Preface

The conventional approaches to comparing tax progression (using local measures, global measures, or dominance relations for first-moment distribution functions) often lack applicability to the real world: local measures of tax progression ignore the income distribution entirely. Global measures are welfare indices that aggregate over the whole support of the respective income distribution. Thus, regions of higher tax progression are mixed with regions of lower tax progression, which may lead to ambiguous or counterintuitive results when comparing rather different income distributions and tax systems. Dominance relations of comparing tax progression depend heavily on the assumption that the same income distribution holds for all situations to be compared, which renders this approach inappropriate for international and intertemporal comparisons.

Based on the earlier theoretical work of one of the authors, this study develops a unified methodology of comparing tax progression using dominance relations under different income distributions. We address it as *uniform tax progression for different income distributions* and present the respective approach for both continuous and discrete cases, where the latter is a precondition for empirical investigations.

Using dominance relations, we define tax progression under different income distributions as a class of natural extensions of uniform tax progression in terms of taxes, net incomes, and differences of first-moment distribution functions. To cope with different monetary units and different supports of the income distributions involved, we utilize their transformations to population and income quantiles. Altogether, we apply six methods of comparing tax progression, which were adapted from dominance relations under the assumption of identical income distributions for the situations to be compared. Broadly speaking, they are related to tax elasticity and residual income elasticity. We also extend these measures by taking the difference of first-moment distribution functions of taxes (or net incomes) and of gross incomes. Three measures are defined in terms of taxes and three in terms of net incomes. We apply these measures to empirical analyses of comparisons of tax progression using data from the Luxembourg Income Study Database (LIS). This is the first study that performs international and intertemporal comparisons of *uniform* tax progression with actual micro data.

For our analyses we chose those countries for which LIS disposes of the required data on gross incomes, taxes, payroll taxes, and net incomes. This pertains to 13 OECD countries, viz. Australia, Canada, Denmark, Finland, Germany, Israel, Netherlands, Norway, Sweden, Switzerland, Taiwan (gained observer status in the OECD in 2002), United Kingdom, and United States. This selection of countries enables us to perform 78 international comparisons, which we carry out for household data and equivalized data as well as for direct taxes and direct taxes inclusive of payroll taxes. In total we investigate 312 international comparisons for each of the six methods of comparing tax progression.

In two-thirds of all cases of our qualitative analyses for *international* comparisons, we observe uniformly greater tax progression. In a bit more than one-fifth, we observed bifurcate tax progression, i.e., progression is higher for one country up to some population or income quantile threshold, beyond which the situation reverses, i.e., progression becomes higher for the second country. No clear-cut findings can be reported for just one-tenth of all cases. But even in these cases some curve differences are so small that they are negligible.

For qualitative analyses of *intertemporal* comparisons of tax progression, we present the results for the United States, the United Kingdom, and Germany for several time periods. We align our findings with respect to major political eras in these countries, e.g., George H. W. Bush, William J. Clinton, and George W. Bush for the United States; Margaret H. Thatcher, John Major, and Anthony C. L. Blair for the United Kingdom; and for Germany the last year before German reunification (1989), the beginning of Helmut J. M. Kohl's last term as chancellor (1994), and Gerhard F. K. Schröder (2000). In addition, we perform robustness checks with respect to the equivalence scale parameter.

Since the data of the Luxembourg Income Study are (representative) sample data, we also perform statistical tests of progression comparisons. The tests reveal even more dominance relations than we observe from our qualitative analyses. We combine the statistical and qualitative results for international and intertemporal comparisons to analyze tax progression in greater detail, driving quantitative judgments. In addition, we include a thorough and accurate description of the fiscal and social institutions in the surveyed countries. This information is indispensable for our integrative analyses.

Given the depth and broadness of our analyses, it is our sincere hope that this book presents the most detailed account of international and intertemporal comparisons of tax progression and its structural components in OECD countries. Our results demonstrate the usefulness of the proposed method of uniform tax progression for different income distributions.

Finally, we have the pleasure of expressing our gratitude and indebtedness to several people and institutions. Various discussion paper series were kind enough to disseminate preliminary versions of parts of this book. For helpful comments we are indebted to Fuad Aleskerov and the audience of his seminar at National Research University—Higher School of Economics, Moscow Affiliation; to Vyacheslav Chistyakov of National Research University—Higher School of Economics, Nizhny Novgorod Affiliation; to Nicolaos Papanicolaos of the University of Luxembourg; and to the participants of the 2010 Budapest Meeting of the Finanzwissenschaftlicher Ausschuss (whose as well as Dr. Papanicolaos' queries led to our reasoning in Corollary 3, Footnote 34 in Chap. 4, and Sects. 4.4.2 and 4.4.3).

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