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Degree of Internationalization and Selection of Pecking Order: Evidence from Hong Kong Listed Chinese Companies

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Abstract
This paper examines the relationship between firm's degree of internationalization and its selection of pecking order. From observation on 785 Chinese companies listed in Hong Kong main board from 2010 to 2020, breadth of internationalization incentive to forward pecking order, while depth of internationalization promotes reverse pecking order.
Keywords: Internationalization, Breadth of internationalization, Depth of internationalization, Pecking order
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1. Introduction

After Hong Kong's return to China in 1997, the "One Country, Two Systems" policy was implemented, allowing the special administrative region to maintain a different social system from other regions in mainland China, namely, the capitalist system and the existing legal, economic, financial, and other social systems and financial system structures. With its well-developed financial infrastructure and similar cultural environment, Hong Kong provides a convenient financing environment for Chinese companies and has become a bridgehead for Chinese companies to "go global," implement the "Belt and Road Initiative," and achieve the "Dual Circulation" national strategy. Building financing capabilities and formulating financing strategies for Chinese companies in Hong Kong have become the most critical issues for corporate finance decision-makers.

Financing strategy selection reflects an enterprise's strategy to gain competitive advantage from a funding perspective, characterized by value attributes, comprehensiveness, and long-term orientation. It has gradually evolved from planning and managing capital structure (Sandberg, Lewellen et al. 1987) to obtain financing cost advantages, to balancing short-term financing cost savings and long-term enterprise value maintenance. The means to achieve a financing strategy include internal financing and external debt and equity financing, with the pecking order theory linking the relationships among these three.

2. Pecking order theory

The pecking order can be defined as the process of a company's series of financing choices from the initial stage to the eventual realization of capital accumulation. This process may include the selection of forward and reverse financing priorities (i.e., the forward and reverse choices of the pecking order) and capital structure adjustments (Rauh 2006). The choice of pecking order has significant implications for a company's capital structure, growth, and financial performance. Therefore, studying and optimizing the pecking order can help companies better achieve their financial goals through dynamic changes in capital structure.

Theories related to the pecking order suggest that financing needs expand gradually in the direction of increasing financing costs (Bagley and Yaari 1996), and this process is influenced by issues such as financing constraints, agency problems, and capital market pricing (Leary and Roberts 2010). When facing financing needs, companies typically use internal funds first, followed by external debt financing and equity financing in sequence (Myers and Majluf 1984). This aligns with the general principles of information asymmetry and information costs (Leary and Roberts 2010). The transition from borrowing small amounts of debt from close creditors to larger debt financing and eventually equity financing also represents an increase in information asymmetry, with the information costs borne by the company rising accordingly (Khan and Adom 2015). The debt financing spread for companies is 2.2% (excluding tax shield benefits), while the total direct and indirect costs of an IPO average 18.7% (Chod and Zhou 2014). This leads to the development of a regression equation from the financing gap to

net debt and then to net equity financing (Frank and Goyal 2003), indicating that the order of corporate financing extends from internal funds, domestic currency debt, foreign currency debt, domestic currency equity, to foreign currency equity (Allayannis, Brown et al. 2003). Although the pecking order has received substantial empirical support statistically (Allayannis, Brown et al. 2003, Nguyen and Kim 2020), some exceptions have been found (Khan and Adom 2015), including unexplained situations regarding company size and data timeliness (Baum, Schäfer et al. 2011), as well as debt heterogeneity issues encountered by Chinese companies operating in the mainland (李心合, 王亚星 et al. 2014). Additionally, capital market mispricing based on agency problems can lead to reverse pecking order choices, such as using debt financing to repurchase shares, necessitating further research that combines the classic pecking order theory with more internal and external factors (Fama and French 2005), especially financing environment factors (Khan and Adom 2015).

