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Impacts of US Monetary Normalisation on Corporate Bond Market in Emerging Asia

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Abstract

This paper studies the potential impacts of US monetary normalisation on the emerging Asian corporate bond market, which has experienced explosive growth in recent years and become a crucial source of financing for the regional corporate sector. After controlling for global and economy-specific variables, we find that increase in US Treasury yields has the effects of reducing issuance, though only moderately, and shortening tenor in the corporate bond markets in emerging Asia. While no direct impact of US Treasury on corporate bond pricing is found, there is likely to be an indirect impact through domestic sovereign bond yields, in light of the significant pass-through from domestic sovereign to corporate bond yields, as well as evidence found on the pass-through from US Treasury yields to sovereign yields in the region in previous studies.

JEL Classifications: G12, G15, G30

Keywords: corporate bonds, unconventional monetary policy, emerging Asia, bond issuance, bond tenor, bond pricing

1. Introduction

Since the global financial crisis, unconventional monetary policy (UMP) actions of the US Federal Reserve have pushed interest rates down to unprecedentedly low levels globally. In Asia, corporate bond markets have experienced phenomenal growth as investors searched for yields (Figures 1 and 2). With the

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US economy showing sustained signs of strength, monetary policy normalization has begun: the Fed phased out its large scale asset purchase program (LSAP) in late 2014 and raised its policy interest rate for the first time in seven years in December 2015. With more tightening moves expected in the pipeline, concerns are mounting for the increasingly indebted corporate sector in Asia. Since financial markets are highly interconnected nowadays, the potential threat to the global financial stability has increasingly raised eyebrows in international policy forums.[1]

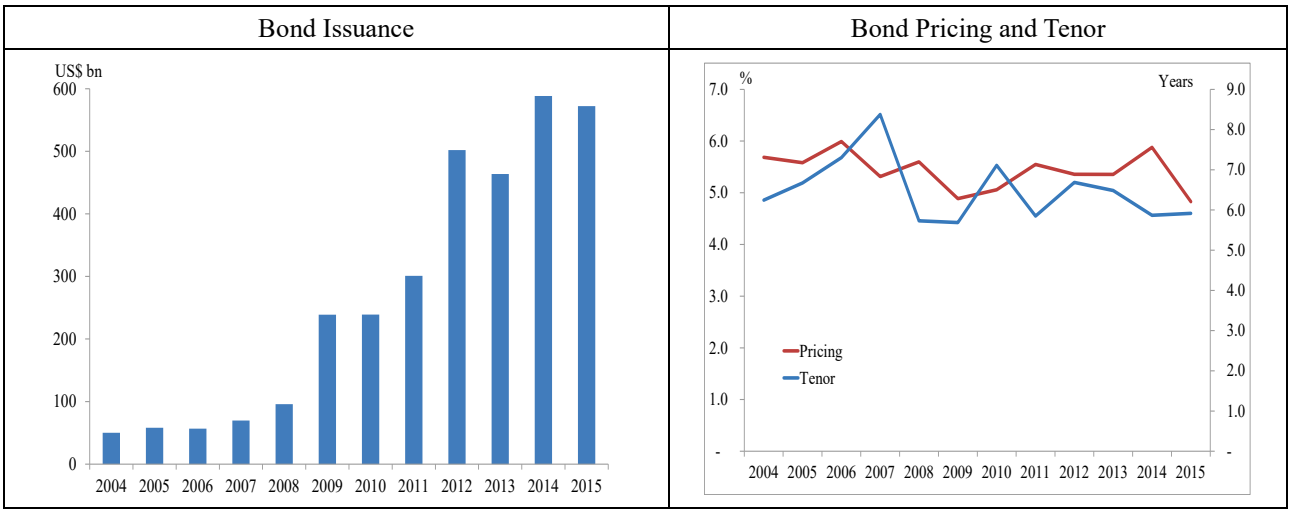

Figure 1: Market of non-financial corporate bonds in emerging Asia

Note: Bond issuance refers to the total issuance by non-financial corporates in eight emerging Asian economies, namely, China, Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand. Bond pricing and tenor are the weighted average of these economies.

Source: Authors' estimates based on data from Dealogic.

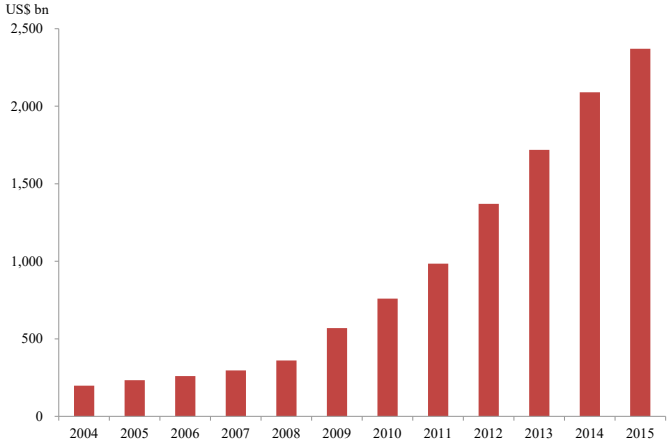

Figure 2: Outstanding amount of corporate bonds in emerging Asia

[1] For example, the Financial Stability Board Plenary Meeting on 25 September 2015 highlighted concerns that a build-up of corporate debt in emerging market economies (EMEs) could make these economies more vulnerable to shocks and a potential source of contagion to the rest of the global financial system. The International Monetary Fund [IMF] also raised similar concerns, based on their empirical findings that global financial condition plays a larger role in explaining leverage growth than firm- or country-specific factors of individual EMEs. For details, see Chapter 3 of IMF (2015).

