Preface to the Fourth Edition

This is a substantially revised and expanded version of *Analysis of Panel Data* that considers new advancements in panel data analysis and streamlines and reorganizes topics discussed in earlier editions. The aim of this monograph remains the same: to comprehensively introduce panel econometric methodologies that are useful for identifying causal relationships among variables of interest to empirical investigators. Some empirical examples are also provided to give readers a perspective of the development of the field in the last half-century.

We start with modeling unobserved heterogeneity in additive forms for linear static and dynamic models, static and dynamic systems in structural and reduced forms, qualitative choice, limited dependent models, and some nonlinear models such as duration, count data, and nonparametric models. We then move to more complicated approaches to modeling unobserved heterogeneity, such as factor approach, spatial approach, and varying parameter models. We conclude with a chapter on the challenges of big data analytics to panel data analysis. However, no single monograph can cover the enormous contributions to panel data analysis. I apologize for the omissions.

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9 C C @ B + ! ! F F F 4 2 = 3 A : 5 8 6 C C @ B ! 4 5 A 6 ! C A B " # " # (! * ( ) # " " * " ' ((& ' " " #

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