Furthermore, from a cross-border perspective, the pecking order issue can be explained by information asymmetry and institutional quality (Daude and Fratzscher 2008). Information asymmetry mainly refers to the interaction between multiple dimensions of information asymmetry, including between fund borrowers and lenders, within banking syndicates, and among intermediaries such as rating agencies and analysts (Darmouni 2020, Yang 2020). Institutional quality primarily involves international comparisons of the financing location (Daude and Fratzscher 2008). The more pronounced the information asymmetry and the poorer the institutional quality, the more the pecking order rule applies (Daude and Fratzscher 2008, Özer and Çam 2021). As an important theory for studying dynamic capital structure, the boundaries of debt and equity financing in the pecking order depend on the company's debt capacity (Leary and Roberts 2010) and the maintenance of control (Tappeiner, Howorth et al. 2012). Therefore, companies choose between debt and equity financing throughout their lifecycle to maintain a dynamic balance in capital structure (La Rocca, Rocca et al. 2011). Since the pecking order can be forward or reverse, and choices can be made back and forth, from a long-term business perspective, financing decisions are a study of a series of pecking order choices to gain competitive advantage, rather than a short-term choice order issue.

3. Degree of internationalization and the choice of pecking order

The ability to access financial resources is a key enabler for the growth of internationalized Chinese company. However, the decision-making for financial pecking order is highly influenced by availability of the company's international resources which can be translated into degrees of the internationalization, which comprises of international breadth indicating scope of country, and international depth representing resource occupied or reward contributed from overseas against total.

Compared to companies operating solely domestically, international companies have more options for managing their capital structure. Joliet et al. argue that international companies, due to their cross-border operations, face greater business risks, which correspond to higher financial risks, leading these companies to adopt more conservative capital structure decisions, thereby maintaining more room between their operations and potential bankruptcy (Joliet and Muller 2013, Brealey, Myers et al. 2014). However, international companies have more opportunities for business diversification to reduce both business and financial risks, thereby increasing the capacity for debt financing and reducing financing costs (Mansi and Reeb 2002, Singh, Davidson et al. 2003, Shapiro and Hanouna 2019). Compared to cross-border debt financing, Lindner et al. (2018) found, through an analysis of 31 empirical studies and 223,658 samples, that international companies from developing countries are more capable of obtaining equity financing and maintaining reasonable debt ratios. From a risk preference perspective, the capital structure of international companies is more rational, maintaining an appropriate distance from bankruptcy with a suitable debt ratio while preserving the control of major shareholders. Consequently, Yousef et al. (2020) empirically demonstrated through data from 3,773 non-financial companies in the United States that signaling is the intrinsic mechanism explaining the relationship between internationalization, capital structure, and reduced agency costs.

The extension of pecking order theory to cross-border financing activities also revolves around information frictions, agency problems, and signaling. From a national perspective, the pecking order of multinational companies' financing extends sequentially from internal financing (mainly retained earnings and reserves), domestic and foreign debt financing, to domestic and foreign equity financing, seeking external resources in a direction that minimizes threats to their ownership (Schulze, Deeds et al. 2015). In external debt financing, the information asymmetry disadvantage of short-term debt financing is significantly smaller than that of long-term debt financing; similarly, the information asymmetry disadvantage of domestic currency debt financing is

usually smaller than that of foreign currency debt financing. In the national dimension of the pecking order, debt financing is also chosen in the order of domestic short-term debt, foreign short-term debt, domestic long-term debt, and foreign long-term debt (Allayannis, Brown et al. 2003). Thus, the breadth of internationalization (the number of countries entered) positively influences the choice of pecking order.

However, the above analysis is based on the unidirectional pecking order choice of companies. When a company's financing decisions do not follow a single direction, some scholars' empirical analyses have found reverse or partially reverse pecking orders under different levels of wealth constraints, especially from the perspective of the transnational distribution of corporate income, assets, and capital, which are difficult to explain using traditional pecking order theory (李建标, 孙宾宾 et al. 2016). This is because rising bankruptcy risk increases information frictions, causing equity financing to transfer wealth from shareholders to creditors; conversely, when bankruptcy risk decreases, equity financing transfers company value to existing shareholders (Kadapakkam, Meisami et al. 2016). Additionally, from the perspective of information asymmetry, the choice of pecking order depends on the degree of information asymmetry between the company, banks, and capital markets (Lindner, Klein et al. 2018). The degree of information asymmetry is further influenced by signals from corporate valuation (Myers 1984), investment opportunities (Akhtar and Oliver 2009), and investment return volatility (Fama and French 2002). These signals can come from the previous pecking order choice and capital market conditions, leading companies to make reverse pecking order choices (Aggarwal and Kyaw 2010). Thus, the depth of internationalization (the proportion of income, assets, and capital between domestic and foreign) negatively influences the choice of pecking order.

