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Corporate Bond Issuance in Vietnam

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Abstract. The objective is to analyze the factors affecting the bond issuance scale in the Vietnamese market and make recommendations to help stabilize and orient the development of the corporate bond. STATA software is applied to analyze data in the period 2012 - 2021. The author uses regression models: Pooled OLS, FEM, REM. Then conduct tests to choose the most suitable model and remove the defects of the model. The research results show that interest rate differential (DR) and exchange rate volatility (EXR) are the factors affecting the size of Vietnamese corporate bond issuance. The research results can be used as a reference for decision-makers to develop the bond market in both breadth and depth, ensure system safety, step by step approach to the best practices and standards. international standards and modernize market infrastructure, making the market an important medium and long-term capital mobilization channel for the economy with reasonable capital costs.

Keywords: bonds, corporate bonds, issuance scale, bond market.

1. Introduction

Asia went through a financial crisis in 1997, this crisis seriously affected many countries in the region and the whole world. This crisis started in Thailand, and then affected the stock markets and major money centers. Although called the East Asian crisis, its effects spread globally and caused a global financial crisis, with major impacts spreading to Russia, the United States, Brazil, …This crisis demonstrates the problems surrounding the underdeveloped food markets of Asian countries. Many analyzes have also shown that corporate bonds in these countries are small in size, accompanied by slow growth, and borrowers depend mostly on bank credit.

According to calculations and assessments of the Ministry of Finance, by the end of 2017, the total outstanding value of the corporate bond market was about 6.19% of GDP. By the end of September 2018, it was estimated that the total scale of corporate bond issuance was VND 79,515 billion, an increase of 83% over the same period in 2015 of VND 43,000 billion and outstanding loans increased by 32% over the same period in 2017 and accounting for about 1.48% of GDP.

In practice, in the past 5 years, the Vietnamese corporate bond market has grown at an average growth rate of 46%/year. By the end of 2021, the market has nearly 1.2 million billion VND mobilized by businesses through the bond market, accounting for about 12% of the total credit balance of the whole economy. However, the scale of Vietnam's food market only accounts for about 15% of GDP, much lower than other countries in the region. In some developed and developing countries, many authors have written on this topic, however, the development characteristics as well as infrastructure in these countries are not similar to those of Vietnam. Therefore, these markets are almost impossible to represent Vietnam.

It is also thanks to the increase in both transaction size and issuance volume mentioned above that has helped Vietnam's bond market develop stronger to serve the capital mobilization needs of the State and local authorities of the system of commercial banks and of businesses that need capital. Legal regulations related to the operation of the bond market have also been fully promulgated, adding consistency and synchronization from the level of Laws, Decrees to guiding circulars.

In Vietnam, up to the present time, many authors have conducted research and research works on the bond market. However, most studies focus on the government bond market. Therefore, it is necessary to have a separate study to determine the factors affecting the issuance scale of the corporate bond market in Vietnam. Therefore, the author chooses the topic *"Corporate bond issuance in Vietnam"* to conduct the research. Research results and recommendations to help stabilize and orient the development of Vietnam's corporate bond market in the coming time.

2. Literature review

Martellini et al. (2003) defined a bond as a financial obligation of the issuer (or borrower) that undertakes to repay the bondholder (or lender) a periodic amount of principal and interest, calculated on the loan principal for a certain period of time. Ordinary bonds are bonds that pay interest periodically and pay principal on the maturity date. According to Collin (2003), a bond is a contract by the issuer that promises to repay a borrowed amount by a certain date and to pay interest periodically. A bond can be considered a long-term government or business loan, with a fixed or floating interest rate at the sale price. Jason Fernando (2022), Lembutis et al. (2016) argued that a bond is a debt instrument issued by an institution (government or business) and securitized as a tradable asset. According to Clause 3, Article 4 of the Securities Law 2019, a bond is a type of security that confirms the owner's lawful rights and interests to a portion of the debt of the issuer. Thus, a bond is a type of debt instrument in which the issuer's obligation is to pay the holder a predetermined amount of interest at a specific time in the future and to repay the original loan principal when it is due.

