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Monetary Policy Uncertainty, Expected RMB Volatility, and Yield Spreads between Dim Sum Bonds and China's Domestic Corporate Bonds

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A B S T R A C T

China's monetary policy is subject to a low transparency and great uncertainty, causing the fluctuation on the expected exchange rate (Renminbi) volatility and, in turn, affecting the dim sum bond market. We use the QVAR model to extract the latent monetary policy uncertainty and explore its influence on the expected RBM volatility and the yield spread between China's domestic corporate bonds and dim sum bonds. Results show that the monetary policy uncertainty has a significant negative influence on the yield spread between China's domestic corporate bonds and dim sum bonds even after controlling for forward exchange rates and expected exchange rate volatility. We further find that the monetary policy uncertainty has a significant positive influence on expected exchange rate volatility. The monetary policy uncertainty has a significant positive influence the issuance of dim sum bonds.

Keywords: Monetary policy uncertainty, law of one price, dim sum bonds, QVAR

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1. Introduction

Dim sum bonds have been receiving international attention in the fixed-income markets in recent years. Domestic companies in China issue bonds through onshore and offshore capital markets and raise capital in the same currency. Bonds issued domestically are called onshore domestic corporate bonds, and those issued in Hong Kong are called offshore dim sum bonds. Both onshore and offshore bonds are all denominated by Renminbi (RMB). As far as the fixed-income security market is concerned, the size of the dim sum bond market stood at 29.415 billion RMB in 2011, then reached 86.332 billion in 2014, and dropped to 48.282 billion in 2016.

Analyzing the offshore dim sum bond market is important for both industrial and academic sectors. In the industrial sector, offshore dim sum bond market offers an investment conduit for offshore RMB deposits and a funding source for domestic and foreign firms and institutions that have operations in China. It also provides opportunities to investors who would like to diversify their investments with an emerging asset class (Fung, Wu, and Yau, 2013; Fung, Ko, and Yau, 2014; Fung, Hsu, Lee, and Yau, 2014). In fact, the role of the RMB has been promoted in international markets by rapidly growing offshore financial markets (i.e. the dim sum bond markets) and bilateral swap agreements with a growing number of central banks (McKinnon and Schnabl, 2014).

In finance research, comparison of the yield spread between offshore dim sum bonds and onshore domestic bonds is a crucial issue that needs to be solved. According to the law of one price, the security issued by the same company has to be sold at the same price in all location. Dim sum bonds and China's domestic corporate bonds should not be taken as segregated markets. Any price difference might cause deviation in the law of one price and, in turn, might cast doubt on the validation of classical finance theory.

Some issues about dim sum bonds and China's domestic corporate bonds have been investigated by previous studies. For example, Lee and Chen (2013) found that the prices of dim sum bonds are affected by the expectation of RMB appreciation and the credit rating of dim sum bonds. Moreover, they noted that the prices of China's domestic corporate bonds are associated with the bond duration, issue size, credit rating, and the industry the company is in. In addition, Lin, Yeh, Hsu, and Yang (2016) observed that the offshore dim sum bonds and onshore corporate bonds issued by China's domestic companies have persistent deviation in prices, resulting in a significant yield spread between the two types of bonds. The deviations can be explained by limits to arbitrage, liquidity frictions, funding costs, and leverage constraints.

Recently, China has experienced serious capital outflows; as a result, the People's Bank of China utilized various monetary policies to intervene in the capital markets and stop the exodus of capital. However, the intervention of implementing monetary policies resulted in a risk, due to their uncertainty. The risk and uncertainty of the monetary policies increased the expected volatility of the exchange rate of RMB. It is important to note that variations in the exchange rates of RMB can affect the prices of dim sum bonds; thus, monetary policy uncertainty can be regarded as an important factor that affects the yield spreads of both types of bonds.

China's monetary policy uncertainty is more important in exchange rate risk rather than in interest rate risk. Offshore RMB exchange rates are more sensitive to the state of China's economy and are able to timely reflect the change in China's monetary policy.[1] The increase in expected risk of RMB exchange rates decreases the demands for dim sum bonds and lowers down the price. Thus, this study aims to explore whether monetary policy uncertainty has a significant influence on the yield spread between dim sum bonds and China's domestic bonds.

[1] Since China's interest rate is not completely float, interest rate volatility is relatively small.

It is important to study dim sum bonds and China's domestic corporate bonds because the persistent price difference between the two types of bonds poses a challenge in the law of one price. Also, it has been well-documented in finance literature that limits to arbitrage, liquidity frictions, funding costs, or leverage constraints can cast doubts on the validity of the law of one price. For example, Duffie, Garleanu, and Pedersen (2007) advocated that in the absence of trade counterparts, liquidity frictions might cause huge illiquidity discounts in security prices. Garleanu and Pedersen (2011) suggested that funding liquidity drain would deepen price gaps between securities with the same cash flow but different margin. This might cause a deviation in the law of one price. Bernanke and Gertler (1989) and Fostel and Geanakoplos (2008) discovered that leverage constraints could influence funding costs, and cause contagion and flight-to-quality effect.

In addition to the above factors, monetary policy uncertainty is expected to be an alternative important factor. This is because the government's monetary policy is associated with the state of the economy, which hinges on exchange rates and interest rates. Thus, monetary policy uncertainty could affect the risks of exchange rates and interest rates (Eichenbaum and Evans, 1995; Scholl and Uhlig, 2008; Faust and Rogers, 2003; Gurkaynak, Sack, and Swanson, 2005; Pastor and Veronesi, 2012; Stavrakeva and Tang, 2015; Wu and Xia, 2015). Bekaert, Hoerova, and Duca (2013) further explored the risk of uncertainty on the monetary policy.

Moreover, Mueller, Vedolin, and Yen (2012), and Cream and Wu (2015) suggested that the variation in bond prices hinges on the risks of interest rates and exchange rates. Moreover, it has been shown that economic policy uncertainty could influence the volatility of exchange rate as well as asset prices (Ulrich, 2012; Aastveit, Natvik, and Sola, 2013; Baker, Bloom, and Davis, 2015; Jurado, Ludvigson, and Ng, 2015).

Since the monetary policy uncertainty cannot be observed directly, this study employed the Qual VAR (QVAR) model by using the data sample on money net supply from the People's Bank of China and on Shibor rates to extract monetary policy uncertainty. The QVAR model is an empirical approach that combines binary variables into the VAR model. This study used the MCMC method proposed by Dueker (2005) to implement the QVAR model and obtain the estimated value of the monetary policy uncertainty. Next, the estimated values of the monetary policy uncertainty, exchange rates, and interest rates were used to explore the following issues via regression approaches:

1. The influence of monetary policy uncertainty, forward exchange rate, and expected exchange rate volatility on interest rate spread;
2. The influence of monetary policy uncertainty on forward exchange rate and expected exchange rate volatility; and
3. The influence of monetary policy uncertainty on the issuance of dim sum bonds.

