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Income distribution in a regional economy: a SAM model

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Abstract

Social Accounting Matrices (SAM) are a numerical scheme of the circular flow of income. SAM-based multipliers can be used to determine changes in the relative income of economic agents. In this paper we investigate the process of income distribution in the Catalan economy, using the linear model of SAM multipliers. We also present an additive decomposition of the distributional incidence measurement provided by Roland-Holst and Sancho (1992). With this decomposition we can identify the various components in the overall process of income distribution among the agents of an economy. The approach pays special attention to the role of government in the process of income distribution.

JEL classification: C63; D59; H59

Keywords: Relative income; Distributional incidence; Government distribution

1. Introduction

Social Accounting Matrices (SAMs) are useful tools for analysing the composition of national income and national production. A SAM organises information about economic and social structure and provides a database for a multiplier model. In particular, the multiplier effects exhibit the determinants of nominal income cre-

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ation and measure the changes in the level of income of the endogenous accounts caused by exogenous and unitary inflows of income.[1]

The SAM framework can also be articulated into a setting of income distribution. However, the literature on SAM-based methods has fewer contributions from relative income determination than from multiplier applications. For income distribution analysis, Cohen and Tuyl (1991) presented an indicator based on the linear model of multipliers applied to the Dutch economy. Also, Roland-Holst and Sancho (1992) discussed an analytical context to study the income generation process and its distributional effects and presented an application to the US economy.

Our paper is also based on the social accounting framework and analyses the process of income distribution in the Catalan economy. We use the measurement proposed by Roland-Holst and Sancho (1992) to reflect the determinants of income distribution. One interesting aspect of this paper is that we further analyse the income distribution process by decomposing the redistribution matrix proposed by Roland-Holst and Sancho into three separate components or matrices. The first component reflects the exogenous injections that activate the distribution mechanism. The second component tells us how the multiplier process contributes to income distribution. The third component has a negative sign and shows the initial relative income in every endogenous account. With this decomposition, therefore, we get to the bottom of relative income determination and identify the components involved. Another particularly important aspect is to analyse the role of government in the distribution mechanism. By introducing the public agent as an endogenous account in the model of multipliers, we can show the income effects due to public expenditure and public taxation when the government receives exogenous inflows of income.

This paper can help to explain the intensity and importance of exogenous shocks on the income distribution mechanism. In particular, it can extend our knowledge of income distribution effects due to variables controlled by public institutions, such as taxes and transfers. This kind of information is very useful for policy makers. Our results show, for instance, that injections of income to activities mostly benefit the relative income of the richest active households. On the other hand, exogenous injections of income to government mostly benefit the relative income of inactive households, which are mainly those of pensioners. This kind of empirical evidence is very important for policy making, mainly if the policies are aimed at modifying the distribution of income among economic agents.

The paper is organised as follows. Section 2 sets out the multiplier method and the context of relative income determination. In this section we break down the total distribution process into separate effects. In Section 3 we apply the distribution context to a 1994 SAM for the Catalan economy. At the end of the paper we provide some concluding remarks.

[1] See Stone (1978), and Pyatt and Round (1979) for an analysis of the SAM-multiplier procedure.