How Can Tax Policies and Macroeconomic Shocks Affect the Poor? A Quantitative Assessment Using a Computable General Equilibrium Framework for Colombia

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During the past decade, particularly after the 1998-99 Colombian economic recession, economists have developed a renewed interest in the analysis and evaluation of welfare changes induced by public policies and economic shocks. The existing instruments to do this kind of exercises have usually lacked or excluded detailed microeconomic information that is relevant in the understanding and determination of the channels through which macroeconomic shocks affect the income distribution structure in Colombia. As a result, this research intends to fulfill this gap by presenting a simple static applied general equilibrium model in which a micro-macro link was built by reconciling the 1997 quality of life survey data with aggregates of the national

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accounts system. Specifically, by introducing a set of 8,701 households within a consistent macroeconomic framework, the model is able to produce poverty and income distribution indicators for specific segments of the population in four simulated scenarios: a reduction of tariffs, a general VAT rate for all products, a fall of the foreign inflows and a rise of the government obligations with the rest of the world.

Despite the simple Arrow-Debreu structure implemented here, the estimated results are qualitatively and quantitatively important, specially in measuring the inequality and poverty changes that can arise as response of exogenous shocks.

I. INTRODUCTION

Over the past few years there has been a renewed interest in analyzing and quantifying the distributive effects of policy decisions and economic shocks in terms of poverty reduction and welfare improvements. After enjoying a sustained positive economic growth, the recession of the late nineties, triggered by the economy's vulnerability to international markets fluctuations, the credit crunch and the unsustainable trend of public expenditure and indebtedness[1], led to several changes in the economy, especially in terms of social welfare. Urban unemployment reached historic levels in 1999 when it rose almost ten percentage points above the observed rate in 1995 (8.7%). National poverty rate climbed from 50.3% in 1997 to 59.8% in 2000; the poverty gap increased seven points to 0.5[2]. Income inequality between the poorest 20% of the population and the richest 20% rose from 23 in 1997 to 26.3 in 2000[3].

Although this economic reversal was the result of the economic performance displayed by the country and the region during that period of time, policy makers

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[1]   See Echeverry (2001) for a complete description of the economic events of the past decade.

[2]   The poverty gap is the standard deviation of the effective income of the poor people to the poverty line.

[3]   Baldión and Baltazar (2001)

had a significant role by taking the necessary decisions to correct the downward tendency. As a matter of fact, most of the decided strategies to reduce fiscal deficit were related to increasing tax revenues and in a lesser extent, reduction of expenditures, from which social investment was not an exemption[4]. Notwithstanding, if these measures had not been taken, the deterioration of the social indicators could have been worse than what was observed in those years.

Despite those facts, Colombia made a sustained effort in raising social public expenditure over the last decade (an annual growth rate of 3.5%), which has been a considerable help to the poor and the reduction of inequality. Complete elementary education (for children between 12 and 17 years old) rose from 78% in 1988 to 89% in 1999. The share of the population with health care increased from 23.7% in 1993 to 57.2% in 2000[5].

According to the government, in the following years Colombia will enjoy of a modest positive growth of around 4%, supported by i) increases of nontraditional exports and the positive effects of free trade agreements with the United States, the Andean Community and Mercosur; ii) the rationalization of public expenditure, specifically, operating costs from the reduction of the government size, which will free local resources for investment; and iii) a better economic outlook for foreign investment. At the same time, a significant rise of the public external debt service (thereby increases in the tax rates), social security costs and the deterioration of internal military conflict, are expected.

Given all these changes in the economy, it is important to understand which channels are the most efficient ones when it comes to assess policy effects over poverty and income distribution. Some economists have provided answers regarding this matter by using microeconomic methodologies that consider the household or individual income as functions of socioeconomic characteristics (e. g. age, schooling years, marital status) and income variables (e. g. rents, social transfers). Other researchers following Orcutt's works on microsimulations[6], have been able to improve their findings by linking their microeconomic assumptions and information into a macroeconomic framework. This allowed them to evaluate in detail, the

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[4]   Fiscal austerity affects the budget of social programs, hence, less resources are destined to social investment and the improvement of the quality and size of the existent activities.

[5]   Sarmiento *et al.* (2000) and Baldión and Baltazar (2001).

[6]   Taken from Davies (2003).