Our findings are as follows. The monetary policy uncertainty has a significant negative influence on the yield spread between China's domestic corporate bonds and dim sum bonds even after controlling for forward exchange rates and expected exchange rate volatility. Expected exchange rate volatility also has a significant positive influence on yield spreads. We further find that the monetary policy uncertainty has a significant positive influence on expected exchange rate volatility. The monetary policy uncertainty has a significant positive influence the issuance of dim sum bonds.

2. Development of hypothesis

This study examined the effect of monetary policy uncertainty on RMB's forward exchange rate and expected exchange rate volatility and, in turn, its influence on the yield rate of dim sum bonds, which could cause dim sum bonds and China's domestic corporate bonds to deviate from the law of one price. Accordingly, this study proposes the following hypotheses:

H1: The monetary policy uncertainty influences the yield spread between dim sum bonds and China's domestic corporate bonds. Increase in the monetary policy uncertainty of the People's Bank of China results in the decrease of yield spread.

Since China's interest rate is not yet completely floating, interest rate volatility is relatively small; therefore, monetary policy uncertainty has less impact on the price of China's domestic corporate bonds. An increase in the monetary policy uncertainty will upsurge the RMB's expected volatility and decrease the price (increase the yield) of dim sum bonds. In sum, the yield spread of China's domestic corporate bonds and dim sum bonds will reduce due to the increased monetary policy uncertainty.

H2: Increase in monetary policy uncertainty affects the issuance of dim sum bonds.

The monetary policy of the People's Bank of China is relatively non-transparent. An increase in monetary policy uncertainty will result in investor anxiety on China's market and a surge in RMB exchange rate, leading to greater volatility in the RMB exchange rate. For investors of dim sum bonds, exchange gains and losses are key factors they consider. When the expected exchange rate volatility rises, investor demand on dim sum bonds decreases, thus the issuance of dim sum bonds decreases.

3. Data and Research Methodology

3.1 Data Description

The sample of this study includes the quoted yield rates of dim sum bonds and China's domestic corporate bonds and bond information (including ratings, issue date, maturity date and coupon), data on China's money net supply and interest rate (used for evaluating monetary policy uncertainty),, China and Hong Kong's macroeconomic variables (including GDP growth rate, unemployment rate, and inflation rate), RMB to USD and HKD to USD exchange rates and the RMB to USD one-year forward exchange rate, China and Hong Kong interbank offered rate, Shibor and Hibor, Credit Default Swap (CDS), and China's stock market data (used for evaluating market factors such as momentum, illiquidity, and coefficient of skewness).

This study collect data about dim sum bonds and China's domestic bonds from the Bloomberg system. We obtain the information about bond yield rate, issuer, underwriter, coupon, maturity date, exchange, and rating. First, the data about dim sum bonds and corporate bonds that are issued in both onshore and offshore markets by the same companies was collected from the Bloomberg system. Dim sum bonds and corporate bonds that shares similar characteristics (rating, coupon, and duration) and issued by the same company were matched. Then the yield spreads between dim sum bonds and corporate bonds are calculated and orthogonalize with the ratings, coupons, and maturities of the dim sum bonds and corporate bonds. The calculated yield spreads are used in empirical studies. They can be seen from Figure 1 that prior to 2011, the issuance of dim sum bonds is small and in 2011, it started to soar and reached its peak in 2014 before it declined in 2015 and 2016. Table 1 revealed that during the whole sample period, the yield spread between dim sum bonds and domestic corporate bonds averaged -0.15%.

Figure 1 The issuance of Dim Sum Bonds

Figure 1 shows the annual issue times and issuance of dim sum bonds from July 2007 to December 2016.

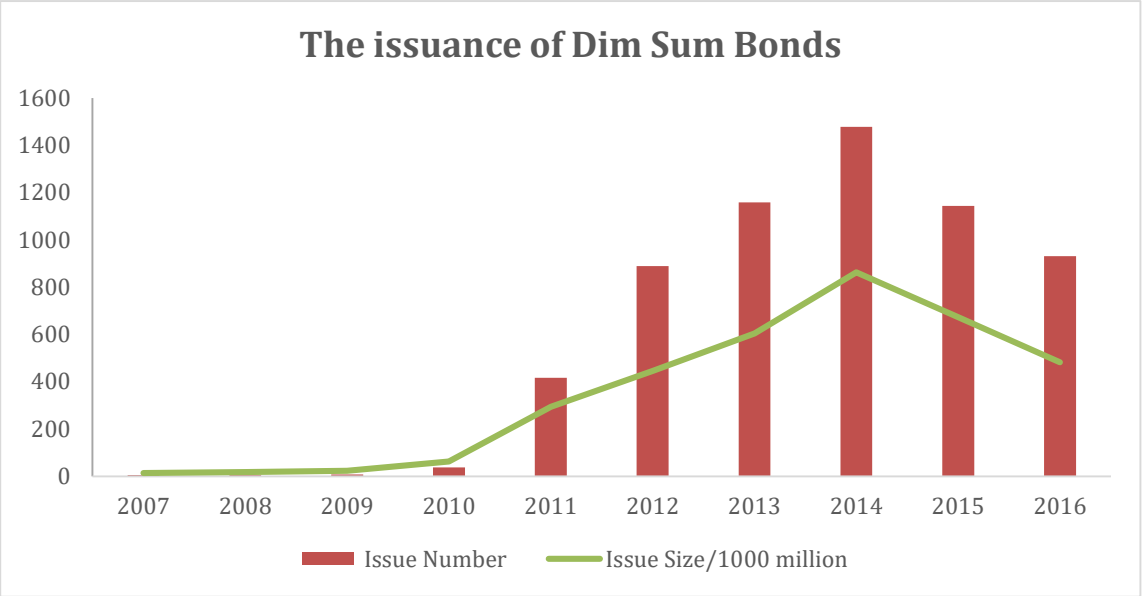


Table 1 Descriptive Statistics

Table 1 presents the descriptive statistics of the variables. YS and Y* stand for the adjusted interest rate spread between the China's domestic corporate bonds and dim sum bonds and monetary policy uncertainty in China, respectively. NDF12M is the expected one-year forward exchange rate; $\sigma^2_{NDF,t}$ is the expected exchange rate volatility as estimated by GARCH(1,1) model; ERUSDCNY and ERUSDHKD are RMB to USD exchange rate and HKD to USD exchange rate, respectively; InflationCHN and InflationHK are China and Hong Kong's inflation rates measured by CPI, respectively; GDPCHN and GDPHK are China and Hong Kong's GDP growth rate; UnemploymentCHN and UnemploymentHK are China and Hong Kong's unemployment rate, respectively; ΔCDSCHN and ΔCDSHK are the volatility of the five-year sovereign CDS Spread between China and Hong Kong; TedCHN and TEDHK are the difference between a three-month range Shibor and overnight offered rate of China and the difference between a three-month range Hibor and overnight offered rate of Hong Kong, respectively. ILL is the indicator of Chinese stock market illiquidity; IVOL is the idiosyncratic volatility; MOM is the momentum indicator of the Chinese stock market; Skewness is the coefficient of skewness of the Chinese stock market; DRisk is the downside risk. The sample period ranges from January 2011 to December 2015.

