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Foreword

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This issue of *Metron* is one of the three special issues celebrating the hundredth anniversary of this journal. All the papers in this issue deal in a way or another with concepts and topics that were of prime interest to Corrado Gini, the founder of *Metron*.

In a short note, Giovanni Maria Giorgi, who was for many years the Editor of *Metron*, unveils some fascinating anecdotes related to the history of this journal. The rest of the issue includes six papers, each one of them introducing new tools of inequality analysis, in the largest sense of this term.

The first paper in this special issue, written by Decancq, is entitled "Measuring cumulative deprivation and affluence based on the diagonal dependence diagram". It starts by stating that there is more cumulative deprivation (affluence) in a society when more persons occupy bottom (top) positions in all dimensions of well-being. The diagonal dependence diagram consists of two curves obtained by taking the diagonal section of the underlying copula and survival functions, respectively. The area under each curve leads to a natural index of diagonal dependence. It turns out that the average of both indices equals a multivariate generalization of Spearman's footrule and is closely related to Gini's co-graduation index.

"From Gini to Bonferroni to Tsallis: An inequality-indices trek" is the title of the second paper. The authors, Eliazar and Giorgi, remind us first that the Gini index may be defined in terms of vertical and horizontal Lorenz based distances. They then show that another type of horizontal and vertical Lorenz based distances leads to the formulation of the known Bonferroni index and of a new Bonferroni index. They also stress the link between the new concepts introduced and the notions of Shannon and Tsallis entropy.

In "Measuring the Progress of Equality of Educational Opportunity in Absence of Cardinal Comparability" Anderson, Pittau and Zelli emphasize the fact that equality of opportunity requires comparison of distributional differences between circumstance groups over the full range of their variation. The authors introduce new techniques in the form of Gini-like coefficients for quantifying multilateral distributional differences in the absence of cardinal comparability. An empirical illustration looks at changes in the German educational system in the first decade of this century.

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In "Socioeconomic inequalities in child malnutrition in Egypt" Abu-Ismail, Gantner, Makdissi and Yazbeck define a health shortfall indicator of the social impact of child stunting. Using a recentered influence function regression framework, they then implement an Oaxaca–Blinder type of decomposition of the change in stunting shortfall between 2000 and 2014. They find no significant change in stunting shortfall because the endowment effect led to a decrease in this shortfall while the adverse economic conditions implied a structural effect in the opposite direction.

The paper on "Inequality of ratios", written by Yalonetzky, extends the literature on attainments and shortfalls when variables are bounded, by examining the consistency problem in inequality comparisons involving ratio indicators which also have two potential representations (e.g. number of people per room or number of rooms per capita in the case of overcrowding). Yalonetzky discusses the pros and cons of different possible solutions and gives an empirical illustration looking at intergenerational changes in overcrowding inequality in Mexico.

Finally Condevaux, Ouraga, Zambrano and Mussard, in a paper entitled "Generalized Gini Linear and Quadratic Discriminant Analyses", define what they call a "linear discriminant analysis" (LDA) in the Gini sense. Tests based on U-statistics are proposed while Monte Carlo simulations show the robustness and tend to confirm the superiority of the Gini discriminant analysis.

As can be seen, the topics covered in this issue embrace a wide range of themes that certainly were all of interest to Corrado Gini who was a statistician, a demographer, a sociologist, an economist and more generally a social scientist. My co-editors, Giovanni Maria Giorgi and Roberto Zelli and I, hope that the readers of this special issue will consider that the papers it includes are a nice tribute to the founder of *Metron* and a homage to all those who over the years published papers in this journal and contributed to its quality.