Routledge
Taylor & Francis Group

Quantitative Finance

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/rquf20

Applied Econometrics

by Dimitrios Asteriou and Stephen G. Hall, Red Globe Press (2021). Paperback. ISBN: 978-1-352-01202-6

Ali G. Yucel

To cite this article: Ali G. Yucel (2022) Applied Econometrics, Quantitative Finance, 22:4, 635-637, DOI: 10.1080/14697688.2022.2054724

To link to this article: https://doi.org/10.1080/14697688.2022.2054724

Published online: 07 Apr 2022.

Submit your article to this journal

Article views: 380

View related articles

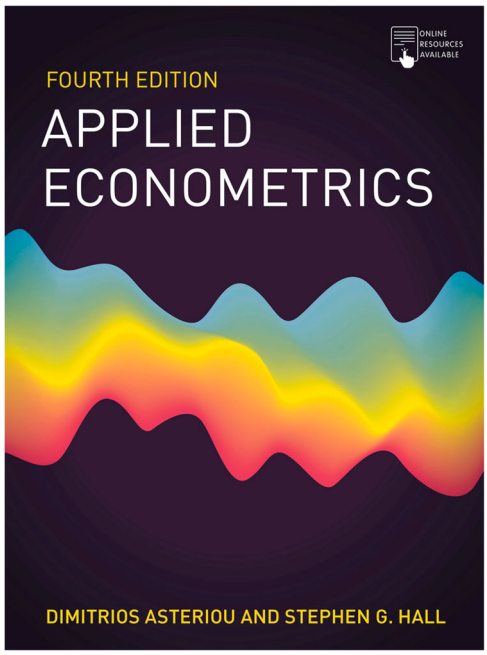
View Crossmark data

Full Terms & Conditions of access and use can be found at
https://www.tandfonline.com/action/journalInformation?journalCode=rquf20

Quantitative Finance, 2022
Vol. 22, No. 4, 635–637, https://doi.org/10.1080/14697688.2022.2054724

Routledge
Taylor & Francis Group

Book review



© 2021, Red Globe Press

Applied Econometrics, by Dimitrios Asteriou and Stephen G. Hall, Red Globe Press (2021). Paperback. ISBN: 978-1-352-01202-6

1. Overview

Econometrics is not among the most popular courses for many students. Students who fail to understand the statistical theories may get easily bored with the content of the course. The main culprit in students' lack of interest is probably the econometrics textbooks. I am of the opinion that one of the most perennial problems in the teaching of econometrics is the disconnection between theory and practice. Pure theoretical results without any examples, covering too many materials, irrelevant and outdated examples could be given as the reasons for this disconnection. However, *Applied Econometrics* by Dimitrios Asteriou and Stephen G. Hall, makes an excellent exception to this disconnection. The book serves as an excellent textbook to introductory econometrics and a valuable compendium of practical matters in econometrics. It stands out from many other econometrics books by combining econometric theory with practical application in a unique way. It easily presents relatively advanced concepts, follows a step-by-step approach, and provides many illustrative examples. The authors cover lots of material in a concise and straightforward manner and give a clear picture of how to bring in to use applied econometrics using real-world data. The book can also be seen as a rich source of empirical research topics for practitioners as the empirical analyses throughout the book can easily be applied across different country groups and time periods. The book also contains questions and exercises at the end of each chapter. A companion website features additional materials as well as a solutions manual for the instructors. *Applied Econometrics* might be used for a wide range of students from undergraduates to master's students as well as practitioners who want to learn how to use two of the most widely used econometric packages, EViews and Stata.

2. Description of contents

Applied Econometrics consists of seven parts, comprising 24 chapters and runs to 568 pages. It also includes an appendix of statistical tables. The book opens with an introductory Part I that warms up the reader to econometrics. Divided into two chapters, this part successfully engages the readers' interest in the book. While the first chapter presents the fundamental concepts of statistics necessary for econometrics, the second chapter introduces the structure of economic data and basic data handling, which is essential for empirical research.

