ANALYSIS OF TRENDS IN ANNUAL COLLECTIONS OF COMPANY INCOME TAX WITHIN NIGERIA FROM 1989 TO 1999 USING TIME SERIES AND FINITE DIFFERENCE MODELS

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Abstract

A time series analysis is adopted to carry out comparative studies of the trends of revenue collections by the Federal Government on company income tax collections between the period of ten years (1989 and 1999). A set of secondary data on revenue collections obtained from the Federal Inland Revenue Services (FIRS) is used. The aim is to examine and analyze the trend to which revenue is generated within the periods in review using time series analysis; determine the factors that bring about fluctuations and forecast the revenue generation for the years ahead. In order to come up with authentic analysis, a central finite difference analysis is also carried out to compliment the study and develop a polynomial model for extrapolating for years ahead. However, based on the analysis of the collected data, the results suggested that there are more revenues generated within the middle years in review irrespective of the degree of fluctuations observed in graph of the original data. Notwithstanding these fluctuations, there is a prospect of growth in the collections for the years to come. Meanwhile efforts ought to be streamlined to aid in improving upon the total collections in years to come which will in turn facilitate achieving the economic and developmental goals within the country. Consequently, a consistent organization and analysis of the data on revenue collections over the years will ease the planning of the nation's economy and indirectly aid the monitoring of growth in investment, yields high income revenue for the country in tax and macro-economic scale in general.

References

[1] Z. Lu, D. J. Steinskog, D. Tjøstheim and Q. Yao, Adaptively varying coefficient spatio-temporal models, J. Roy. Statist. Soc. B 71 (2009), 859-880.

[2] C. Lam and J. Fan, Sparsistency and rates of convergence in large covariance matrix estimation, Ann. Statist. 37 (2009), 4254-4278.

[3] L. Alessi, M. Barigozzi and M. Capasso, Improved penalization for determining the number of factors in approximate static factor models, Statist. Probab. Lett. 80(23-24) (2010), 1806-1813.

[4] H. Cho and P. Fryzlewicz, Multiscale and multilevel technique for consistent segmentation of nonstationary time series, Statist. Sin. (2010) (to appear).

[5] K. Kalogeropoulos, G. O. Roberts and P. Dellaportas, Inference for Stochastic volatility models using time change transformations, Ann. Statist. 38(2) (2010), 784-807.

[6] S. Karris, Numerical Analysis using MATLAB and EXCEL, Orchard Publications, 3rd Edition, 2007, pp 7.1-7.11.

[7] D. Brink, Statistics Compendium, David Brink and Publishing ApS, 2010, pp 63- 68.