Notice of the Final Oral Examination for the Degree of Master of Arts of

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BBA, IBA (University of Dhaka, 2014)
MSS (East West University, 2018)

“Regression Discontinuity Design with Unknown Cutoff: Cutoff Detection & Effect Estimation”

Department of Economics

Friday, August 7, 2020
1:00 P.M.
Remote Defence

Supervisory Committee:
Dr. Felix Pretis, Department of Economics, University of Victoria (Supervisor)
Dr. Judith Clarke, Department of Economics, UVic (Member)

External Examiner:
Dr. Julie Zhou, Department of Mathematics and Statistics, UVic

Chair of Oral Examination:
Dr. Issa Traore, Department of Electrical and Computer Engineering, UVic

Dr. Stephen Evans, Acting Dean, Faculty of Graduate Studies
Abstract

Regression discontinuity designs are increasingly popular quasi-experimental research designs among applied econometricians desiring to make causal inferences on the local effect of a treatment, intervention, or policy. They are also widely used in social, behavioral, and natural sciences. Much of the existing literature relies on the assumption that the discontinuity point or cutoff is known a-priori, which may not always hold. This thesis seeks to extend the applicability of regression discontinuity designs by proposing a new approach towards detection of an unknown discontinuity point using structural-break detection and machine learning methods. The approach is evaluated on both simulated and real data. Estimation and inference based on estimating the cutoff following this approach are compared to the counterfactual scenario where the cutoff is known. Monte Carlo simulations show that the empirical false-detection and true-detection probabilities of the proposed procedure are generally satisfactory. Finally, the approach is further illustrated with an empirical application.