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Dear Members of the Search Committee,

Successfully defended my thesis on Dec 1st, I expect to complete my Ph.D. by May 2024. My research interest lies in econometrics, time series analysis, optimal test and financial economics. I believe my research qualifications and teaching experience fit this position.

My job market paper "optimal test for Markov switching" proposes a likelihood ratio test for fixed unit root against time switching unit root models. The testing problem is challenging due to nonstationarity and the presence of nuisance parameters not identified under the null. Tests are equivalent to the likelihood ratio test, thereby establishing asymptotic optimality. Moreover my tests are easy to implement as limit distribution are explicitly derived. My research has implications on jump detecting, bubble testing, and jump size estimation.

Worked as an instructor for a graduate level course: Time series analysis with application in R in 2018 at WashU, I was responsible for designing the entire curriculum and delivering instruction on various topics, including methods for estimation, testing, and prediction. Additionally, I provided an introduction to spectral analysis and non-parametric estimation techniques. During the course, I provided mentorship to students, guiding them through the fundamentals of R programming and assisting them in creating ARIMA models for predicting housing prices in the UK. I also taught two undergraduate courses: statistics; options futures and other derivatives when I pursued my master degree at Wuhan University. I am prepared to teach Econometrics from introductory level to advanced level, Statistics and topics in applied econometrics and time series analysis.

To support my application, I have enclosed my curriculum vitae and job market paper. The letters of reference will arrive shortly from the Department of Economics at Washington University. I am enthusiastic about the opportunity to contribute my skills and expertise to the econ department. Please feel free to contact me either by email at lizhang990@wustl.edu or phone: 314-502-1171 if I could provide any additional supporting documents.

Sincerely,

Li Zhang