According to Collin (2003), the bond market is defined as the place where bonds are traded. In which, trading is the buying and selling of bonds. According to Mizen and Tsoukas (2014), corporate

bond market includes primary market and secondary market. Thus, the corporate bond market is a place to mobilize capital used by enterprises for business purposes, to expand production scale and to develop investment. Accordingly, this market includes primary market and secondary market.

El-Wassal (2013) mentioned about the size of the stock market as assessed through the market capitalization and the number of corporate bonds issued. The stock market includes the corporate bond market, so when considering the size of the corporate bond market, the author also considers the same parameters as the stock market. However, in essence, because the corporate bond market is not only one market but also divided, there will be a little difference in the analysis of market size. The primary market is considered based on the size of corporate bond issuance, while the secondary market is considered based on market liquidity (Mizen and Tsoukas, 2014). Within the scope of this article, the author will analyze and evaluate the scale of corporate bond issuance in the Vietnamese market.

Keynesian economic growth theory: John Maynard Keynes (1883-1946) was a British economist, considered the most influential economist in the history of modern Western economics in general and gave the best economic strategies for each country in particular in order to maintain and promote the economic growth of each country. When conducting an analysis of the cost of investment for each firm, he observed that investment plays an important role in the scale of production and, subsequently, the overall economic growth. Each increase in investment will spur an increase in the supply of labor and the demand for raw materials. When studying consumption for investment by businesses, he argued that investment plays a decisive role in the size of employment and, accordingly, economic growth. Each increase in investment entails an increase in the demand for additional workers, the demand for means of production. Therefore, increasing consumer demand, increasing commodity prices, and increasing jobs for workers. All of that makes the income increase. In turn, increasing income is the premise for an increase in new investment. This is the investment multiplier process: increasing investment increases income; increasing income increases new investment; increasing in new investment increases new income - the economy grows.

Rostow Model: The Rostow model suggests that each country has to go through five stages of development: (i) Traditional society: the economy is mainly agricultural production, low labor productivity, material and spiritual life of the poor population; (ii) Preparing for take-off: Starting with businesses that have the ability to change the economy, infrastructure is interested. Starting to have many economic centers; (iii) Take off: Investment increased, industry developed, began to have key industries with high economic efficiency, economic growth, increased labor productivity, expanded international trade; (iv) Maturity: Investment increases further, new and more modern industries appear. The social structure changed, people's quality of life improved markedly; (v) High consumer society: Highly socialized production, mass production of sophisticated consumer goods and services, prosperous nation.

Tendulkar (2015) conducted a study in the period 2004 - 2013 of 62 countries with emerging economies using rank correlation analysis (Kendall) and fixed effects regression (FEM). The FEM test concluded that the size factors of the government bond market, the number of listed firms on the stock market, the risk premium, the consumer price index, and the size of credit Banks have an impact on the size of the corporate bond market in that country. As for international corporate bonds, it is influenced by the stages of economic development through GDP per capita, the number of enterprises listed on the stock market, the size of domestic credit and the difference interest rate difference. From the analysis results, it is shown that the size of corporate bonds is generally influenced by the government bond market, political institutions, the number of enterprises listed on the stock market, interest rate differentials, the size of the domestic credit market, the consumer price index and the risk premium.

Bhattacharyay (2013) conducted a study on the size of the bond market in 10 Asian countries in the period 1998 - 2008 to find out the impact of macro factors on the size of the bond market: the size of the bond market, the openness of the economy, the stage of development of the economy, the size of

the banking system, interest rate differentials and exchange rates. The author believes that, when the size of the market is small, investors will not want to participate in this market. Therefore, the size of the economy must reach a certain magnitude to affect the bond market in general and the corporate bond market in particular. At the same time, in economies with large openness, the economy in general is competitive, so the corporate bond market is also limited to develop. In general, countries with developed economies will have developed corporate bond markets and vice versa.