Part II is devoted to the Classical Linear Regression Model (CLRM). Chapter 2 begins with simple regression, where the dependent variable is explained by a single independent variable. In this chapter, the core topics of econometrics such as assumptions of CLRM, properties of Ordinary Least Squares (OLS) estimators, overall goodness of fit, hypothesis testing, confidence intervals are discussed. The chapter ends with economic theory examples such as demand function, production function, Okun's law, and Keynesian consumption function. Chapter 3 extends the regression analysis to multiple parameters, derives multiple regression coefficients through matrix algebra, and provides computer examples.

Part III relaxes the assumptions of CLRM. From Chapter 5–8, violations of the assumptions of CLRM - multicollinearity, heteroskedasticity, autocorrelation and misspecification-, how to detect these violations and their consequences are discussed in detail with several examples.

Part IV is concerned with various topics in econometrics. Chapter 9 begins with dummy variables that are widely used in time-series studies. An appealing feature is that the authors include real examples from published papers. For instance, Table 9.8 and Table 9.9 in Chapter 9 presenting tests for seasonal effects in the book are Table 1 and Table 2 in Asteriou and Kavetsos' (2006) paper published by *Applied Financial Economics Letters.* This approach is very encouraging and motivating for the readers in that a simple seasonality test, along with many other tests introduced in the book, can be converted into a publication in a prestigious journal as long as the norms of econometric methodology are properly adhered to. Chapter 10 summarizes dynamic econometric models, which include both the lag and the time element in the regression. Distributed lag models, the Koyck (1954) transformation, the Almon (1965) transformation and partial adjustment models, adaptive expectations model are further discussed. Chapter 11 explores simultaneous equation models. Unlike previous econometric models, where there is only one single dependent variable and single equation, several dependent variables are determined simultaneously in these models, a case that is much more realistic in the real world. The fourth chapter, Chapter 12, is about limited dependent variable regression models where the dependent variable is a qualitative measure and, therefore, a dummy variable is employed in the left-hand side of the regression model. Logit, probit, and Tobit models are explained both theoretically and empirically in this chapter.

Part V delves into advanced econometrics, and it is entirely devoted to time-series econometrics. Time series is widely used by empirical researchers across a wide range of social science disciplines. Being the most comprehensive part of the book, this part consists of Chapters 13–20. Throughout the chapters, the authors touch upon ARIMA models, ARCH-GARCH models, non-stationarity as well as multivariate topics of VAR, cointegration, error correction models, and causality. A caveat of this chapter, however, is the absence of the most up-to-date econometrics tests. For instance, even though ADF (1979) and PP (1988) unit root tests are milestones in unit root testing, one cannot only rely on these tests in an empirical study as these tests do not take into account structural breaks. It is well documented in the literature that in the presence of a structural break conventional unit root tests suffer from severe size distortion.

Part VI focuses on panel data econometrics. The first chapter of this part, Chapter 21, is devoted to traditional panel data models. The authors briefly introduce the fixed effects model, random-effects model, and the Hausman (1978) test. At the end of this chapter, the authors describe how to insert panel data into EViews and Stata in a step-by-step fashion. Chapter 22 extends panel data analysis with dynamic heterogeneous panels by adding lagged dependent variables among the regressors. Chapter 23, the last chapter of this part, is on non-stationary panels. With the availability of large data sets and advancement in econometric software, the literature on non-stationary panels has tremendously grown recently. In this chapter, the authors briefly introduce the most common panel unit root tests and panel cointegration tests and also provide computer examples. A caveat of this chapter is that it only mentions first-generation panel tests. In contrast, the literature on testing non-stationary panels follows two strands as the first-generation and the second-generation tests (Baltagi and Pesaran 2007; Pesaran et al. 2013). First-generation panel tests adopt a highly rigid assumption of cross-sectional independence, which is hardly found in practice.