To acknowledge the practical existence and significance of reverse pecking order choices beyond the forward pecking order, this paper incorporates reverse pecking order into the study of financing decisions, highlighting the uniqueness of this research. First, this paper's financing decisions cover the research subjects and content of the traditional forward pecking order, as well as the company's pecking order choice decisions and the associated wealth constraints, i.e., resource constraints. Second, the financing decisions extend the current research methods of the pecking order to include vectorized choices of the pecking order, including reverse and partially reverse pecking order choices, to reflect the realistic situation companies usually face in financing decision-making. Third, the reverse choice of the pecking order also reflects changes in the ranking of ownership risk threats to existing corporate controllers under altered resource constraints, changing the options available for corporate financing decisions. For example, after an IPO, the information asymmetry risk faced by the company and investors in the public debt financing market is significantly reduced, incentivizing debt investors, including banks, to lend to the company under better conditions than before the IPO. This can be further explained from the perspectives of resource-based view, agency theory, and signaling theory (董静 2017). Additionally, the optimization of capital structure after equity financing, i.e., the reduction of leverage, also benefits the company's financing decision-makers in choosing debt financing to expand tax shield advantages rather than opting for internal financing again (Chen, Ho et al. 2013). Fourth, regarding the cross-border financing issues inevitably faced by Chinese companies' internationalization, i.e., multinational Chinese companies primarily operating and generating revenue in mainland China, the research on their cross-border peck mainly focuses on the cross-border financing issues of Chinese financial enterprises. The scale of public issuance has always been a proxy variable for information frictions in the financing process, with collinearity existing between the number and structure of institutional investors and the scale of public issuance (Allayannis, Brown et al. 2003). Therefore, this paper will consider the impact of controlling for size, changes in asset structure, the scale of public financing, and the structure of international institutional investors on the relationship between internationalization and cross-border peck choices in the subsequent empirical research.
Based on the above analysis, this paper proposes the following hypotheses:
H1: The breadth of internationalization positively influences the choice of pecking order.
H2: The depth of internationalization negatively influences the choice of pecking order.

4. Data and methodology

This section first filters qualified samples according to the principles of econometric statistics. Then, based on the research hypotheses, it constructs models to be tested and explains the measurement of variables. Finally, it provides descriptive statistics for the main variables. This part first filters qualified samples according to the principles of mathematical statistics; then, based on the research hypotheses, it constructs test models, measures, tests, and explains the relationships between variables, and performs t-tests on the breadth and depth of internationalization, thereby measuring the impact of the degree of internationalization on cross-border pecking order and cross-border banking networks.

I. Sample Selection

This paper selects all listed Chinese non-financial companies that maintained their listing status between 2010 and 2020 as the initial sample and collects sample data from the following three aspects:

1. Static data of sample companies

Following the sample design of De Jong and Lee, the static data of sample companies include listing codes, company names, industry codes, shareholder information, annual financial data and their converted financial indicators, and operational data from annual reports, including the distribution of domestic and foreign institutions, geographical distribution of sales revenue and assets, and geographical distribution of shareholders (Lee, Lochhead et al. 1996, De Jong, Verbeek et al. 2010).

2. Transaction data of sample companies

The transaction data of public financing for sample companies refer to the transaction data of syndicated loans, public debt issuance (including ordinary bonds, convertible bonds, and exchangeable bonds issued by listed companies), and public equity financing (including ordinary shares, preferred shares, and warrants issued by listed companies). Following Christian and Kadapakkam, the transaction data of the sample include transaction amount, time, lead bank, and lead bank market share ranking (Daude and Fratzscher 2008, Kadapakkam, Meisami et al. 2016).

