of studying the quantitative relationship between the bank deposits (loans) and the gross currency flow amount of the whole system. In Section 2, some main results and expressions in part 1 are listed for the purpose of integrality. In Section 3, we constructed one direct inflow coefficient matrix and one direct outflow coefficient matrix, which used the economic data of China, and gave a detail explanation about the elements of these two matrixes. In Section 4, we obtained the real complete