

Do Macroeconomic Factors Affect IPO's in China?

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Abstract

This paper investigates the effect of macroeconomic variables on the numbers of IPOs in China. There are limited studies on this topic. Changes in macroeconomic variables such as interest rates, GDP (Gross Domestic Product), inflation rate and the unemployment contain useful information for stock market participants (Chen et al., 1986). 5 hypotheses are proposed for empirical testing using Co-integration and Vector Error Correction models. Data will cover the period from 2007 to 2012. We expect to find evidence of a significant negative relationship between interest rate and the numbers of IPOs, and a significant positive relationship between industrial production and the numbers of IPOs to be confirmed.

Keywords: interest rates, IPOs, Markov regime switching regression, China

I. Introduction

Companies fund their business ventures through debt or equity. Initial public offerings, IPOs are the process that

allows existing owners to sell their shares to the public in order to raise capital. Most IPOs studies fall under: initial underpricing, clustering and long-term underperformance (Ritter, 1991; Schultz, 2003; Loughran & Ritter, 2004). Lowry (2003) summarizes three factors to explain the variation in aggregate IPO volume in U.S. market; business cycle, investor sentiment and information asymmetry.

The Initial Public Offering (IPO) literature has documented dramatic fluctuations in IPO activity over time (Ibbotson and Jaffe 1975, Ritter, 1984; Ibbotson, Sindelar, and Ritter, 1988;1994; Lowry and Schwert, 2002; Pagano, Panetta and Zingales, 1998); Lowry and Schwert,2002; Pastor and Veronesi, 2005); Loughran and Ritter,1995); Baker and Wurgler, 2000). Finance theory suggests a positive correlation between market volatility and aggregate IPO volume (Schill, 2004; Pastor and Veronesi, 2005).

Macroeconomic factors have an

influence on number of IPOs (Tran & Jeon, 2011; Chen, 2009, 2007; Jovanovic & Rousseau, 2004; Campbell, Lettau, Malkiel, & Xu, 2001; Chen, Roll and Ross, 1986). This is because macroeconomic changes simultaneously affect the cash flow of firms and risk-adjusted discount rates. Macroeconomic variables such as interest rates, GDP (Gross Domestic Product), inflation rate and the unemployment contain useful information for stock market participants (Chen et al., 1986).

Unlike the USA, the Chinese IPO market is highly regulated by central government through the central bank. The central bank influences private capital flows and related asset price bubbles through monetary policy. The central bank intervenes to curb inflation (Chan, Wang and Wei, 2004; Fan, Wong, and Zhang, 2007; Megginson and Tian, 2007; Wan and Yuce, 2007).

Since 80% of all listed companies are once state owned, the China Securities Regulation Commission (CSRC) assumes the full responsibility for the

timing of each IPO according to the objectives of the government. IPOs process is a two-stage centrally planned process. First, the government grants annual quotas of the total number of new shares to be issued. Second, the quotas are distributed to the respective local government authorities or the central government ministries under whose jurisdiction firms will be chosen to go public. The time lag between offering date and listing date usually ranges from 3 days to over 12 years (Chen, Choi and Jiang, 2007).

Jensen and Johnson (1993) find that stock prices react negatively to increases in discount rates. A high risk-adjusted discount rate could cancel many investments already planned and reduce the number of feasible business investments (Fuerst, 2006). The macroeconomic relationships with IPO volume follow closely with the economic cycle which means when the country GDP is high then the number of IPO will also be high.

This paper investigates whether macroeconomic variables have any

influence on the number of IPOs in China. In theory as China economy fluctuates so does the number of IPO's. China is the world's largest market for initial public offerings (IPOs). New firms from China seek listing in foreign (USA, Singapore, Hong Kong) and mainland stock markets. The study on the influence of macroeconomic variables on IPO's is important for academics and practitioners alike.

The main objective is to determine the IPO trend in China and investigate the relationship between macroeconomic variables such as: nominal interest rate, foreign portfolio equity investment, industrial production, bank credit and stock market returns (Fama & French, 1989; Jensen, Mercer, & Johnson, 1996; Avramov & Chordia, 2006). These studies had also utilized these five variables to represent macroeconomic variables of a country.

According to (World Bank, 2012) report, China should complete its transition to a market economy through fiscal and financial sector reforms.

The removal of investment restrictions

has led to the market's diminishing segmentation from global capital markets and integration with global capital markets (Goetzmann and Jorion, 1999).

This research focuses on China for the following reasons: (1) the primary equity market has benefited from the government's privatization efforts (2) there has been foreign direct investment and (3) it is the largest IPO market.

