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New evidence on economic policy uncertainty and equity premium



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ABSTRACT

Motivated by well-documented observations that the Chinese equity market is dominated by risk-seeking speculators with a behavioural bias, we test the hypothesis that China's economic policy uncertainty (EPU) commands a positive equity premium. We find stocks with higher EPU betas earn higher average returns, and the EPU factor-mimicking portfolio earns significant abnormal returns. Loadings on the EPU factor positively forecast the cross-section of returns on various sets of portfolios or stocks, controlling for macroeconomic and stock market uncertainty factors, conventional risk factors, and firm characteristics. Our findings are complimentary to the recently reported US evidence of a negative premium.

1. Introduction

There has been a growing interest in examining the asset pricing implications of government economic policy uncertainty (henceforth EPU). EPU is defined as uncertainty about macroeconomic policies including fiscal, regulatory and monetary policies (Baker et al., 2016). Since EPU represents the unknown probabilities of the future direction policymakers will take, its rise or fall may impact asset prices even more significantly than known macroeconomic policy changes.

The equity premium is central to asset pricing theory, and two of its important applications include estimates of the cost of capital and portfolio allocation decisions (Fama and French, 2002). Several recent studies of the asset pricing implications of EPU centre on the relation between EPU and the premium. In particular, Pástor and Veronesi (2012 and 2013) conclude theoretically that the unconditional equity premium is always positive and increasing in political uncertainty, and the conditional premium is larger in weaker economic conditions. On the other hand, however, Brogaard and Detzel (2015) provide empirical evidence that US's EPU commands a negative equity premium.

Chen et al. (2016) show that in China, a rise in EPU has a prolonged negative effect on future stock market returns, unlike in the US where the effect is found to be positive (Brogaard and Detzel, 2015). But, Chen et al.'s (2016) study fails to address a further question of whether China's EPU commands a positive or a negative premium. This question is important for two reasons. First, as the external finance premium influences investment and hence the real economy, the Chinese policymakers should be interested in China's own empirical evidence regarding how EPU induces the equity premium. If the sign of the premium is detected to be positive, a policy implication would be that the government ought to reduce EPU via further system reforms of its administration.

Secondly, and pertaining to portfolio allocation decisions, participants in the Chinese equity market are also likely to be interested in the question. It is well known that the effects of EPU on real economic activity and financial markets are non-diversifiable. Stocks in the equity market will have different, positive or negative, exposures to the systematic risk. Appropriate portfolio formation based on the information about EPU as well as how the market reacts to EPU innovations can help sophisticated portfolio managers to exploit the EPU-induced equity premium.

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In addition to the aforementioned importance of the question, our other motivations of investigating the sign of China's EPU-induced equity premium stem from the fact that the Chinese equity market is distinct from the US equity market. Two salient differences are particularly relevant to the present study. One is that the Chinese equity market is dominated by speculative trading, which is documented by both formal studies (e.g., Pan et al., 2016; Xiong and Yu, 2011; and Mei et al., 2009) and abundant anecdotal evidence. The other notable difference is the fact that Chinese investors face very stringent short-selling constraints. As discussed in Section 2, the behavioural bias associated with speculative traders and limits to arbitrage due to short-sale restrictions lead us to conjecture that EPU-induced equity premium is positive in China.

Investigating the conjecture, our central work concerns the ability of loadings on a factor to forecast their future premium. This is because of the possible market-misvaluation implication of EPU for the equity market. Several studies have showed that investors' behavioural biases can cause common misvaluation across all stocks in the market, and a factor capturing such common misvaluation will possess return predictability (Hirshleifer and Jiang, 2010; and Chang et al., 2013). If Chinese stock traders are largely risk-seeking and suffer behavioural biases, they will misperceive the relative importance of an upside and a downside effect of a stock's exposure to EPU (see Section 2 for more discussions). So, stocks with different exposures to EPU would likely have different mispricing (overpricing or underpricing). Such systematic misvaluation due to EPU innovations and investors' speculative behaviour should, via an appropriate factor-mimicking portfolio, possess positive return predictive power in the cross-section of portfolio and individual stock returns. That is, it should lead to a positive forecasted premium carried by the loadings on the EPU factor. Finding econometric evidence for these hypotheses is the main objective of our study. Further, as China's evidence is found to run counter to the US's, we repeatedly check the robustness of the results, and report all of them in this paper and its Supplemental Material.