	Mean	Standard Deviation	Minimum	Median	Maximum
YS	-0.0015	1.1514	-14.8926	-0.0172	42.5458
NDF12M	2.4445	1.2550	-2.4131	2.3312	6.6432
σ^2_{NDF12M}	1.6298	3.1116	0.0012	0.3104	21.1861
ER_{USDCNY}	6.2033	0.0928	6.0406	6.2031	6.5970
ER_{USDHKD}	7.7552	0.0062	7.7498	7.7538	7.8086
$Inflation_{CHN}$	2.0988	0.8033	0.7638	1.8014	6.4510
$Inflation_{HK}$	4.0949	1.1880	1.6000	4.0000	7.9000
GDP_{CHN}	1.8289	0.1618	1.5000	1.8000	2.4000
GDP_{HK}	0.7067	0.5139	-0.4000	0.6000	2.7000
$Unemployment_{CHN}$	4.0763	0.0210	4.0400	4.0800	4.1000
$Unemployment_{HK}$	3.3209	0.1703	2.9000	3.3000	3.7000
ΔCDS_{CHN}	0.0152	3.0272	-21.1600	-0.0150	30.5450
ΔCDS_{HK}	-0.0095	1.9217	-16.6350	0.0000	19.3350

Ted_{CHN}	1.6888	0.8245	-8.0254	1.7133	3.8280
Ted_{HK}	0.3094	0.0260	-0.2036	0.3131	0.3650
ILL	0.0009	0.0006	0.0004	0.0007	0.0040
IVOL	0.0207	0.0044	0.0154	0.0195	0.0369
Max	0.0189	0.0064	0.0133	0.0169	0.0427
MOM	0.1754	0.2513	-0.4312	0.1860	0.9214
Skewness	0.1055	0.1453	-0.2857	0.1257	0.3686
Coskew	-5.6352	3.9801	-12.1944	-4.6674	1.0558
Drisk	1.2095	0.1841	0.7571	1.2429	1.5196

This study also collects the data from the Wind Info system, including China's money net supply, Shibor, Hibor, overnight offered rate of China and Hong Kong, Chinese stock prices, trading volume, the volume of trade, and turnover rate. Wind Information is the most commonly used financial database in China; 75% of QFII and over 90% of China's security and fund companies are customers of Wind Info.

TED, macroeconomic variables, exchange rates and CDS spreads are used as control variables in the study. TED_{CHN} has a three-month difference between Shibor and overnight offered rate of China, and TED_{HK} with a three-month difference between Shibor and overnight offered rate of China. TED is the proxy variable of funding liquidity risk; macroeconomic variables included GDP growth, unemployment rate, and inflation rate. Among them, the GDP growth is quarterly adjusted, the unemployment rate is quarterly data, and the inflation rate is monthly data. China's macroeconomic variables are taken from the People's Republic of China National Bureau of Statistics and Hong Kong's macroeconomic variables were taken from the Census and Statistics Department of the Government of the Hong Kong Special Administrative Region of the People's Republic of China. Exchange rates include the RMB to USD exchange rate and the HKD to USD exchange rate. The CDS[2] quote is a proxy variable of credit risk variable. CDSs used in this study are the five-year sovereign debt CDS. When CDS increases, ΔCDS is larger than zero, indicative of increased risk; absent that, there is a decreased risk. Table 1 shows that China's quarterly adjusted GDP growth rate is 1.83%, higher than that of Hong Kong, which is 0.71%; China's unemployment rate reaches, on average, 4.08%, higher than that of Hong Kong, which is 3.32%; and China's inflation rate is 2.10%, lower than that of Hong Kong, which is 4.09%. China's Ted, on average, is 1.69%, higher than Hong Kong's 0.31%. China's ΔCDS is 150 BP, larger than Hong Kong's -1 00 BP.

The control variables in this study are China's stock market- the factors are obtained from calculating the stock data that was collected from the Wind Information. China's stock market factors included illiquidity (ILL), idiosyncratic volatility (IVOL), momentum (MOM), Skewness, Coskew, DRisk. ILL was calculated according to the method by Amihud (2002), by dividing the absolute value of the daily stock return rate by trading volume and taking the monthly mean; IVOL was calculated by a regression of all data through the Fama-French three-factor model, followed by a calculation of regression residuals of the monthly standard deviation; the MOM of month t, the monthly rate of return over the past 11 months from t-11 to t-1. Coskew was calculated by a regression of the daily excess return rate against the excess market return rate and the square of the excess market return rate, followed by the regression coefficient of the square of the excess market return rate. DRisk was the Beta

[2] Credit Default Swap (CDS) is the commonest credit derivative in the bond market. During CDS, the party that hopes to avoid credit risk is called the protection buyer, and the other party who provides credit protection to the avoiding party is called the protection seller, who is willing to take a credit risk. CDS buyers will make regular premium payments (called credit default swap spreads) to CDS sellers. In the event of a credit event (referring mainly to a debt default by a debtor), the CDS buyer will be entitled to send the bonds in the form of face value to the CDS seller to effectively avoid credit risk.

coefficient of the market return rate below the average return of the past year. Table 1 is a collection of the statistics of these factors. The mean of Ill was 0.09% and standard deviation was 0.06%; the mean of IVOL was 2.07% and standard deviation was 0.44%; the mean of MOM was 17.54% and standard deviation was 25.13%; the mean of Skewness was 10.55% and standard deviation was 14.53%; the mean of Coskew was -563.52% and standard deviation was 398.01%, and the mean of DRisk was 120.95% and standard deviation was 18.41%.

NDF12M stands for the unexpected exchange rate that was calculated according to the method by Lee and Chen (2013) using one-year RMB to the USD exchange rate, Shibor, and Libor. The equation is as follows:

$$\mathrm{NDF12M} = \sum_{t=-9}^{0} \frac{{}^{1}/_{\mathrm{NDF_t}} - {}^{1}/_{\mathrm{F_t}}}{{}^{1}/_{\mathrm{NDF_t}}} \Big/ 10$$

where

$$\mathrm{F_t} = \frac{1 + \mathrm{Shibor_t}}{1 + \mathrm{Libor_t}} \times \mathrm{Spot_t}$$

The expected exchange rate volatility was represented by $\sigma^2_{\mathrm{NDF12M,t}}$, NDF12M volatility was estimated by the GARCH(1,1) model. It can be seen from Table 2 that the mean of NDF12M was 2.44, and the standard deviation was 1.26; the mean of $\sigma^2_{\mathrm{NDF12M,t}}$ was 1.63 and standard deviation was 3.11.

3.2 Qual VAR Model

China's monetary policy influences the yield rates of China's domestic corporate bonds and dim sum bonds and further affects the spread between both bonds. This study mainly explored the influence of monetary policy uncertainty on the yield spread between China's domestic corporate bonds and dim sum bonds. This study first used the Qual VAR model proposed by Dueker (2005) to evaluate China's monetary policy uncertainty. QVAR is a method that combines binary variables into the VAR model. This study used the Qual VAR Model to evaluate China's monetary policy uncertainty with data about the money net supply of the People's Bank of China and China's interest rate.