II. Literature Review

Numerous studies have examined the dynamic relationships between stock market behavior and economic activities (Fama, 1981, 1990; Geske and Roll, 1983; Chen, Roll, and Ross, 1986). However, there are relatively few empirical papers that have investigated IPOs from a macroeconomic perspective (Loughran et al., 1994; Rydqvist & Högholm, 1995).

There are several ways to measure IPO activity - a volume measure such as the number of new issues (Ritter 1984) and a pricing measure such as the average level of underpricing (Ibbotson and Jaffe

1975, Ritter 1984). Studies have generally used graphical and autocorrelation analysis to describe these observation (Ibbotson et al. 1994, Loughran et al. 1994).

La Porta, Lopez-De-Silanes, Shleifer and Vishny (1997) find a strong positive influence of macro-economic variables, such as GDP growth rates, on the number of IPOs in emerging markets. Besides GDP growth rates, some researchers report that interest rates also influence the number of IPOs and the total amount raised through equity issues (see: Chang, 2009; Ameer, 2007; Neumeyer & Perri, 2005; Uribe & Yue, 2006; Jovanovic & Rousseau, 2004; Brau, Francis, & Kohers, 2003).

III. Hypothesis proposal

In order to confirm the positive relationships between the number of IPO's and macroeconomics variable we proposed the following hypothesis.

In *neoclassical economic theory*, there is a dynamic interaction between interest rate, financing and investment; interest

rate generates a "credit multiplier" effect and a monetary policy transmission shock. Brau et al. (2003) argue that interest rate affects the choice of IPO for takeover for new companies because when the interest rate is lower, acquiring companies can use more debt to finance the acquisition of the target, thus reducing IPOs and increasing takeover activity.

Jovanovic and Rousseau (2004) find that the relation between an IPO's volume and interest rate is non-monotonic. For very high levels of interest rate, IPOs are discouraged because future income is discounted more heavily, whereas for very low interest rates, there are gains to waiting until interest rates rise to favorable levels. Chang (2009) argues that interest rate is a tool to execute tight or loose monetary policy, which affects the stock market through credit channels (see, e.g., Bernanke & Gertler, 2001).

H1: There is a negative relationship between interest rate and the number of IPOs.

Kaminsky, Lyons and Schmukler (2001) report that mutual fund investments in the form of net private equity flows to East Asian emerging markets has been a major source of development for capital markets. U.S. mutual funds constituted the largest source of foreign capital for the emerging market firms (Aggarwal, Klapper, & Wysocki, 2005). According to the *capital demands hypothesis* (Lowry, 2003), when companies have higher demands for external capital, managers think of lower costs for raising capital by sharing the risks with foreign investors.

H2: There is a positive relationship between foreign net private equity flows and the number of IPOs.

Current national stock levels, measured by GDP or industrial production, are positively related to future levels of real activity (Bilson, Bailsford, & Hooper, 2001). According to neoclassical economics theory, industrial production is also a leading indicator of business cycle and a proxy for income (Neumeayer & Perri, 2005).

H3: There is a positive relationship between industrial production and the number of IPOs.

According to the theories of credit provision (Petersen & Rajan, 1997), trade credit exists as a substitute for bank financing. In an economy with a developed banking system, the acquisition of information on borrowers, debt contract negotiation and corrective actions are better handled. Though suppliers have a cost advantage over banks in acquiring information about the financial health of buyers, suppliers are not sophisticated enough to screen complex projects. Fama (1985) argues that banks have access to inside information, while outside (public) debt holders rely on publicly available information. According to the bank lending channel theory, central banks can slow real activity by raising banks' cost of funds, thereby reducing the supply of credit. In such circumstances, banks refrain from lending to borrowers because of the high costs of funds. In such situations, firms would seek stock market financing (Williamson, 1988) instead of bank debt for growth.

H4: There is a negative relationship between bank credit and the number of IPOs.

Following the investor sentiment theory and the market timing hypothesis, a stock index reflects investor sentiments, which affects the costs of issuing equity, causing IPO volume to fluctuate over time. Firms issue equity as stock prices increase. During these periods, the costs of going public are especially low. Consequently, a large number of firms find it optimal to go public. In contrast, during periods of low investor sentiment, investors may undervalue firms, reducing the number of IPOs. Previous studies (see, e.g., Loughran et al., 1994; Reese, 1997; Pagano, Panette, & Zingales, 1998) have found a significant positive influence of stock index on IPO volume (Rydqvist & Hogholm, 1995)

H5: There is a positive relationship between stock market index and the number of IPOs.

IV. Conclusion

This paper perform a literature review on the relationships between IPO volume and economic. We discuss the 5 hypothesis and propose an empirical test to be carried out in order to confirm the findings. We suggest using data from China between the period 2006 to 2012 to be studied to prove the finance theory which state that “the volume of IPO have positive relationships with macroeconomic variables”.

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