**2019 May Day 51MCM**

**Problem C：Valuation of China Kechuang Board Market Listing Enterprises**

Kechuang Board was announced by Chairman Xi Jinping at the opening ceremony of the First China International Import Expo on November 5, 2018. It is a new board which is independent from the existing main board market. The establishment of Kechuang board and the test of registration rule for IPO is a significant capital market reform measure to enhance the capability of service technology innovation enterprises, enhance market inclusiveness and strengthen market function. Kechuang board will supplement China's capital market, especially supplement the financing short board of growth-oriented technological innovation enterprises, which is expected to become China's Nasdaq market.

Recently, the Shanghai Stock Exchange has begun to accept applications for listing and issuing of science-based enterprises. How to evaluate Kechuang board listed enterprises is very important for investors. The traditional post-listing valuation of enterprises usually adopts the P/E ratio method. To evaluate the Kechuang Board listed enterprises, the P/S ratio method can be considered. (Kechuang Board does not have profit requirement for IPO listing, while adopting the P/S method to evaluate the temporary unprofitable enterprises is more reasonable.) As a new sector, Kechuang board’s valuation can refer to the average P/S ratio of NASDAQ market in the United States. However, due to the different profitability of enterprises listed and different structure of investors in the China market and the United States market, there are various differences in fundamentals and liquidity, which leads to the existence of valuation premium or discount in the valuation level of stock markets in China and the United States.

1. According to the data in the appendix 1 and appendix 2, the average P/S ratio is selected as the valuation level, please calculate the valuation level of the China A-share market (Shanghai Stock Exchange Index constituent stocks) and the American NASDAQ market in 2018, and also calculate the valuation premium or discount level between the two markets.

2. Establish mathematical models to quantitatively analyze the relationship between valuation level and basic indicators, liquidity indicators for China A-share market and American NASDAQ market, and compare the differences. Among them, the basic indicators include annual operating income, annual net returns to shareholders, annual return on net assets, etc. Liquidity indicators include the annual trading volume of individual stocks, annual trading amount of individual stocks, annual average turnover rate of individual stocks, etc.

3. Establish mathematical models to forecast the basic indicators and liquidity indicators of China A-share market and NASDAQ market in 2019. Based on the forecast results, please calculate the valuation level of the two markets in 2019.

4. As of April 27, 2019, the Shanghai Stock Exchange has accepted 93 companies to declare their listing process on Kechuang board, and published the basic indicators from 2016 to 2018 of those 93 companies（appendix 3）. Refer to the quantitative valuation model of the NASDAQ market, and the liquidity indicators of China A-share market to forecast the valuation level of the first batch of Kechuang board companies after listing.