Money net supply can be defined as two kinds of states: larger than zero (i.e. liquidity state) and smaller than zero (i.e. illiquidity state). When it is larger than zero, it is one; when it is smaller than zero, it is zero. Suppose the state of money net supply m_t is determined by a consecutive latent variable monetary policy uncertainty y_t^*:

$$m_t = 1, if\ y_t^* > 0,$$

$$m_t = 0, if\ y_t^* \leq 0.$$

Suppose $\mathrm{y_t} = (\mathrm{Ted_{CHN,t}}, \mathrm{y_t^*})$'satisfies a VAR(1) process:

$$y_t = \Psi_0 + \Psi_1 y_{t-1} + \eta_t$$

$$= \begin{bmatrix} \Psi_{01} \\ \Psi_{02} \end{bmatrix} + \begin{bmatrix} \Psi_{11} & \Psi_{12} \\ \Psi_{21} & \Psi_{22} \end{bmatrix} \begin{bmatrix} \mathrm{Ted}_{CHN,t-1} \\ y_{t-1}^* \end{bmatrix} + \eta_t$$

Ψ_0 is a 2X1 intercept vector, Ψ_1 is a 2X2 coefficient matrix, η_t is a binary random variable with a zero mean and whose covariance matrix was Σ_t. $\mathrm{Ted_{CHN,t}}$ is the difference between the China interbank offered rate and a three-month Shibor.

This study used the Markov Chain Carlo (MCMC) method proposed by Dueker (2005) to estimate the parameters of the QVAR model. MCMC is essentially a Bayesian method. After sufficient repeations, the distribution of the estimated parameters will approach the prior distribution of the target parameters. The focus of this study was on evaluating monetary policy uncertainty y_t^*. As for the application, MCMC requires 10000 times of repeations. For the estimations to approach the prior distribution, the first 5000 times must be eliminated while the mean of the last 5000 are used to compute the estimated value.

3.3 Panel Regression of Monetary Policy Uncertainty and Expected Exchange Rate against Yield Spread

This study used panel regressions to conduct the main empirical research. The data used was panel data, which included intercept data such as bond codes and longitudinal data such as year, month and data. This study considered the fact that different pairs of bonds had their own effects that were correlated to the independent variables. Therefore, the fixed effect model was used to maintain the heterogeneity of different pairs. To eliminate the influence of the pairing on bond characteristics, this study first conducted a regression of coupon, duration and rating against yield spread, then took the residual $YS_{i,t}^{\perp}$ as the object of this study.

Model 1: $YS_{i,t}^{\perp} = \alpha_i + \beta_1 y_t^* + \beta_2 NDF12M_t + \beta_3 Controls_t + \epsilon_{i,t}$ (1)

Model 2: $YS_{i,t}^{\perp} = \alpha_i + \beta_1 NDF12M_t + \beta_2 \sigma_{NDF12M,t}^2 + \beta_3 Controls_t + \epsilon_{i,t}$ (2)

Model 3: $YS_{i,t}^{\perp} = \alpha_i + \beta_1 y_t^* + \beta_2 NDF12M_t + \beta_3 \sigma_{NDF12M,t}^2 + \beta_4 Controls_t + \epsilon_{i,t}$ (3)

Model 4: $YS_{i,t}^{\perp} = \alpha_i + \beta_1 y_t^* + \beta_2 NDF12M_t + \beta_3 \sigma_{NDF12M,t}^2 + \beta_4 \sigma_{NDF12M,t}^2 * y_t^* + \beta_5 Controls_t + \epsilon_{i,t}$ (4)

Model 1 explores the influence of monetary policy uncertainty and forward exchange rate on yield spreads. Model 2 investigates the influence of the forward exchange rate and expected exchange rate volatility on the yield spreads, whereas Model 3 examines the influence of monetary policy uncertainty, the forward exchange rate and the expected exchange rate volatility on yield spreads. Model 4 further explores the influence of monetary policy uncertainty, the forward exchange rate, the expected exchange rate volatility and the interative effect of monetary policy uncertainty and expected exchange rate volatility on yield spreads.

$Controls_t$ is the vector formed by the variables of total economy and exchange rate, which included the following elements: China's quarterly GDP growth rate (GDP_{CHN})，Hong Kong's quarterly GDP growth rate (GDP_{HK}), China's quarterly unemployment rate ($Unemployment_{CHN}$), Hong Kong's quarterly unemployment rate ($Unemployment_{HK}$) , China's monthly inflation rate ($Inflation_{CHN}$ as measured by the consumer price index)，Hong Kong's monthly inflation rate ($Inflation_{HK}$ as measured by consumer price index), USD to RMB exchange rate(ER_{USDCNY}), USD to HKD exchange rate(ER_{USDHKD}), China's five-year CDS volatility (ΔCDS_{CHN}), China's five-year CDS volatility (ΔCDS_{HK}), China's Ted(Ted_{CHN}, a three-month difference between Shibor and overnight offered rate of China), Hong Kong's Ted(TED_{HK}, a three-month difference between Hibor and overnight offered rate of Hong Kong), and the major factors of the Chinese stock market (ILL, MoM, Skewness and Coskew).

y_t^* denotes the monetary policy uncertainty as estimated by the QVAR model; NDF_t is a one-year RMB to USD exchange rate calculated according to the method by Lee and Chen (2013); and $\sigma_{NDF,t}^2$ represents the expected exchange rate volatility as estimated by the GARCH(1,1)model.

3.4 Regression of Monetary Policy Uncertainty and Exchange Rate Risk

To explore the influence of monetary policy uncertainty on the exchange rate risk, the influence of the forward exchange rate and the expected exchange rate volatility on foreign currency reserves, and monetary policy uncertainty on the issuance of dim sum bonds, this study used regression models to conduct the research.

Monetary policy uncertainty will affect the volatility of China's money supply and further impact the forward exchange rate risk. Theoretically, when monetary policy uncertainty increases, money supply volatility will grow accordingly, causing the expected exchange rate volatility to rise, and vice versa. This study used the regression of Model 5 to explore the influence of monetary policy uncertainty on the expected exchange rate volatility.

Model 5: $\sigma^2_{NDF12M,t} = \alpha_i + \beta_1 y^*_t + \beta_2 Controls_t + \epsilon_t$ (5)

RMB's forward exchange rate and the expected exchange rate volatility will influence investor behavior towards China's domestic corporate bonds. When the forward exchange rate is anticipated to depreciate or t the expected exchange rate volatility rises, investors tend to sell the bonds, causing the price of China's domestic corporate bonds to fall and the yield rate to rise, and it will change the RMB into USD or other foreign currencies, resulting in the decrease in foreign currency reserves. The opposite is also true. Since it is difficult to obtain trade and issue data about China's domestic corporate bonds, this study mainly explored the influence of the exchange rate on foreign currency reserves. Model 6 was used to explore the influence of the expected exchange rate and the expected exchange rate volatility on China's foreign currency reserves. In the model, $Resv_t$ denotes China's monthly foreign currency reserves.

