



許育進

中央研究院經濟研究所副研究員

代表作名稱：

- ★ Stephen G. Donald, and Yu-Chin Hsu. “Estimation and Inference for Distribution Functions and Quantile Functions in Treatment Effect Models.” *Journal of Econometrics* 178.3 (2014): 383-397.
- ★ Stephen G. Donald, Yu-Chin Hsu, and Robert P. Lieli. “Testing the Unconfoundedness Assumption via Inverse Probability Weighted Estimators of (L)ATT.” *Journal of Business & Economic Statistics* 32 (2014): 395-415.

得獎簡評：

許育進博士是經濟學門在最近幾年最優秀的年輕學者之一。許博士獲得博士學位至今不到五年，已刊登了 12 篇論文，其中泰半為經濟及管理學門的頂尖期刊，顯見其學術著作產量高且品質精。

許博士的研究領域是計量經濟理論，尤其是所謂的「處理效應」(Treatment Effect)的理論。這個理論的目的主要是設計統計方法，來檢測計畫執行的效果(Program Evaluation)或政策的成效分析(Policy Analysis)。這已經成為計量經濟學及整個社會科學的重要研究領域。主要是因為世界各國在教育、醫療及福利的支出不斷增加，亟需使用建立在嚴格統計推論的方法，來評估各種政策及制度的成效。

所有審查人都共同認定許博士已經是這領域有影響力的國際性學者，並推斷其將持續產出高品質的研究成果。許博士獲得本屆中央研究院年輕學者研究著作獎，實至名歸。

得獎人簡歷：

許育進先生畢業於臺大數學系，在取得臺大經濟所碩士學位後，赴美國德州大學奧斯丁分校取得碩士及博士學位。2010 年取得博士學位後，許先生任聘於美國密蘇黎大學哥倫比亞分校，擔任助理教授兩年，於 2012 年回臺後，受聘於中央研究院經濟研究所擔任助研究員，於 2014 年升等長聘副研究員。曾獲傑出人才基金會「積極爭取國外優秀年輕學者獎助」五年期(2012-2017)、科技部年輕學者養成計畫補助(2014-2018)、中央

研究院前瞻計畫補助(2015-2019)及科技部吳大猷先生紀念獎(2015)。許先生研究專長為計量理論，主要的研究主題為處置模型及不等式的假設檢定。

代表作簡介：

In “Estimation and Inference for Distribution Functions and Quantile Functions in Treatment Effect Models” published in *Journal of Econometrics*, we propose methods for estimating the entire distributions (CDF) of potential outcomes in a binary treatment effect model where the unconfoundedness assumption is satisfied. The estimation method is the inverse probability weighted (IPW) estimator of the CDF for potential outcomes and allows for the use of a nonparametric estimator of the propensity score. We also use these estimates and the inverse mapping to estimate the quantile processes associated with the distributions. We show that the estimators converge weakly to Gaussian stochastic processes. We then propose simulation methods to approximate these limiting processes. These results allow us to make inference regarding various forms of distributional treatment effects. For example, we can conduct tests for stochastic dominance relations between the potential outcomes. Also, those results regarding quantile functions allow us to test for the Lorenz dominance relations between the potential outcomes and to test for the quantile average treatment effects over a continuum of quantile indexes.

In “Testing the Unconfoundedness Assumption via Inverse Probability Weighted Estimators of (L)ATT” published in *Journal of Business and Economic Statistics*, given a (conditionally) valid binary instrument, we propose alternative nonparametric instrument variable estimators of local average treatment effect (LATE) and the local average treatment effect for the treated (LATT). These estimators rely on weighting by the inverse of the estimated instrument propensity score and are computed as the ratio of two estimators. We show our LATE and LATT estimator are asymptotically efficient.

More importantly, we propose a Durbin–Wu–Hausman-type test for the unconfoundedness assumption. On the one hand, if a binary instrument satisfying “one-sided noncompliance” is available, then the LATT parameter associated with that instrument coincides with the average treatment effect for the treated (ATT), and is consistently estimable using the estimator we proposed. On the other hand, if treatment assignment is unconfounded given a vector of covariates, ATT can also be consistently estimated using those estimators proposed in the literature. If the unconfoundedness assumption does not hold, then the estimators for ATT will generally converge to a different limit. Thus, the unconfoundedness assumption can be tested by comparing our estimator of LATT with the estimator of ATT.

得獎感言：

感謝中研院及評審委員對本人研究成果的肯定。感謝中研院提供優越的研究環境及研究上的支持。求學時期及研究的過程也得到很多老師的幫忙，讓我獲益良多。最後感謝家人朋友，分享我的喜怒哀樂，給予精神上的支持。