Note:

(1) The outstanding amounts are estimated based on data about the issuance of debt securities by assuming that all debt securities will be matured on their original maturity date.

(2) This chart covers eight economies in emerging Asia, namely China, Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand.

Source: Authors' estimates based on data from Dealogic.

Against this backdrop, we investigate the potential impacts of US monetary normalization on the corporate bond markets of eight emerging Asian economies, namely, China, Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand.

2. Econometric Model

We use a panel data model similar to that of Lo Duca, Nicoletti, and Martinez (2016) with the following specification:

$$Y_{it} = \alpha + \beta_1 USTSY_{it} + \beta_2 X_{it} + \beta_3 G_t + \varepsilon_{it} \ ,$$

where the dependent variable Y is one of the three aspects about the corporate bond market, namely, bond issuance volumes, bond tenors and bond pricing. The 10-year US Treasury yield (USTSY) is used to capture US UMP actions for the reason that, according to many previous studies, these actions have direct impact on US Treasury yields. For example, Gagnon, Raskin, Remache, and Sack (2011) found that long-term US Treasury yields declined by up to 150 basis points around major LSAP announcements between December 2008 and March 2010. Krishnamurthy and Vissing-Jorgensen (2011) and Hamilton and Wu (2012) also found similar results. Therefore, it is reasonable to believe that the opposite would occur when UMP is unwound. Note that in this model setup, endogeneity or reverse causality should not be a concern since the priority of Federal Reserve policymakers in deciding UMP actions is primarily domestic economic and financial conditions rather than those of international economies. Therefore, from the perspective of emerging Asia, US UMP can be regarded as exogenous and pre-determined.

Other explanatory variables are included to control for the influences of global factors G (e.g., US VIX, slope of the US Treasury yield curve) and economy-specific factors X (e.g., local inter-bank interest rates, volatilities of local stock markets, and CDS spreads of individual economies). Because of the presence of unit roots, the first difference of a variable is used for estimation.

3. Data

The data of corporate bond issuance, tenor and pricing are obtained from Dealogic, whereas those of the remaining variables from Bloomberg, EPFR, CEIC, JP Morgan and Thomas Reuters. Our study period is Q1 2004 to Q4 2015, constrained by data availability. It is noteworthy that this period spans over more than one US monetary cycle, thus providing enough variability for the analysis. Tables 1 and 2 respectively provide descriptive statistics of the dependent and explanatory variables.

4. Empirical Results

It is found that an increase in the long-term US Treasury yield has a negative and statistically significant relationship with the issuance amount and tenor at issuance of bonds issued by non-financial corporations in the eight Asian economies (Table 3). More specifically, a one percentage point increase in the 10-year Treasury yield is associated with a US$117 million decline in corporate bond issuance in the Asian economies. Such an impact appears to be relatively moderate when viewed in relation to the present size of the market. To put matters in context, for the past three years, all the economies covered in this study registered an average annual corporate bond issuance well exceeding US$4 billion each year. Similarly,

the impact on bond tenor appears to be moderate, with the same amount of yield increase found to be associated with an approximately 0.7 year reduction in their tenor at issuance.

However, the impact of long-term US Treasury yield on bond pricing at issuance is found to be statistically insignificant, suggesting that any impact might be indirectly through the channel of sovereign bond yields. Indeed, it is noted that sovereign bond yields are found to be an important factor affecting corporate bond pricing, with an estimated coefficient of 0.36 and it is statistically significant (Table 3). As the findings of previous research works (e.g., Fong, Hui, & Wong, 2015) suggest that the impacts of US Treasury yield changes on Asia Pacific sovereign bond yields are highly significant, its indirect impact on the corporate bond yields in the region can potentially be considerable.[2]

Table 1: Descriptive statistics of the dependent variables

	Mean	Standard Deviation	Minimum	Maximum
Corporate bond issuance (US$ billion)				
China	38.10	46.22	0.11	175.28
Hong Kong	2.30	2.23	0.03	11.16
Indonesia	0.87	1.06	0.01	4.36
Korea	8.77	4.13	1.79	19.10
Malaysia	2.42	2.30	0.07	14.39
Philippines	0.78	0.74	0.05	3.51
Singapore	1.31	1.09	0.05	4.35
Thailand	1.68	1.30	0.01	4.95
Corporate bond pricing (%)				
China	5.34	0.85	3.75	7.24
Hong Kong	5.54	1.66	2.45	11.94
Indonesia	10.90	3.80	4.95	20.29
Korea	5.46	1.79	2.59	10.96
Malaysia	5.12	1.45	0.04	9.64
Philippines	7.47	1.96	2.37	12.82
Singapore	5.01	1.51	2.67	8.89
Thailand	4.93	1.02	3.24	8.45
Corporate bond tenor (years)				
China	8.37	3.48	4.47	22.02
Hong Kong	7.69	2.12	2.72	14.30
Indonesia	6.93	3.36	2.79	17.35
Korea	4.82	1.25	2.86	10.38
Malaysia	9.65	3.25	3.00	22.30
Philippines	7.19	2.00	3.82	15.01
Singapore	6.29	2.05	2.08	14.12
Thailand	6.28	2.20	2.00	13.74