Model 6: $Resv_t = \alpha_i + \beta_2 NDF12M_t + \beta_3 \sigma^2_{NDF12M,t} + \epsilon_t$ (6)

Dim sum bond investors are mostly overseas investment institutes that are sensitive about China's monetary policy. When China's monetary policy uncertainty increases, they tend not to purchase or hold dim sum bonds, leading to the decline in dim sum bond circulation. Since data about the circulation of dim sum bonds are difficult to obtain, this study mainly investigates the influence of China's monetary policy uncertainty on dim sum bonds. Model 10 was utilized to explore the influence of China's monetary policy uncertainty on the circulation of dim sum bonds. $\mathrm{Amt_t}$ is the volatility of the monthly issuance of Hong Kong dim sum bonds.

Model 7: $Amt_t = \alpha_i + \beta_2 y^*_t + \epsilon_t$ (7)

4. Empirical Results

4.1 Qual VAR Model Results

Table 2 presents the prior mean of QVAR parameters and the resulting t value. The first and second panels are the estimation of Ψ_0 and $\Psi_1$and the third is the diagonal vector is the variance of the estimation, while the non-diagonal data is the relevant coefficient. P value is reported in the parentheses. The means of $Ted_{CHN,t}$ and y^*_t are 0.7718 and 0.0132, respectively. It can be seen from Table 2 that Ψ_{12} falls significantly well below the 99% level. Lagged $Ted_{CHN,t}$ has a predictive power on China's monetary policy uncertainty. A high level of $Ted_{CHN,t}$ indicates financial strain on the market and that the central bank's monetary policy uncertainty will rise.

Figure 2 represents the estimation of y_t^*, China's monetary policy uncertainty. The figure indicates four peaks: May to October, 2010, July to October, 2011, March to May, 2012, and May to July, 2014.

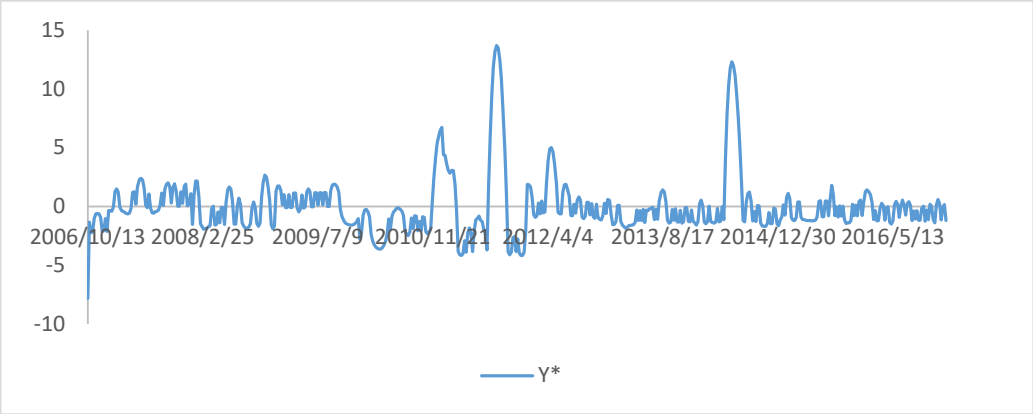
Table 2 Prior Means and P Values of QVAR(1) Model Parameters

Table 2 presents the posterior means and correspondent P values (in parentheses) of QVAR(1) model parameters. y*t stands for monetary policy uncertainty in China. $Ted_{CNH,t}$ is the difference between a three-month Shibor and overnight offered rate of China.

	$Ted_{CHN,t}$	y^*_t
Intercept		
	0.2837 (<0.0001)	-0.1316 (<0.0001)
VAR Coefficient Matrix		
$Ted_{CHN,t-1}$	0.7718 (<0.0001)	0.0132 (<0.0001)
y^*_t	0.1911 (<0.0001)	0.8783 (<0.0001)
Volatility Matrix		
$Ted_{CHN,t-1}$	0.2780 (<0.0001)	
y^*_t	-0.0559 (<0.0001)	1

Figure 2 Monetary Policy Uncertainty in China

Figure 2 shows the monetary policy uncertainty in China. There are four peaks in the figure: May to October, 2010, July to October, 2011, March to May, 2012, and May to July, 2014.



In 2011, under the influence of the American quantitative easing, global raw material price were increasing, and China was faced with serious inflation crisis. To cope with inflation, the People's Bank of China raised the benchmark interest rate and required reserve rate several times. From January to July, 2011, the one-year benchmark interest rate rose by 0.75%- after three raises- and the required reserve rate increased by 3.00% after six raises.

By the end of 2011, China's funds outstanding for foreign exchange came to a turning point, showing negative growth for the first time in many years. Meanwhile, to maintain the stable growth of the Chinese economy, China's central bank implemented a prudent monetary policy in 2012- that played a limited role. From February to July 2012, the central bank employed an asymmetric rate cut for the first time, lowering the benchmark interest rate and the required reserve rate twice, respectively.

In 2014, anticipating a USD interest rate hike along with an unprecedentedly intense "collapse of China"- that was the public expectation, at any rate- the RMB faced huge pressure to depreciate. To stabilize the RMB to the USD exchange rate, the central bank intervened in the exchange market by employing foreign currency reserves. From 2014 to 11th August 2015, prior to the exchange rate reform, foreign currency reserves fell by 400 billion USD from 4 trillion USD to 3.6 trillion USD.

Table 3 illustrates the correlation coefficient matrix.

