

Rank-correlations and value-correlations of Gross Domestic Product per capita in Latin American countries¹

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In previous research, some characteristic of the variation of the Gross Domestic Product (GDP) of the countries in the European Economic Area [1] and in Latin American [2,3] were reported. In [1] a new measure of correlation was proposed: the average overlapping index (AOI). It leads to find some hierarchies between complex systems components as an alternative to the classical Pearson's correlation coefficient [4]. The AOI can be interpreted as a sort of weighted average of the degree distribution of nodes on a network. In this contribution 19 time series of GDP/capita, one for each country belonging Latin American Area (LA), are investigated in various time windows, for the time interval 1960-2006. Two new correlation analyses, one ranked based and the other valued based, are also used in conjunction with the AOI in order to sort out clusters in the evolution of the GDP/capita for LA countries in the considered time span. This analysis is considered to yield some information about the structure of the evolution of the LA country clusters in a macroeconomic sense, given, or supported by some interesting geographical, political and economic facts.

Keywords

Gross Domestic Product, R/S analysis, time series analysis, correlation coefficients

References

- [1] M. Gligor and M. Ausloos, "Clusters in weighted macroeconomic networks: the EU case. Introducing the overlapping index of GDP/capita fluctuation correlations", *Eur. Phys. J. B.*, 63, p.533-540, 2008
- [2] Redelico F. O., Proto A. N. and Ausloos M., "Power law for the durations of recession and prosperity in Latin American countries" *Physica A: Statistical Mechanics and its Applications*, 387, p.6330-6336, 2008.
- [3] Redelico F. O., Proto A. N. and Ausloos M., "Linear and Nonlinear Correlation Analysis of Gross Domestic Product per capita fluctuation in Latin American countries" *Physica A submitted*
- [4] W. L. Hays, "Statistics" (*CS College Publishnig. New York, 1988*)

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