Kowalewski and Pisany (2017) studied the development of corporate bond markets in 10 Asian countries between 1995 and 2014. Using GLS estimates, panel data on market size and the total number of bonds issued, the author confirmed that macro factors, namely the size of the economy, the size of the banking system and institutions have an impact on the increase in the size of Asian corporate bond market.

Nguyen Thi Nhung and Tran Thi Thanh Tu (2019) determined 11 criteria to assess the liquidity of the corporate bond market from previous studies. In the primary market, the aggregated criteria are issuance size, current outstanding balance and growth rate. In the secondary market, it is measured by trading volume, growth rate and turnover ratio (the ratio between trading volume and circulating volume).

Tran Thi Thu Hien (2020), by means of descriptive statistics and regression model testing to show the effects on the size of the corporate bond market in Vietnam. From the research, it is shown that the size of the economy, the openness of the economy, the size of the banking system, exchange rate fluctuations, foreign exchange reserves and creditor rights affect the primary market. For the secondary market, it is affected by the age of the bond, the risk of default, the volatility of corporate profits and the trading size of the stock.

The correct identification of the factors affecting the issuance scale will help the managers to operate the financial - monetary policy. Members participate in formulating measures to influence factors to promote the development of Vietnam's bond market. In countries with developed and developing financial markets, many scientific researchers have written on this topic, however, it can be seen that the development characteristics as well as the infrastructure in these countries have the characteristics are not similar to Vietnam, so these markets can hardly represent Vietnam. Therefore, it is necessary to have a separate study on determining the factors affecting the issuance scale of the Vietnamese corporate bond market. At the same time, in this article, the author has introduced the theoretical basis to explain the influence of factors on the scale of corporate bond issuance.

Based on the thesis of Tran Thi Thu Hien (2020), the author proposes a model to test the factors affecting the issue size of corporate bonds and conducts the test for the primary corporate bond market. Tested influencing factors include: size of the economy, openness of the economy, development stage of the economy, size of the banking system, interest rate differentials, fluctuations of the banking system, exchange rate, foreign exchange reserves. The author also uses the value of additional bonds issued in each quarter as a scale for the size of the issue instead of the current bond value. The data used is the time series data corresponding to the quarterly bond issuance size in the period 2012 – 2021.

3. Research methodology

Research model based on the theoretical basis and previous studies of Eichengreen and Luengnaruemitchai (2004), Braun and Briones (2006), Mu et al (2013), Bhattacharyay (2013); Gu and Kowalewski (2015); Kowalewski and Pisany (2017), the author uses the following model:

$$\mathbf{VOL_t = \beta_0 + \beta_1 Log(GDP)_t + \beta_2 EXP_t + \beta_3 Log(PGDP)_t + \beta_4 DR_t + \beta_5 CRED_t + \beta_6 EXR_t + \beta_7 FER_t + \mu_t}$$

Table 1. Description of variables in the model

Variable	Symbol	Unit	Source
The size of corporate bond issuance	VOL	Billion dollars	Asianbondsonline.adb.org
The size of the economy	Log(GDP)	%	Vietstock.vn
The trade openness of an economy	EXP	Million dollars	finance.vietstock.vn
The stage of economic development	Log(PGDP)	%	General Statistics Office
The difference between the average savings and lending interest rates	DR	%	Data.imf.org
The size of the banking system	CRED	Million dollars	Data.imf.org
Exchange rate volatility	EXR	VND/USD	Data.imf.org
Foreign exchange reserves	FER	Million dollars	Data.imf.org