Table 3 reveals the correlation between variable pairs. YS and Y* stand for the adjusted interest rate spread between the China's domestic corporate bonds and dim sum bonds and monetary policy uncertainty in China, respectively. ER_{USDCNY} and ER_{USDHKD} are RMB to USD exchange rate and HKD to USD exchange rate, respectively; $Inflation_{CHN}$ and $Inflation_{HK}$ are China and Hong Kong's inflation rates measured by CPI, respectively; GDP_{CHN} and GDP_{HK} are China and Hong Kong's GDP growth rate; $Unemployment_{CHN}$ and $Unemployment_{HK}$ are China and Hong Kong's unemployment rate, respectively; ΔCDS_{CHN} and ΔCDS_{HK} are the volatility of the five-year sovereign CDS Spread between China and Hong Kong; Ted_{CHN} and TED_{HK} are the difference between a three-month range Shibor and overnight offered rate of China and the difference between a three-month range Hibor and overnight offered rate of Hong Kong, respectively. NDF_{12M} is the expected forward exchange rate. ILL is the indicator of Chinese stock market illiquidity; IVOL is the idiosyncratic volatility; MOM is the momentum indicator of the Chinese stock market; Skewness is the coefficient of skewness of the Chinese stock market; DRisk is the downside risk. The sample period ranges from January 2011 to December 2015.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	15	16	17	18	19	20	21	22	23
(1)YS	1.0000	0.1148	0.4942	-0.0826	0.1880	-0.1782	0.3189	0.1747	-0.0328	-0.0364	-0.0310	-0.1565	-0.2825	0.1263	0.0020	0.0105	-0.1700	0.2015	-0.1701	-0.2799	-0.3138	-0.0784	0.1239
(2) Y^*	0.1148	1.0000	0.3651	0.2368	0.0725	-0.1239	0.0163	-0.0557	-0.1413	-0.1831	0.1035	-0.0984	0.1365	-0.1076	-0.0326	0.0075	-0.2578	0.1771	-0.0760	-0.2768	-0.2124	-0.0086	-0.0211
(3)NDF12m	0.4942	0.3651	1.0000	-0.1744	0.4353	-0.3704	0.4542	0.1997	0.0211	-0.0136	0.1407	-0.3190	-0.2123	0.2968	-0.0435	0.0059	-0.3276	0.3203	-0.1593	-0.4793	-0.4932	-0.1254	0.2951
(4)σ^2_{NDF12m}	-0.0826	0.2368	-0.1744	1.0000	0.0892	-0.0390	0.1445	-0.2300	-0.0275	0.0160	-0.2061	-0.0200	0.6338	0.1423	-0.0028	0.0011	0.2279	-0.1659	-0.0996	0.0992	0.1369	0.0455	-0.6071
(5)TED_{CHN}	0.1880	0.0725	0.4353	0.0892	1.0000	0.1074	-0.0039	0.0997	-0.3501	0.0756	-0.2082	-0.5088	-0.0488	0.0660	-0.1037	-0.0530	-0.0227	-0.0458	-0.0758	-0.0070	-0.0510	0.2083	0.0888
(6)TED_{HK}	-0.1782	-0.1239	-0.3704	-0.0390	0.1074	1.0000	-0.5658	-0.1518	-0.3581	-0.0689	-0.4149	-0.1322	-0.1595	-0.4361	0.0567	-0.0069	0.0777	-0.3060	0.0676	0.3746	0.3413	0.4791	0.1130
(7)$Inflation_{CHN}$	0.3189	0.0163	0.4542	0.1445	-0.0039	-0.5658	1.0000	0.3725	0.2912	-0.1634	0.1111	0.1845	-0.0105	0.5963	-0.0298	-0.0029	-0.0105	0.2320	-0.1328	-0.2854	-0.2754	-0.4041	-0.1924
(8)$Inflation_{HK}$	0.1747	-0.0557	0.1997	-0.2300	0.0997	-0.1518	0.3725	1.0000	-0.3208	0.1128	0.1675	0.1211	-0.5026	0.2632	0.0401	0.0110	-0.1219	0.0774	-0.3697	-0.2073	-0.2952	-0.0460	0.3565
(9)GDP_{CHN}	-0.0328	-0.1413	0.0211	-0.0275	-0.3501	-0.3581	0.2912	-0.3208	1.0000	0.0029	0.1049	0.3856	0.2966	0.2753	-0.0117	-0.0037	0.1003	-0.0323	0.2182	-0.0182	-0.0271	-0.1004	0.0301
(10)GDP_{HK}	-0.0364	-0.1831	-0.0136	0.0160	0.0756	-0.0689	-0.1634	0.1128	0.0029	1.0000	-0.0894	-0.1650	-0.0023	0.1789	0.0817	0.0233	0.0353	0.0518	-0.0733	0.0767	0.0532	-0.0407	0.1355
(11)$Unemployment_{CHN}$	-0.0310	0.1035	0.1407	-0.2061	-0.2082	-0.4149	0.1111	0.1675	0.1049	-0.0894	1.0000	0.2278	0.2038	0.2374	-0.0411	0.0054	-0.2442	0.4330	-0.0869	-0.6063	-0.5221	-0.5962	-0.0112
(12)$Unemployment_{HK}$	-0.1565	-0.0984	-0.3190	-0.0200	-0.5088	-0.1322	0.1845	0.1211	0.3856	-0.1650	0.2278	1.0000	0.0132	0.0186	-0.0217	-0.0127	-0.2446	0.1963	0.0058	-0.0572	-0.0004	-0.1126	-0.0282
(13)ER_{USDCNY}	-0.2825	0.1365	-0.2123	0.6338	-0.0488	-0.1595	-0.0105	-0.5026	0.2966	-0.0023	0.2038	0.0132	1.0000	0.2056	0.0032	-0.0118	0.2689	-0.1076	0.1897	0.0765	0.2044	-0.2034	-0.5861
(14)ER_{USDHKD}	0.1263	-0.1076	0.2968	0.1423	0.0660	-0.4361	0.5963	0.2632	0.2753	0.1789	0.2374	0.0186	0.2056	1.0000	0.0586	0.0429	0.1846	-0.0315	-0.0944	-0.1262	-0.1282	-0.2881	-0.0864
(15)ΔCDS_{CHN}	0.0020	-0.0326	-0.0435	-0.0028	-0.1037	0.0567	-0.0298	0.0401	-0.0117	0.0817	-0.0411	-0.0217	0.0032	0.0586	1.0000	0.1884	-0.0003	-0.0533	-0.0270	0.0795	0.0876	0.0443	0.0996
(16)ΔCDS_{HK}	0.0105	0.0075	0.0059	0.0011	-0.0530	-0.0069	-0.0029	0.0110	-0.0037	0.0233	0.0054	-0.0127	-0.0118	0.0429	0.1884	1.0000	-0.0022	-0.0064	-0.0139	-0.0027	-0.0043	0.0072	0.0052
(17)Coske	-0.1700	-0.2578	-0.3276	0.2279	-0.0227	0.0777	-0.0105	-0.1219	0.1003	0.0353	-0.2442	-0.2446	0.2689	0.1846	-0.0003	-0.0022	1.0000	-0.7841	0.3219	0.5579	0.5047	0.0924	-0.2647
(18)Drisk	0.2015	0.1771	0.3203	-0.1659	-0.0458	-0.3060	0.2320	0.0774	-0.0323	0.0518	0.4330	0.1963	-0.1076	-0.0315	-0.0533	-0.0064	-0.7841	1.0000	-0.2368	-0.7476	-0.6303	-0.6152	-0.1420
(19)ILL	-0.1701	-0.0760	-0.1593	-0.0996	-0.0758	0.0676	-0.1328	-0.3697	0.2182	-0.0733	-0.0869	0.0058	0.1897	-0.0944	-0.0270	-0.0139	0.3219	-0.2368	1.0000	0.4842	0.5912	0.1172	-0.0043
(20)Ivol	-0.2799	-0.2768	-0.4793	0.0992	-0.0070	0.3746	-0.2854	-0.2073	-0.0182	0.0767	-0.6063	-0.0572	0.0765	-0.1262	0.0795	-0.0027	0.5579	-0.7476	0.4842	1.0000	0.9358	0.5977	0.0639
(21)Max	-0.3138	-0.2124	-0.4932	0.1369	-0.0510	0.3413	-0.2754	-0.2952	-0.0271	0.0532	-0.5221	-0.0004	0.2044	-0.1282	0.0876	-0.0043	0.5047	-0.6303	0.5912	0.9358	1.0000	0.4358	-0.0686
(22)MOM	-0.0784	-0.0086	-0.1254	0.0455	0.2083	0.4791	-0.4041	-0.0460	-0.1004	-0.0407	-0.5962	-0.1126	-0.2034	-0.2881	0.0443	0.0072	0.0924	-0.6152	0.1172	0.5977	0.4358	1.0000	0.4792
(23)Skewness	0.1239	-0.0211	0.2951	-0.6071	0.0888	0.1130	-0.1924	0.3565	0.0301	0.1355	-0.0112	-0.0282	-0.5861	-0.0864	0.0996	0.0052	-0.2647	-0.1420	-0.0043	0.0639	-0.0686	0.4792	1.0000

4.2 Regression Results

Table 4 shows the results of Panel regression. First, it was discovered that the coefficients of NDF12M and σ^2_{NDF12M} were 1% significantly positive, indicating that the expected exchange rate would significantly influence yield spread. This is consistent with the findings of Lee and Chen (2013). Second, it was revealed that the coefficient of y^*_t was 1% significantly negative, indicating that when monetary policy uncertainty was high, the interest rates of domestic corporate bonds and dim sum bonds would rise, but that of dim sum bonds would rise even higher greater margin. This verifies H1 of this study.