We employ multifactor models, a widely-used means, in estimating EPU-induced equity premium. The models include seven standard return predictors and three economy-wide uncertainty factor-mimicking portfolios. The latter are estimated from the innovations of three state variables - the EPU index, equity market volatility, and the business climate leading index as a proxy for macroeconomic uncertainty. All these factors, except EPU factor-mimicking portfolio, serve as control variables. One purpose is to see whether the loadings of test portfolios and stocks on the EPU factor get priced in the cross-section of their future returns beyond their loadings on the control factors. In stock-level tests for the misvaluation implication of EPU, we also control for firm characteristics as proxies for idiosyncratic mispricing which also have return predictability (Daniel et al., 2005).

This study contributes to the literature concerning the asset-pricing implications of government policy uncertainty. It provides the first empirical evidence, from China, that EPU can command a positive equity risk premium. This evidence is complementary to the US's that the EPU-induced equity premium is negative. Our uncovered Chinese evidence could spur further studies on how EPU impacts financial markets and asset prices in other markets, especially emerging markets.

Our study goes way beyond Chen et al. (2016) which also explores the impact of China's EPU on stock markets. Specifically, two main differences exist. First, we link empirical tests to the commonly observed behavioural biases of Chinese stock traders. Doing so enables us to contrast the sign of China's EPU-induced premium with that of US's as reported in Brogaard and Detzel (2015), and to shed light on the relationship between excess stock/portfolio returns and stocks'/portfolios' sensitivities to EPU innovations where investors are mainly speculative with a strong risk appetite. All these important issues are ignored in Chen et al. (2016).

Second, we examine whether and how exposure to EPU gets priced in the *cross-section* of future portfolio and stock returns, while Chen et al. (2016) focus on whether and how EPU can forecast stock market returns and some characteristics portfolio returns in the *time series*. Accordingly, our results pertain to the equity premium, whereas theirs do not. As such, our study is directly relevant to estimating the cost of capital and to portfolio allocation decisions in China.

More broadly speaking, our study is also related to the literature on Asia-Pacific markets, in several areas. The areas include risk premium of economic factors (see, e.g., Huang, 2011; Eun and Huang, 2007), multifactor models (see, e.g., Kim, 2012; Kubota and Takehara, 2009), behavioural aspects of market participants (see, e.g., Zhu and Niu, 2016; Kim and Nofsinger, 2008), and the implications of economic/financial uncertainty for asset pricing (see, e.g., Naifar et al., 2017; Naifar and Hammoudeh, 2016). These works study financial markets in the Asia-Pacific region, addressing one or more of the issues listed above. Though also touching these issues, our study differs to varying degrees from them. For instance, EPU-induced equity premium and the role of retail investors in shaping such a premium have not been examined for markets in the region.

The remaining of this paper proceeds as follows. The next section develops hypotheses for empirical tests. Section 3 describes the sources of data and the construction of portfolios. Section 4 analyses EPU-beta decile portfolios, focusing on the relationship between their characteristics and EPU-betas. Section 5 conducts the asset-pricing tests to explore the market-misvaluation implication of EPU for the return predictability of, or the forecasted premium carried by, portfolio/stock loadings on the EPU factor. Section 6 concludes.

2. Motivation and hypotheses

Many studies document that the Chinese equity market is dominated by excessive speculative trading (see, e.g., Pan et al., 2016; Xiong and Yu, 2011; Bailey et al., 2009; and Mei et al., 2009). An exemplary and striking fact is that, as of 2012, 99.63% of Chinese trading account holders were individual retail investors aged over 50 years old on average and with poor school education (China Security Industry Development Report, 2012; see http://www.bizcspia.com/Source_Guide/201103/77.html). Such "fast-trading mom-and-pop investors" largely misperceive a stock's fundamental value and often trade under sentiment shocks (Pan et al., 2016). In other words, they are speculative noise trader whose decisions to buy, sell, or hold are irrational and erratic. Apart from formal studies mentioned above, abundant Internet articles and commentaries have also

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