Based on the above screening criteria, this paper ultimately obtained an unbalanced panel data sample of Chinese non-financial companies listed in Hong Kong from 2010 to 2020 (a total of 785 companies and 5,215 observations), covering six major industries (see Tables 3.1 and 3.2). Among them, 395 companies (2,621 observations) had overseas income, and 390 companies (2,594 observations) had no overseas income; 781 companies (5,187 observations) had overseas institutions, and 4 companies (28 observations) had no overseas institutions.

Table 1 Distribution of Listing Years for the Sample

Listing Year	Number of Samples	Percentage (%)
2010 and before	1654	31.72
2011	382	7.32
2012	362	6.95
2013	286	5.48
2014	352	6.75
2015	252	4.84
2016	226	4.33
2017	206	3.95
2018	398	7.64
2019	498	9.55
2020	598	11.46

Table 2 Distribution of Industries of the Sample

Industry Name	Number of Samples	Percentage (%)
Information Technology	609	11.68
Pharmaceuticals & Biotechnology	413	7.92
Real Estate	649	12.44
Light Manufacturing	1646	31.56
Heavy Manufacturing	1500	28.76
Public Utilities	398	7.63
Total：	5215	100

II. Model Construction

Currently, the most common research on financing decisions in academia uses the Ordinary Least Squares (OLS) model. In the main model, this paper adopts a multiple regression model and, to mitigate the impact of heteroscedasticity, following the practices of existing scholars (Stulz 2010, Özer and Çam 2021), all regression models are estimated using robust standard errors. Based on the research hypotheses of this paper, the following two models to be tested are set:

$$Peckorderi,t = \beta0 + \beta1InternationalBreadthi,t + \beta2InternationalDepthi,t + \beta3Controli,t + \varepsilon i,t \quad (1)$$

In the above equation (1), Peckorderi,t is the explained variable of pecking order choice, representing the cross-border pecking order of Chinese non-financial company i in year t. This paper first tests the pecking order choice based on the accounting statement data as the explained variable, and then replaces it with the pecking order choice based on market transaction data for robustness testing.

InternationalBreadthi,t and InternationalDepthi,t represent the breadth and depth of internationalization, respectively. Correspondingly, β1 and β2 measure the impact of the breadth and depth of internationalization on the choice of pecking order and banking network selection, respectively.

The control variable Controli,t represents all control variables of Chinese non-financial company i in year t. εi,t is the random disturbance term.

III. Variable Description

(I) Dependent Variable: Cross-border Financing Decision Choice

1. Dependent Variable: Pecking order Choice

The pecking order of listed companies is a comprehensive translation of the financing sequence and direction involved in this paper's study of the Pecking Order theory. As early as 1984, Myers synthesized the relationship between a company's various financing options into a problem of sequence and direction (Myers and Majluf 1984): In most cases, it is a sequence and direction problem from internally generated cash flows (accounting for 62%) to debt financing (30%), and then to equity financing (6%); out-of-order and reverse problems are in the minority. This paper defines the forward pecking order as the path choice from internal financing to debt financing and then to equity financing. Therefore, the dependent variable for hypotheses H1 and H2 in this paper is a dummy variable, with a value of 1 for the forward pecking order and 0 for the reverse pecking order. The specific measurement method is as follows:

The financing data of listed companies involved in the pecking order can come from two aspects: annual reports and public financing transaction data. Although public financing transaction data does not include data on bilateral loans with banks, there is no autocorrelation problem with accounting statement data. This paper attempts to verify the relationship between pecking order choice and the breadth and depth of internationalization using both annual report data and transaction data as the pecking order choice, to increase the robustness of the test.

First, this paper tests the pecking order choice based on the statement approach as the dependent variable. In the following situation, the value of the dependent variable is 1, and 0 in other cases:

Earnings before interest and taxes (EBIT) are greater than or equal to the net increase in debt financing, and the net increase in debt financing is greater than or equal to the net increase in equity financing.