Table 4 Panel Regression: Yield Spread and Market Factors

Table 4 show the results of Panel regression. Y* stand for the adjusted monetary policy uncertainty in China. ER_{USDCNY} and ER_{USDHKD} are RMB to USD exchange rate and HKD to USD exchange rate, respectively; $Inflation_{CHN}$ and $Inflation_{HK}$ are China and Hong Kong's inflation rates measured by CPI, respectively; GDP_{CHN} and GDP_{HK} are China and Hong Kong's GDP growth rate, respectively; $Unemployment_{CHN}$ and $Unemployment_{HK}$ are China and Hong Kong's unemployment rate, respectively; ΔCDS_{CHN} and ΔCDS_{HK} are the volatility of the five-year sovereign CDS Spread between China and Hong Kong, respectively; Ted_{CHN} and TED_{HK} are the difference between a three-month range Shibor and overnight offered rate of China and the difference between a three-month range Hibor and overnight offered rate of Hong Kong, respectively. NDF_{12M} is the expected one-year forward exchange rate; ILL is the indicator of Chinese stock market illiquidity; IVOL is the idiosyncratic volatility; MOM is the momentum indicator of the Chinese stock market; Skewness is the coefficient of skewness of the Chinese stock market; Coskewness is the coskewness of the Chinese stock market; DRisk is the downside risk. The sample period ranges from January 2011 to December 2015. Numbers in parentheses are t-values; *, ** and *** stand for a significant level of 10%, 5% and 1%, respectively. The sample duration ranged from January 2011 to December 2015.

	Model 1	Model 2	Model 3	Model 4
NDF12M	0.3200***	0.3162***	0.3583***	0.3513***
	(38.90)	(41.37)	(42.49)	(40.78)
σ^2_{NDF12m}		0.0522***	0.0619***	0.0639***
		(16.54)	(19.01)	(19.39)
Y^*	-0.0133***		-0.0226***	-0.0100***
	(-7.08)		(-11.73)	(-2.65)
$\sigma^2_{NDF12m} * Y^*$				-0.0028***
				(-3.93)
TED_{CHN}	-0.0266***	-0.0143*	-0.0378***	-0.0321***
	(-3.40)	(-1.89)	(-4.82)	(-4.03)
TED_{HK}	-1.1193***	-0.4637*	-0.7982***	-0.7085***
	(-4.56)	(-1.91)	(-3.26)	(-2.88)
$Inflation_{CHN}$	0.1518***	0.0910***	0.0433**	0.0429***
	(10.27)	(5.96)	(2.74)	(2.72)
$Inflation_{HK}$	-0.0411***	-0.0389***	-0.0213**	-0.0231***
	(-4.78)	(-4.57)	(-2.47)	(-2.68)
GDP_{CHN}	-0.3085***	0.2212***	0.1615**	0.2194***
	(-5.32)	(3.53)	(2.57)	(3.40)
GDP_{HK}	-0.0666***	-0.1152***	-0.1529***	-0.1552***
	(-5.07)	(-8.53)	(-11.03)	(-11.20)
$Unemployment_{CHN}$	-6.9095***	-2.9051***	-3.8253***	-3.5144***
	(-12.90)	(-5.26)	(-6.86)	(-6.25)
$Unemployment_{HK}$	-0.2219***	-0.3823***	-0.3824***	-0.3860***
	(-4.93)	(-8.37)	(-8.39)	(-8.47)
ER_{USDCNY}	-1.7321***	-3.4197***	-3.1673***	-3.3537***
	(-14.72)	(-24.79)	(-22.73)	(-22.79)
ER_{USDHKD}	2.8026**	3.3017**	2.4029**	3.4663***
	(2.40)	(2.84)	(2.07)	(2.90)

ΔCDS_{CHN}	0.0134***	0.0121***	0.0116***	0.0116***
	(9.19)	(8.32)	(7.98)	(7.96)
ΔCDS_{HK}	-0.0012	-0.0012	-0.0012	-0.0010
	(-0.53)	(-0.51)	(-0.50)	(-0.42)
Coske	0.0295***	0.0448***	0.0385***	0.0419***
	(5.83)	(8.88)	(7.61)	(8.16)
Drisk	0.8402***	1.2966***	1.2207***	1.2847***
	(6.64)	(10.14)	(9.55)	(9.97)
ILL	-23.3949	-69.1391***	-49.4555***	-57.6456***
	(-1.61)	(-4.78)	(-3.41)	(-3.93)
IVOL	-43.4169***	-26.6928***	-31.7442***	-32.4369***
	(-9.16)	(-5.62)	(-6.67)	(-6.82)
Max	3.4408	10.0050***	12.2461***	13.7715***
	(1.08)	(3.13)	(3.83)	(4.28)
MOM	0.3928***	0.2145***	0.1464**	0.1535**
	(6.51)	(3.50)	(2.38)	(2.50)
Skewness	-0.1902**	0.1456*	0.1866**	0.2309***
	(-2.23)	(1.67)	(2.14)	(2.62)
R^2	0.3228	0.3267	0.32291	0.3293

As for credit risk, this study discovered that when China's CDS increased by one unit, yield spread would increase by 0.012%, whereas Hong Kong's CDS was not significantly affected. This indicates that the credit risk of the issuing company's location will influence the yield spread between both places.

As for the exchange rate, when the RMB depreciated against the USD, yield spread shrinks; when the RMB appreciated again, yield spread rises. When the RMB appreciated, foreign investors would sell dim sum bonds, causing their yield rate to rise and further impacting yield spread.

China and Hong Kong's macroeconomic variables and the market factors of China's A-share market still had significant influence when the expected exchange rate, monetary policy uncertainty and credit risk were considered. Both China's inflation rate and growth rate had significant positive influence, whereas both Hong Kong's inflation rate and growth rate had significantly negative influence. The influence from illiquidity and material volatility was negative, whereas the influence from DRisk and Coskew were both positive. When the illiquidity of A share rose, bond price also fell and yield rate climbed, causing the interest rate spread to shrink.

Table 5 shows the regression result of exchange rate risk and monetary policy uncertainty. After the macroeconomic variables, stock market factors, credit risk and exchange rate were considered, China's monetary policy uncertainty would still influence the RMB's exchange rate risk. Generally, increase in money supply will have a negative impact on exchange rate; and vice versa. When monetary policy uncertainty increases and the central bank's putting money into circulation was difficult for the market to predict, panic will grow stronger and exchange rate risk will rise.

