

The Divisia Method of Tax Elasticity Estimation

G. Subrahmanyam & D. Balaiah

1.0 INTRODUCTION

Forecasts of state tax revenues become essential for more than one purpose. First, revenue projections provide a useful starting point for working out the long-term prospects of growth and income responsiveness of state finances. Second, they provide a basis for analysing the past trends in the tax revenues in terms of the temporal movements in the tax elasticity parameter. Finally, separate information on the automatic growth and discretionary changes in the tax revenues helps state governments formulate plans for optimizing revenues from available sources. The objective of this paper is to gainfully adopt the Divisia method of total factor productivity measurement for the purpose of estimating tax elasticity - a parameter of paramount importance for federal-state fiscal devolutions - with more operational ease and minimum demands on data requirements than what the existing methods can do.¹ The remainder of this paper is organized as follows: Section 2 explains the twin concepts of buoyancy and elasticity, Section 3 first briefly explains the three existing methods of tax elasticity estimation, then the mechanics of the Prest-Manfield method and the newly adopted Divisia method are presented. Since the Prest-Manfield method is the most popular technique currently in vogue in the field of tax elasticity estimation and forecasting, we believe it would be appropriate to use it as a reference frame for evaluating the relative efficiency of our Divisia method. Section 4 reports empirical estimates of the elasticity parameter, applying both the methods for the General Sales Tax (GST) and the State Excise (SE) of the State of Andhra Pradesh in India: the reason for selecting this case study is that the author has gainfully applied these techniques, recently, in a tax-forecasting project for the state. Section 5 presents some concluding remarks.

2.0 THE TWIN CONCEPTS

The concept of tax buoyancy, defined as the ratio of percentage change in gross tax yield for one per cent change in state income, includes the effects of discretionary rate