Source: Compiled by the author

Table 2. Hypothesis of the model

Factor	Impaction	Author (year)	Hypothesis
The size of the economy	+	Eichengreen & Luengnaruemitchai (2004); Braun & Briones (2006); Bhattacharyay (2011; 2013)	+
The trade openness of an economy	+	Eichengreen & Luengnaruemitchai (2004); Bhattacharyay (2013)	+
The stage of economic development	+	Eichengreen & Luengnaruemitchai (2004); Braun & Briones (2006); Bhattacharyay (2013); Mu et al (2013); Nguyen Hoa Nhan et al (2014)	+
The difference between the average savings and lending interest rates	-	Bhattacharyay (2013);Fredrick (2014)	+
The size of the banking system	-/+	Bhattacharyay (2013); (Hawkins, 2002); Hwang (2016), Eichengreen & Luengnaruemitchai (2004)	-/+
Exchange rate volatility	-	Fredrick (2014); Eichengreen & Luengnaruemitchai (2004), Bhattacharyay (2011; 2013), Mu et al (2013)	-
Foreign exchange reserves	+	Maurya & Mishra (2016)	+

Source: Compiled by the author

4. Results and discussion

The descriptive statistical analysis method helps the author to have a more general view of the number of observations and variables. The statistical results are shown below:

Table 3. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
VOL	40	5.13625	5.612386	1.63	26.37
LogGDP	40	0.714961	0.241872	-0.4437	0.883661
EXP	40	50738.07	17124.96	24874	91717
LogPGDP	40	3.464056	0.077679	3.34049	3.574782
DR	40	2.904475	0.793531	1.645333	4.833333
EXR	40	22093.25	891.2784	20828	23244.64
CRED	40	61.80653	29.52535	29.4664	153.5642
FER	40	50888.13	26766.66	17799.26	109371.4

Source: Extracted from Stata 16

Table 4. Autocorrelation Matrix

	VOL	LogGDP	EXP	LogPGDP	DR	EXR	CRED	FER
VOL	1							
LogGDP	-0.404	1						
EXP	0.7966	-0.2046	1					
LogPGDP	0.6555	-0.2528	0.9395	1				
DR	0.6864	-0.3077	0.4744	0.347	1			
EXR	0.6018	-0.237	0.9266	0.9781	0.2535	1		
CRED	-0.146	0.1915	-0.1184	-0.0816	-0.3227	0.0082	1	
FER	0.8461	-0.3896	0.9473	0.9245	0.6113	0.8814	-0.1863	1

Source: Extracted from Stata 16

If the absolute values of the pairwise correlation coefficient between the variables are all less than 0.8, the model does not have autocorrelation between the independent variables (Farrar and Glauber, 1967). Table 4 shows that, the absolute value of the pair correlation coefficient between the dependent variable and the independent variable VOL and FER, the independent variables EXP and LogPGDP, EXP and EXR, EXP and FER, LogPGDP and EXR are all greater than 0.8 so the model has autocorrelation phenomenon.

Table 5. Multicollinearity Test

Variable	VIF	1/VIF
LogPGDP	47.38	0.021104
EXR	42.29	0.023648
FER	39.52	0.025302
EXP	23.2	0.043112
DR	4.00	0.250037
LogGDP	2.02	0.496195
CRED	1.32	0.754969
Mean VIF	**22.82**	

Source: Extracted from Stata 16

Table 5 shows that the mean VIF value is 22.82. The VIF magnification factor of the independent variables DR, LogGDP, CRED is less than 10. However, the VIF magnification factor of the independent variables LogPGDP, EXR, FER, EXP is larger than 10, so the model has multicollinearity. To overcome multicollinearity, it is possible to remove variables with high multicollinearity. The author performs the type of variables LogPGDP, EXP and FER with large VIF coefficients and obtains the results without multicollinearity as below:

Table 6. Multicollinearity Test (removed LogPGPD, EXP, FER)

Variable	VIF	1/VIF
DR	1.26	0.792535
LogGDP	1.16	0.865266
CRED	1.14	0.874012
EXR	1.12	0.89509
Mean VIF	**1.17**	

Source: Extracted from Stata 16

Table 7. Eegression model estimation according to Pooled OLS, FEM and REM

Variable	Pooled OLS		FEM		REM	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
LogGDP	-3.331	-1.41	-0.51	-0.23	-2.95	-1.38
DR	3.904***	5.19	-0.265	-0.25	2.108**	2.47
EXR	0.00269***	4.27	0.000362	0.10	0.00307***	3.04
CRED	0.0107	0.55	0.0097	0.63	0.00961	0.58
_cons	-63.94***	-4.55	-2.328	-0.03	-67.41***	-3.03
N	40		40		40	
R-sq	0.686		0.023			

Source: Extracted from Stata 16

The symbols *, **, *** have statistical significance at 10%, 5%, 1%, respectively.

