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Forty's years of quantitative research in China: Retrospectives and perspectives

This special issue is dedicated to annual conference, “the 2019 CES China Conference” in Dalian, hosted by the Chinese Economists Society (CES) and School of Economics of Dongbei University of Finance and Economics. The theme of this conference is on quantitative economic research, which has received an increasing attention in the last 40 years in China and its focus is on original contributions to quantitative methods and empirical studies on important economic issues in China. How to apply and/or initiate quantitative methods to conduct empirical studies on important China economic issues is still an open question in the profession and practice. The aim of this special issue is to provide a high-quality focus on some recent theoretical and empirical developments in quantitative research in economics and finance as well as the related areas in China. The collection of 6 papers in this volume grew out of the contributed contributions made by scholars mainly from China, including Ying Fang, Dong Li, Ming Lin, Ningning Pan, Lingyu Sun, Shengfang Tang, Weiguo Wang, Xu Yan, Kai Xin, Xiuhua Xu, Yahong Zhou, Yinggang Zhou and Hongquan Zhu.

The paper “Dynamic panel data approach and HCW’s method: Assessing the effect of China (Shanghai) free trade zone on local GDP” by [Cai et al. \(2021\)](#) proposes an easily implemented dynamic panel data method to evaluate the impacts of place-based policies. The basic idea is to exploit both the cross sectional dependence and the serial correlation within a panel and implement a difference-in-difference decomposition, which is different from the method by [Hsiao et al. \(2012\)](#). This proposed model is easy to implement statistical inferences and can incorporate multiple treated groups at different time thresholds. The paper uses successfully the proposed method to explore the effect of the Free Trade Zone (FTZ) policy implemented in Shanghai at the end of 2013 on local GDP growth rate and compare it with that from [Hsiao et al. \(2012\)](#). The empirical results in the paper show clearly that the FTZ does have a positive effect on the local GDP growth rate and it adds about 1.2%–1.8% to the growth rate of the GDP per capita for Shanghai in 2014 which is about one fourth to one third of the total GDP growth rate per capita. This effect largely comes from the growth of the tertiary sector. The policy implication of this study implies that the FTZ policy should be implemented in other places in China.

The paper “Determinants in the forecast of the gross national income of China and India from 1952 to 2015” by [Colmenares et al. \(2021\)](#) proposes utilizing a wide variety of demographic, economic, and production indicators to assess their impact on the gross national income (GNI) in China and India based on the time period from 1952 to 2015. This paper presents a comprehensive and new fangled modeling process with stepwise, regularization and distributed lag regression approaches. Accordingly, theoretical results are corroborated through extensive diagnostic tests and an empirical check of the models’ predictive capacity. The empirical findings show clearly that GNI in China is most influenced by variables such as reserves in foreign currency and the dependency ratio, whereas variables of energy production and birth rate for India. Therefore, the policy implication of this study that China should relax the two-child policy, which was indeed adopted by the Chinese central government on May 31, 2021. Furthermore, due to the current value below the substitution rate, a gloomy outlook for China’s future population and economy is predicted. Conversely, a positive outlook is forecasted for India, given the low price in the future of oil-India’s primary raw material.

The paper “How do ‘gatekeepers’ affect credit risk?” by [Li and Zhou \(2021\)](#) investigates the relationship between auditor tenure and credit default swap (CDS) spreads of U.S. firms based on quantile regression approach to characterize heterogeneity. After allowing for common determinants of CDS spreads, auditor tenure exerts both statistically and economically significant additional impacts on the CDS market. Also, there are differential effects of common CDS spread determinants and auditor tenure in distributional sense. While common determinants of CDS spreads such as leverage, volatility, risk free rate, credit ratings, and earnings, have monotonically increasing impacts when CDS spreads (and their changes) are increasingly higher, auditor tenure primarily has the impact when CDS spreads are of low or median levels for less risky firms.

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The paper “The impact of investor structure on stock price crash sensitivity: Evidence from China's stock market” by Pan et al. (2021) adopts the perspective of institutional investors, explores the reasons for the difference in crash sensitivity in China's stock market, and finds empirically that: First, institutional investors' shareholdings is positively related to firms' stock price crash sensitivity. However, after dividing institutional investors into professional (represented by financial institutions) and non-professional institutional investors (represented by general legal persons), the paper finds that only professional institutional investors' shareholdings is negatively related to firms' stock price crash sensitivity. Second, the impact of professional institutional investors on the crash sensitivity is influenced by stock liquidity and media sentiment: when the stock liquidity of listed companies is good or the media sentiment is strong, the negative impact of professional institutional investors on the crash sensitivity is accordingly high. Also, by highlighting the investor structure, this paper attempts a pioneering exploration of the influencing factors of the difference in stock price crash sensitivity in China. Finally, empirical results enrich research on stock price crash sensitivity and the heterogeneity of institutional investors. They can also serve to guide regulatory authorities' development of institutional investors and efforts to maintain market stability.

The paper “Change-point detection for expected shortfall in time series?” by Sun and Li (2021) considers change-point detection issue for expected shortfall (ES), a popular risk measure in risk and portfolio management. Based on the self-normalized the cumulative sum type statistic in Fan et al. (2018) and the Wild Binary Segmentation (WBS) algorithm in Fryzlewicz (2014), this paper proposes a variant WBS procedure to detect and estimate change points of ES in time series. The strengthened Schwarz information criterion is also introduced to determine the number of change points. Also, Monte Carlo simulation studies are conducted to assess the finite sample performance of the variant WBS procedure about ES in time series. Finally, an empirical application is given to illustrate the usefulness of the proposed procedure.

The paper “A new quantile treatment effect model for studying smoking effect on birth weight during mother's pregnancy” by Tang et al. (2021) proposes a new quantile regression model to characterize the heterogeneity for distributional effects of maternal smoking during pregnancy on infant birth weight across different the mother's age. By imposing a parametric restriction on the quantile functions of the potential outcome distributions conditional on the mother's age, the paper estimates the quantile treatment effects of maternal smoking during pregnancy on her baby's birth weight across different age groups of mothers. The empirical results show strongly that the quantile effects of maternal smoking on low infant birth weight are negative and substantially heterogenous across different ages.

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