

Measuring Sub-national Savings and Interregional Capital Flows in India: An Application of Flow of Fund Accounts Approach

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National Accounts System (NAS) provides details on savings and investment by institutional sectors of the economy. The estimates permit identification of the net borrowers and lending sectors, along with size of the surplus or deficit at the institutional level. Financial Accounts in the Sequence of Accounts (SOA) given in the NAS further explains how net lending or net borrowing is effected by the means of changes in holding of various financial assets and liabilities. However details on who is financing whom and through which financial instrument cannot be identified at this level. Flow of Fund (FOF) Accounts answer these concerns by providing structure of the sources and uses of the funds of different sectors of the economy, and the financial mechanism by means of which inter sectoral transfer of funds (From Whom to Whom ---FWTW) take place. For each sector, when the credit instruments are arranged according to the order of liquidity, and each credit instrument is split up into various sectors, the net financial deficit of the deficit sectors as also the reliance on other sectors can be analysed. Similarly the net surplus of the surplus sectors and their role in financing the other sectors can also be studied. These estimates are prepared independently of the sequence of accounts, based on data from accounts of the institution or extraneous sources, when required break down is not available in the accounts of the institution.

Indian regional accounts at the subnational level are largely limited to measurement of the Gross and Net Domestic Product based on income originating approach. Further breakdown of macroeconomic aggregates in terms of consumption, savings, and investment at the state level is challenging because open interstate boundaries for commodity and factor flows make use of the estimation procedures followed at national level troublesome. Recognizing this, Committee on Regional Accounts (CRA, 1976) recommended use of direct data at the state level for preparing macroeconomic aggregates of income and expenditure which could further be used to obtain estimates of savings and interstate trade as residuals. Though some of the states are preparing estimates of capital formation through expenditure side approach, estimates of savings are not prepared at the state level. Independent efforts for preparing saving and investment estimates

have been made in the past largely following the expenditure side approach (Lakhchaura, 2004; Dholakia, 2006; Rajeswari et al, 2009; Sethia, 2016).

Use of expenditure side approach in Indian context is notorious for the underestimates generated in the survey estimates. For example NSS household consumption surveys measure only half of the consumption expenditure as reported in the NAS. This underestimates could be due to sampling design, recall biases, or deliberate underreporting, particularly for the items consumed at higher income level. Hence, any estimates of savings prepared based on NSS consumption expenditure directly suffers from measurement biases and errors in the NSS surveys. Other than these limitations, such estimates of savings do not capture the institutional details and role of financial instruments in carrying out the intersectoral transfers of funds. Flow of Fund approach at the state level can act as an alternative approach for estimating savings at the state level, with details at institutional and instrument level. Other than inherent utility of FOF accounts, attractiveness of the FOF approach also arises from the fact that the data for measuring FOF approach can largely be captured from the institutional sectors other than households. Hence, underreporting by the household sector does not pose as serious challenge as in case of expenditure side approach. Since there are two party to each transaction, accounts for households can be prepared based on data from other institutions. Even at the national level, accounts for household sector are prepared based on accounts of other sectors with whom household sector engages in financial transactions. Same can be followed at the regional level as well.

While attractive in terms of avoiding measurement issues related to household sample surveys, compilation of FOF at state level faces its own conceptual challenges and data gaps. Section 2 of the paper examines conceptual challenges involved in defining FOF at the state level. These challenges largely arises for federal government, multi-state firms, and financial institutions whose operations extend beyond the boundaries of individual states. Section 3 discusses the availability of data, gaps thereof for measuring FOF at the state level. Further, possible approach to address these conceptual and data gaps is explored here. Given the existing status of the data availability, it is possible to build accounts for financial institutions, general government, and household sector at the state level under certain reasonable assumptions. These three sectors accounts for around 70 percent of sources and uses of sectoral financial flows at the national level. Section 4 provides FOF estimates for three sectors at the state level. Finally, based on these FOF accounts, we explore the interstate flows of fund in Indian federal system.