Table 5 Regression Results: Exchange Rate Risk and Monetary Policy Uncertainty

Table 5 shows the regression results of monetary policy uncertainty against exchange rate risk. Y* stand for the adjusted monetary policy uncertainty in China. ER_{USDCNY} and ER_{USDHKD} are RMB to USD exchange rate and HKD to USD exchange rate, respectively; $Inflation_{CHN}$ and $Inflation_{HK}$ are China and Hong Kong's inflation rates measured by CPI, respectively; GDP_{CHN} and GDP_{HK} are China and Hong Kong's GDP growth rate, respectively; $Unemployment_{CHN}$ and $Unemployment_{HK}$ are China and Hong Kong's unemployment rate, respectively; ΔCDS_{CHN} and ΔCDS_{HK} are the volatility of the five-year sovereign CDS Spread between China and Hong Kong, respectively; Ted_{CHN} and TED_{HK} are the difference between a three-month range Shibor and overnight offered rate of China and the difference between a three-month range Hibor and overnight offered rate of Hong Kong, respectively. NDF_{12M} is the expected one-year forward exchange rate; ILL is the indicator of Chinese stock market illiquidity; IVOL is the idiosyncratic volatility; MOM is the momentum indicator of the Chinese stock market; Skewness is the coefficient of skewness of the Chinese stock market; Coskewness is the coskewness of the Chinese stock market; DRisk is the downside risk. The sample period ranges from January 2011 to December 2015. Numbers in parentheses are t-values; *, ** and *** stand for a significant level of 10%, 5% and 1%, respectively. The sample duration ranged from January 2011 to December 2015.

	Model 5		
Intercept	1.5660***	60.3000***	67.6668***
	(101.91)	(3.72)	(4.94)
Y^*	0.2349***	0.1474***	0.0965***
	(48.13)	(47.53)	(35.04)
TED_{CHN}		-0.0531***	-0.0594***
		(-3.94)	(-5.20)
TED_{HK}		-0.3377	-3.1639***
		(-0.68)	(-8.14)
$Inflation_{CHN}$		1.0478***	1.1509***
		(53.72)	(58.11)
$Inflation_{HK}$		0.02938**	-0.0750***
		(2.35)	(-5.91)
GDP_{CHN}		-6.7391***	-7.1821***
		(-82.98)	(-78.08)
GDP_{HK}		0.4870***	1.2662***
		(23.23)	(60.90)
$Unemployment_{CHN}$		-62.2295***	-53.3243***
		(-113.31)	(-62.71)
$Unemployment_{HK}$		3.0807***	3.4536***
		(44.07)	(49.77)
ER_{USDCNY}		27.0510***	24.5948***
		(207.76)	(132.82)
ER_{USDHKD}		3.4530	1.4870
		(1.60)	(0.80)
ΔCDS_{CHN}		-0.0212***	0.0313***
		(-7.20)	(13.47)
ΔCDS_{HK}		0.0235***	-0.0069*
		(4.89)	(-1.85)
Coske			-0.1674***
			(-20.78)
Drisk			-6.5360***
			(-32.35)
ILL			414.7616***
			(17.91)
IVOL			-115.2252
			(-15.59)
Max			-153.0666***
			(-30.24)
MoM			3.5008***
			(36.61)
Skewness			-8.4429***
			(-66.70)
R^2	0.0561	0.6769	0.8080

Table 5 shows a negative influence of China's GDP growth on the RMB's exchange rate risk, indicating that the more robust China's GDP growth was, the smaller the RMB's exchange rate risk. The illiquidity of A share had a significant positive influence – when the market was faced with liquidity risk, the RMB's exchange rate risk would go up. The RMB's exchange rate had a significant influence – when exchange rate rose (the RMB depreciated), exchange rate risk would go up.

Table 6 reveals the regression result of expected foreign currency reserves and expected exchange rate, indicating that China's foreign currency reserves were under a significant influence of expected exchange rate. When expected exchange rate went up, institute and individual investors would hold more RMB, thus foreign currency reserves would increase; and vice versa.

Table 6 Regression: Foreign Exchange Reserves and Expected Forward Exchange Rate

Table 6 shows the regression results of forward exchange rate anticipation against China's foreign currency reserves. NDF_{12M} is the expected one-year forward exchange rate. σ^2_{NDF12m} is the expected exchange rate volatility. Numbers in parentheses are t-values; *, ** and *** stand for a significant level of 10%, 5% and 1%, respectively. The sample period ranges from January 2011 to December 2015.

	Model 6		
Intercept	-207.7158***	165.5009**	-165.6651*
	(-2.84)	(2.29)	(1.73)
NDF12M	118.6617***		113.5854***
	(5.17)		(4.70)
σ^2_{NDF12m}		-19.9443*	-6.4641
		(-1.99)	(-0.69)
R^2	0.2458	0.0459	0.2502

Table 7 shows the regression result of dim sum bond issuance and monetary policy uncertainty – when China's monetary policy uncertainty increased, the issuance of dim sum bonds would decline and vice versa. The increase in monetary policy uncertainty would cause the RMB's exchange rate volatility to go up and further impacted the issuance of dim sum bonds. This is consistent with H2 of this study.

Table 7 Regression: Circulation of Dim Sum Bonds and Y*

Table 7 shows the regression results of the influence of monetary policy uncertainty on the circulation of dim sum bonds. Y* stands for monetary policy uncertainty. Numbers in parentheses are t-values; *, ** and *** stand for a significant level of 10%, 5% and 1%, respectively. The sample period ranges from January 2011 to December 2015.

	Model 7
Intercept	0.4504**
	(2.53)
Y^*	-0.1420**
	(-2.65)

Empirical results showed that foreign investors were more sensitive than domestic investors about China's monetary policy uncertainty. The main reason was that China's monetary policy uncertainty would directly influence the RMB's exchange rate volatility. Moreover, the RMB's exchange rate would influence dim sum bonds' issue size, trading volume and trading price. Exchange gains and losses were the primary consideration of foreign investors in dim sum bonds. When expected exchange rate fell, empirical results showed that the issue size of dim sum bonds and China's foreign currency reserves would fall rapidly. When this happened, investors would sell dim sum bonds, causing price to fall and yield rate to go up. Therefore, spread between domestic bonds and dim sum bonds would decrease.

5. Conclusion

China's monetary policy has low transparency and high uncertainty, which leads to fluctuations of the expected exchange rate volatility and influences the dim sum bond market. With empirical research method, this study employs the QVAR model to extract the latent monetary policy uncertainty and explore its impacts on the expected RBM volatility and the yield spread between China's domestic corporate bonds and dim sum bonds.

Our findings are as follows. Monetary policy uncertainty has a significant negative influence on the yield spread between China's domestic corporate bonds and dim sum bonds even after controlling for forward exchange rates and expected exchange rate volatility, the authors further identify the expected exchange rate volatility also has a significant positive influence on the yield spreads; the monetary policy uncertainty has a significant positive influence on expected exchange rate volatility, and the monetary policy uncertainty has a significant positive influence the issuance of dim sum bonds.

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