Here, internal financing or internally generated cash flow is EBIT, i.e., earnings before interest and taxes. Debt financing is the increase in debt during the accounting statement period. Following Myers' research, financing is mainly for capital expenditure, the net increase in debt financing is the increase in long-term debt, and equity financing is the net increase in equity financing during the accounting statement period (Myers and Majluf 1984).

Furthermore, this paper conducts a robustness test using the pecking order choice based on the market transaction approach as the dependent variable. In the following situation, the value of the dependent variable is 1, and 0 in other cases:

Earnings before interest and taxes are greater than or equal to the amount of public debt financing, and the amount of public debt financing is greater than or equal to the amount of equity financing.

Since there is no market transaction for internal financing, EBIT, i.e., earnings before interest and taxes, is still used. Public debt financing includes syndicated loans and public debt issuance financing. Equity debt financing refers to IPOs and equity issuance records in the stock market.

(II) Independent Variables: Company's Level of Internationalization
Based on past research, a company's degree of internationalization can be divided into the breadth of internationalization (Breadthi,t) and the depth of internationalization (Depthi,t) (Velez-Calle et al., 2018; Batsakis, Theoharakis, 2021). Representative indicators for measuring the breadth of a company's internationalization include the number of overseas subsidiaries (NOS) and the number of countries in which subsidiaries are located (NOC). Representative indicators for measuring the depth of a company's internationalization include the ratio of overseas sales to total sales (FSTS), the proportion of overseas subsidiaries to the total number of subsidiaries (OSTS), the proportion of overseas assets to total assets (FATA), and the proportion of overseas employees to the total number of employees (FETE). Based on data availability and the actual needs of this research, this paper selects NOS and NOC to measure the breadth of a company's internationalization and FSTS and OSTS to measure the depth of a company's internationalization. The raw data for the breadth and depth of internationalization come from publicly available information of listed companies.

(III) Control Variables
According to existing research, a company's cross-border financing decisions are influenced by its internal factors and the macroeconomic factors of the financing market it operates in. Therefore, this paper controls for company market capitalization, total liabilities, annual public financing amount (the sum of net public equity financing, net public bond financing, and net syndicated loan financing), price-to-book ratio, debt ratio, changes in short-term borrowings, changes in working capital, changes in shareholders' equity, and the number and proportion of international investors. The purpose is to control for the effects of company size, financing scale, stock price volatility, leverage level, short-term fund changes, and changes in shareholder composition. Except for market capitalization and annual public financing amount data, which come from Bloomberg and Reuters terminals, data for other control variables come from publicly available financial reports of listed companies.

IV. Data Sources
To obtain a sample of Chinese non-financial companies listed in Hong Kong, this paper separately exported data from the Bloomberg and Refinitiv terminals for non-financial companies headquartered in China and listed on the Hong Kong Stock Exchange, which had a listing status on the Hong Kong Stock Exchange between 2010 and 2020. The companies were cross-checked to avoid missing any sample companies. The total sample size for these 11 years is 5,215. Each sample initially includes 21 financial data items for the sample company for that year. All 21 financial data items were directly downloaded from the Bloomberg and Refinitiv terminals.

Additionally, public financing transaction records for these companies between 2010 and 2020, including syndicated loans, public debt issuances, IPOs, and other equity transactions, were searched and merged with the

company's financial data.

V. Descriptive Statistical Analysis

From the overall situation of the panel data, it is a short panel, containing 785 sample companies and 11 years of data. Among them, 32.6% of the sample companies were listed for less than 5 years between 2010 and 2020, while the remaining 67.4% of the sample companies had at least 5 years of data. Except for 304 companies whose major shareholders were all from mainland China (excluding Hong Kong, Macau, and Taiwan), 4,911 companies had foreign shareholders holding 0.01% or more of their shares between 2010 and 2020. Table 3 presents the descriptive statistics for the main variables.