The estimation results by Pooled OLS, FEM and REM models show that the two independent variables DR and EXR have statistical significance and have a positive impact on the dependent variable for the research model according to Pooled OLS and REM. However, the estimation of the model by the Pooled OLS method does not reflect the unique and specific impact of each enterprise. Therefore, the REM model is more suitable.

After selecting a suitable model, the author conducts a test of the model's variable variance phenomenon by using the Wald Test. The hypothesis of the test is as follows:

H_0: The model does not have heteroskedasticity

H_1: The model has heteroskedasticity

Table 8. Heteroskedasticity

Modified Wald test for groupwise heteroskedasticity in fixed effect regression model
H_0: sigma(i)^2 = sigma^2 for all i
Chi2 (10) = 2.8e+05
Prob>chi2 = 0,0000

Source: Extracted from Stata 16

The results in Table 8 show that p-value = 0.0000 < α = 0.05, so the hypothesis H_0 is rejected and hypothesis H_1 is accepted. Thus, the model occurs the phenomenon of variable variance.

The author continues to test the autocorrelation of the model by performing the Wooldridge Test with the following hypotheses:

H_0: The model does not have autocorrelation

H_1: The model has autocorrelation

Table 9. Autocorrelation test

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
F(1,9) = 179.106
Prob > F = 0,0000

Source: Extracted from Stata 16

The results of table 9 show that p-value = 0.000 < α = 0.05, so hypothesis H_0 is rejected, hypothesis H_1 is accepted. Thus, the model has the phenomenon of autocorrelation.

Based on the results of the defect test, the model has the heteroskedasticity and the phenomenon of autocorrelation between variables. To overcome these phenomena, the author uses the FGLS method, thereby obtaining suitable and highly reliable research results.

Table 10. FGLS regression

VOL	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
LogGDP	-2.57002	1.509608	-1.7	0.089	-5.528795	0.388761
DR	1.277135	0.430282	2.97	0.003	0.4337981	2.120472
EXR	0.001919	0.00041	4.68	0.000	0.001115	0.002723
CRED	0.001417	0.003209	0.44	0.659	-0.0048713	0.007706
_cons	-40.6413	9.159776	-4.44	0	-58.59417	-22.6885

Source: Extracted from Stata 16

The results of FGLS analysis show that: The independent variable of the difference between the average savings and lending interest rates in the market (DR) has a positive impact on the bond issuance scale of Vietnamese enterprises in the period 2012- In 2021, this coefficient is statistically significant at the 5% level. Accordingly, when the difference between the average savings and lending interest rates in the market increased by 5%, the bond issuance scale increased by 1.28%. Vietnam's corporate bond market is not as developed as other countries in the region, so it can be seen that fluctuations in

interest rates (both savings interest rates and lending rates) have an impact on the size of the market. release. When interest rates are high, almost a few businesses can pay off their debt. Another point, most of the companies that issue bonds in Vietnam are large to extremely large enterprises in terms of scale as well as well-known in the market. The issuance of corporate bonds by these enterprises is sometimes similar to a long-term bank loan, from 3 to 5 years, made for the purpose of debt reversal, not necessarily to finance. new for production and business activities of enterprises, so in some periods, interest rates are high, but in order to meet the financial policies of enterprises, enterprises still issue bonds.

The independent variable exchange rate volatility (EXR) has a positive impact on the bond issuance scale of Vietnamese enterprises in the period 2012-2021, this coefficient is statistically significant at 1%. Accordingly, when the exchange rate volatility increases by 1%, the bond issuance scale increases by 0.002%. From the point of view of macroeconomics, if the exchange rate in the market fluctuates stably, the Vietnamese economy will grow positively. The continuous fluctuations of the exchange rate will help people have more confidence in the solvency of domestic debt instruments, typically corporate bonds. Therefore, stabilizing the exchange rate is still one of the necessary measures to stabilize the macro-economy, thereby, aiming to develop the Vietnamese corporate bond market in a stable and sustainable manner.