Consisting of Chapter 24, Part VII of *Applied Econometrics* covers basic features of EViews and Stata. Although this is the last chapter of the book, readers who are not familiar with these softwares are recommended to read this chapter first. Also, as all the data in the book are available on the web, interested readers and practitioners are strongly encouraged to replicate the empirical results.

Applied Econometrics is generally well-checked for errors except for a few typos. However, there is a severe lack of commas throughout the book, which can sometimes be a source of distraction. In addition, some of the in-text citations should be updated, and the list of references needs to be checked. There are mistakes with some of the publication titles, publication dates, and pages. For instance, as opposed to given as Jarque-Bera (1990), the normality test was published in 1980, the working paper of Asteriou and Kavetsos (2003) was already published in 2006, the publication title and pages of Asteriou and Price (2001) is partially wrong.

3. Conclusion

Overall, *Applied Econometrics* is an ideal companion for students and practitioners who quickly want to grasp the most common econometric techniques. The book also introduces EViews and Stata in a very understandable way. If there is a downside to this excellent book, it is that the material is introductory in principle. To overcome this, the book frequently refers interested readers to other texts for a deeper theoretical understanding of econometrics.

References

Almon, S., The distributed lag between capital appropriations and expenditures. *Econometrica*, 1965, **33**(1), 178–196.

Asteriou, D. and Kavetsos, G. Testing for the existence of the 'January effect' in transition economies. Working Paper No. 107, City University, 2003.

Asteriou, D. and Kavetsos, G., Testing for the existence of the 'January effect' in transition economies. *Appl. Finan. Econ. Lett.*, 2006, **2**(6), 375–381. doi:10.1080/17446540600706817.

Asteriou, D. and Price, S., Political instability and economic growth: UK time series evidence. *Scott. J. Polit. Econ.*, 2001, **48**(4), 383–399. doi:10.1111/1467-9485.00205.

Baltagi, B. H. and Pesaran, M. H., Heterogeneity and cross section dependence in panel data models: Theory and applications introduction. *J. Appl. Economet.*, 2007, **22**(2), 229–232. doi:10.1002/jae.955.

Dickey, D. A. and Fuller, W. A., Distribution of the estimators for autoregressive time series with a unit root'. *J. Am. Stat. Assoc.*, 1979, **74**(366), 427–431.

Hausman, J. A., Specification tests in econometrics. *Econometr.: J. Econometr. Soc.*, 1978, **46**(6), 1251–1271.

Jarque, C. M. and Bera, A. K., Efficient tests for normality, homoscedasticity and serial independence of regression residuals. *Econ. Lett.*, 1980, **6**(3), 255–259.

Koyck, L. M., *Distributed Lags and Investment Analysis*, 1954 (North-Holland: Amsterdam).

Pesaran, M. H., Smith, V. L. and Yamagata, T., Panel unit root tests in the presence of a multifactor error structure. *J. Econom.*, 2013, **175**(2), 94–115. doi:10.1016/j.jeconom.2013.02.001.

Phillips, P. C. B. and Perron, P., Testing for a unit root in time series regression. *Biometrika*, 1988, **75**(2), 335–346.

Ali G. Yucel

Department of Economics, Finance and Legal Studies, University of Alabama, Tuscaloosa, AL, USA;
Department of Economics, Erciyes University, Kayseri, Turkey

http://orcid.org/0000-0001-7509-7693

© 2022, Ali G. Yucel

Check for updates

Ali Gokhan Yucel is an assistant professor at the Department of Economics, Erciyes University (Turkey), and a visiting researcher at the Department of Economics, Finance and Legal Studies, University of Alabama (USA). His work has been published in prestigious journals such as *Applied Economics*, *Environmental Science and Pollution Research*, *Current Issues in Tourism*, *Tourism Economics*, *Sustainable Development*, *Sustainability*. His current research interests evolve around tourism economics, environmental economics and applied econometrics.