Table 4 reports the correlation coefficients between pecking order choice, banking network choice, and the breadth of internationalization, depth of internationalization, and control variables. The absolute values of these coefficients are all less than 0.5, preliminarily ruling out severe multicollinearity issues.

Furthermore, for all explanatory variables and control variables, this paper uses the multivariate linear regression method to diagnose the variance inflation factor (VIF). The results in Table 5 show that the average VIF value between the explanatory variables and control variables is 1.12, with a maximum value of 1.35, indicating no obvious multicollinearity issues.

Table 3 Descriptive Statistics for Main Variables

Variable Name	Variable Code	Observations	Mean	Median	Std. Dev.	Minimum	Maximum
Panel A: Explained Variables							
Pecking order	PeckOrder	5215	0.30	0	0.46	0	1
Panel B: Explanatory Variables							
Breadth	NOC	5215	4.26	2	5.28	1	50
Depth	OSTS	5215	0.33	0.30	0.25	0	1
Panel C: Control Variables							
Market Capitalization	Marketcap*	5215	3458	384	19720	0	697693
Total Liabilities	Totalliabilities*	5215	7961	379.70	56961	-9475	184806
Annual Public Financing	PublicIssued*	5215	38	0	226.90	0	7491
Price-to-Book Ratio	Pricebookratio	5215	26.92	1.09	927.70	0	58681
Gearing Ratio	Gearingratio	5215	67.18	38.30	89.80	0	533
Change in Equity Capital	Equitych*	5215	42.66	0	344.40	-17591	4707
Change in Short-term Debts	Stdebtch*	5215	2.620	0	243.50	-7806	6975
Change in Working Assets	Networkingassetsch*	5215	-40.68	-3.74	687.60	-23894	11359
Number Institutional Investor	Investor	4911	80.46	16	130.30	0	1029
% of Institutional Investor	Invrate	4911	0.836	0.896	0.214	0	1

Table 4 Pecking Order Selection and Other Variables

	（1）	（2）	（3）	（4）	（5）	（6）	（7）
（1）PeckOrder	1						
（2）BankNetwork	0.00400	1					
（3）NOC	-0.028**	0.042***	1				
（4）OSTS	-0.064***	0.007**	0.171***	1			
（5）Totalliabilities	0.018	0.012	0.068***	-0.078***	1		
（6）Marketcap	0.021	0.011	0.200***	-0.052***	0.251***	1	
（7）PublicIssued	0.016	0.005	0.001	0.002	0.056***	0.054***	1
（8）Networkingassetsch	-0.005	-0.002	0.017	0.029**	-0.190***	0.125***	-0.029**
（9）Equitych	0.010	0.005	0.061***	-0.027*	0.057***	0.015	0.029**
（10）Stdebtch	0.015	-0.001	-0.003	0.011	0.036***	0.035**	0.004
（11）Gearingratio	0.011	-0.0140	0.052***	-0.110***	0.096***	-0.017	0.008
（12）Investor	0.056***	0.007	0.204***	-0.078***	0.138***	0.412***	0.179***
（13）Invrate	-0.015	0.050***	0.040***	-0.011	0.015	0.028*	0
（14）Stateowned	0.023*	0.022	0.086***	-0.154***	0.105***	0.073***	0.031**

	（9）	（10）	（11）	（12）	（13）	（14）	（15）
（8）Networkingassetsch	1						
（9）Equitych	0.233***	1					
（10）Stdebtch	-0.031**	-0.005	1				
（11）Gearingratio	-0.056***	0.010	-0.002	1			
（12）Investor	0.004	0.084***	0.006	-0.004	1		
（13）Invrate	-0.006	-0.003	-0.001	0.021	0.115***	1	
（14）Stateowned	-0.083***	0.077***	-0.018	0.098***	0.161***	-0.021	1

Table 5 VIF analysis results for the main variables

Variable	VIF	1/VIF
Marketcap	1.350	0.743
Investor	1.320	0.756
Networkingassets	1.170	0.856
Totalliabilities	1.160	0.863
NOC	1.130	0.883
OSTS	1.100	0.906
Stateowned	1.100	0.907
Equitych	1.100	0.911
PublicIssued	1.040	0.963
Gearingratio	1.040	0.964
Invrate	1.020	0.980
BankNetwork	1.010	0.995
Stdebtch	1	0.996
Mean VIF	1.120	0.893