5. Conclusion

The article identifies the factors affecting the scale of corporate bond issuance in the Vietnamese market in the period 2012 – 2021. The size of the economy (Log(GDP)); Trade openness of the economy (EXP); The stage of economic development (Log(PGDP)); Market average difference between savings and loan interest rates (DR); Scale of banking system (CRED); Exchange rate volatility (EXR) and foreign exchange reserves (FER) are independent variables in research model. However, from the regression results, it is shown that only the independent variable difference between the average savings and lending interest rates in the market (DR) and the fluctuation of exchange rate (EXR) has an impact on issue size mentioned above.

Adjusting interest rates depending on each stage of the market. Interest rate differentials of commercial banks may be unstable in nature, because depending on each period, depending on the specific situation of the macro-economy, limiting the country's high inflation, State banks can adjust to stabilize the macro economy in general and the Vietnamese financial market in particular. It is an indisputable fact that Vietnam's corporate bond market is not as developed as other countries in the region, so it can be seen that fluctuations in interest rates (both savings interest rates and lendings interest rates) has an impact on issuance size. When interest rates are high, almost a few businesses can pay off their debt. Another point, most of the companies that issue bonds in Vietnam are large to extremely large enterprises in terms of scale as well as famous in the market. The issuance of corporate bonds by these enterprises is sometimes similar to a long-term bank loan, from 3 to 5 years, made for the purpose of debt reversal, not necessarily to finance for production and business activities of enterprises in some periods such as interest rates are high, but in order to meet the financial policies of enterprises, enterprises still issue bonds.

Exchange rate stabilization, from the results of the regression model, it can be seen that the volatility of the exchange rate is positively correlated with the size of corporate bond issuance in the Vietnamese market in the period 2012 - 2021. But from the perspective of business, if the exchange rate in the market fluctuates, surely Vietnam's economy will be unstable. The continuous fluctuations of the exchange rate will lead to the fact that people do not have much confidence in the solvency of domestic debt instruments, typically corporate bonds. Therefore, stabilizing the exchange rate is still one of the necessary measures to stabilize the macro-economy, thereby aiming to develop the Vietnamese corporate bond market in a stable and sustainable manner. What the author says here seems to go against

the results of the regression model in chapter 4. But in terms of the macro-economy, exchange rate stability is aimed at long-term development. Looking at the history, we can see that the period 2008 - 2011, the exchange rate fluctuated very unstable. This instability has made people, domestic investors and even foreign investors a little distrustful of the Vietnamese currency, so they tend to want to hold foreign currency (USD) more, because safer, and they also do not know that in the short term and in the long run, the exchange rate will fluctuate or not. Along with that, the exchange rate difference between the official and the informal market also increased, which also contributed to the instability of the exchange rate in the market.

According to Goldberg and Knutter (1997), there are two particularly important exchange rate transmission channels, direct transmission and indirect transmission.

Direct transmission channel: when the exchange rate increases, the import price of goods will increase, which will lead to the production price of goods, making the prices of the final goods also increase if enterprises raise prices, inflation will increase.

Indirect transmission channel: This channel is related to the attractiveness of Vietnamese goods in the world market. When the exchange rate falls, domestic products become cheaper for foreign consumers, leading to increased exports. If exports increase, then aggregate demand will also increase. And when aggregate demand increases, so will an increase in the domestic price level. Thus, a decrease in the exchange rate in the long run will reduce inflation. Therefore, the exchange rate is a tool for the Government to regulate macro.

In fact, there are many factors that affect the size of the corporate bond market. However, the new article focuses on studying the impact of macro factors without mentioning the micro factors - internal to the business. Therefore, the variables in the new model only explain a small part of the variation in the scale of Vietnamese corporate bond issuance.

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