Note: For the study period Q1 2004 Q1 to Q4 2015.

Source: Authors' estimates based on data from Dealogic.

[2] Their findings also suggest that the impacts could be magnified several times under turbulent market conditions, depending on the economic fundamentals of the individual countries.

Table 2: Descriptive statistics of the explanatory variables

	Source	Mean	Standard Deviation	Minimum	Maximum
Global variable					
10-year US Treasury yield (%)	Bloomberg	3.71	1.21	1.43	6.79
US VIX index	Bloomberg	20.68	8.85	9.89	80.86
Slope of US yield curve (%)	Bloomberg	1.49	0.93	-0.52	2.91
Economy-specific variable					
Bond fund flows (in US$ mn)	EPFR Global	28.98	187.23	-2076.52	2078.66
Sovereign bond yields (%)	Thomson Reuters	5.07	3.14	0.50	20.96
CDS spreads[3] (basis points)	Bloomberg and JPMorgan	118.89	119.83	1.00	1250
Inflation (%)	CEIC	3.06	2.94	-5.26	18.38
Inter-bank interest rate[4] (%)	Bloomberg	3.84	3.21	-1.31	17.99
Stock market volatilities[5]	Bloomberg	1.34	0.64	0.34	7.29

Note: For the study period from Q1 2004 to Q4 2015.

5. Concluding Remarks

In summary, our findings suggest that we are likely to see a reduction in bond issuance and a shortening of tenors at issue in the emerging Asian markets during the process of US monetary policy normalization. However, these impacts appear only moderate. We find no direct impact of US Treasury yields on domestic corporate bond yields. Nonetheless, the fact that the strong pass-through from sovereign bond yields to corporates bond yields in Asia, combined with evidence from other studies of significant spillover from US Treasury yields to sovereign bond yields in the region, means that the impact that works itself through the pricing of sovereign bond yields to corporate bond yields should not be ignored.

[3] Because of unavailability of data, the sovereign CDS spreads of Singapore is proxied by the CDS spreads of Singapore Telecom.

[4] To control for local funding costs, we use the three-month interbank rates obtained from Bloomberg, namely the Shanghai Interbank Offered Rate (China), the Hong Kong Interbank Offered Rate (Hong Kong), the Korea Interbank Offered Rate (Korea), the Jakarta Interbank Offered Rate (Indonesia), the Kuala Lumpur Interbank Offered Rate (Malaysia), the Philippine Interbank Reference Rate (Philippines), the Singapore interbank offered rate (Singapore) and Bangkok Interbank Offered Rate (Thailand).

[5] The time-varying volatilities of local stock markets are proxied by conditional volatilities of the respective MSCI country indices derived from the GARCH (1,1) models.

Table 3: Empirical results

Dependent Variable: Bond Issuance Amount

Explanatory Variables	Coefficient	Std. Error	
US Treasury yield	-116.61	37.90	***
US VIX index	-6.38	3.51	**
Bond fund flows	0.07	0.09	
CDS spreads	-0.58	0.48	
Stock market volatilities	-183.55	50.63	***
Inter-bank interest rate	-39.61	21.69	**
GDP growth	9.11	6.40	
Inflation rate	-29.71	17.08	*
Constant	374.00	26.26	***
Number of observations	312		
Adjusted R squared	0.0981		

Dependent Variable: Bond Tenor at Issuance

Explanatory Variables	Coefficient	Std. Error	
US Treasury yield	-0.67	0.29	***
US VIX index	-0.06	0.03	***
CDS spreads	0.00	0.00	
Slope of US yield curve	0.10	0.22	
GDP growth rate	0.14	0.09	
Inflation rate	-0.30	0.13	***
Constant	-0.20	0.17	
Number of observations	338		
Adjusted R squared	0.0441		

Dependent Variable: Bond Pricing at Issuance

Explanatory Variables	Coefficient	Std. Error	
US Treasury yield	0.09	0.07	
CDS spreads	0.00	0.00	***
Inflation rate	0.08	0.05	
US VIX index	-0.01	0.01	
Stock market volatilities	0.06	0.14	
Sovereign yield	0.36	0.11	***
GDP growth	-0.03	0.02	
Constant	0.02	0.05	
Number of observations	326		
Adjusted R squared	0.0384		

Note: ***, ** and * respectively stand for 99%, 95% and 90% statistically significant.

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