5. Results

The empirical analysis is arranged as follows: First, examine whether internationalization affects cross-border financing decisions; second, employ variable substitution, variable addition measurement, and regression method alteration for robustness tests. Considering that the independent variables of internationalization breadth (NOS, NOC) are a set of left-truncated data with a minimum value of 0, and internationalization depth (FSTS, OSTS) are restricted variables between 0 and 1, with a large number of observations having NOS, NOC equal to 0 and FSTS, OSTS equal to 0 as shown in Table 4, using Tobit regression can obtain unbiased and consistent estimates for this data structure (陈强 2010). Therefore, this study continues to use Tobit regression for hypothesis testing. Prior to the analysis, Winsorization was performed to ensure the consistency and effectiveness of model estimation (Flannery and Rangan 2006). Additionally, the following procedures were conducted to ensure the

validity and consistency of model testing:
(1) Wooldridge test and cluster-robust standard errors were employed at the 1% level to address panel data serial correlation; (2) To mitigate multicollinearity, all independent variables and moderating variables were standardized, and random effects regression was performed with cluster-robust standard errors, followed by an over-identification test. The results rejected the random effects model, suggesting the use of a fixed effects model with cluster-robust standard errors; (3) To avoid potential heteroscedasticity, time effects, and cross-sectional correlation in panel data regression, cluster-robust standard errors (陈强 2010) were adopted, and Stata 17.0 software was used for fixed effects model analysis.

I. Mechanism of Internationalization Degree Influencing Pecking Order Choices
This section examines the mechanism through which internationalization degree affects the selection of pecking order, with the following empirical results. Tables 4 and 5 present the correlation analysis and multicollinearity analysis results for the relationships between internationalization breadth, internationalization depth, and pecking order. Based on the pecking order concept of internal financing prioritization, followed by external debt financing, and external equity financing as the last resort, a positive pecking order was defined as the company's internal financing (earnings before interest and taxes, EBIT) amount being no less than the net debt financing amount, and the net debt financing amount being no less than the net equity financing amount. EBIT was uniformly obtained from the company's annual report. Net debt financing and net equity financing amounts had two data sources: annual report and market transactions. For the annual report source, net debt financing and net equity financing amounts were the net increases in long-term liabilities and owners' equity, respectively, from the balance sheet. For market transaction data, net debt financing was the total amount of syndicated loans and bonds issued during the year, while net equity financing was the total amount of equity financing through the market during the year. This study used the pecking order selection based on the book value as the dependent variable for the main model and the market value-based pecking order as the dependent variable for robustness testing.

In the following Table 6, Model (1) is the baseline model, including all control variables (industry and market value). Models (2) and (3) are advanced models based on Model (1), with the addition of internationalization breadth (NOC) and internationalization depth (OSTS) as independent variables, respectively. Model (1) is the baseline model, including all control variables. The results of Model (3) show that internationalization breadth (NOC) has a significant positive effect on pecking order selection (beta = 0.0344, $p < 0.01$), indicating that the more overseas countries Chinese companies are involved in through internationalization, the more inclined they are to choose a positive pecking order, thus verifying hypothesis H1. Additionally, the results of Model (3) reveal that internationalization depth (OSTS) has a significant negative effect on pecking order selection (beta = -5.3655, $p < 0.05$), suggesting that the higher the proportion of overseas subsidiaries to the total number of subsidiaries, the more inclined they are to choose a negative pecking order, thus verifying hypothesis H2.

II. Robustness tests
Although the above empirical results indicate that the breadth and depth of internationalization have a significant promoting effect on pecking order choice, this correlation may be due to firm-specific factors, comparison bias, or inappropriate indicator selection. To address this, this study will conduct Robustness Tests by substituting the dependent variable, adding control measurement variables, and adopting alternative regression methods to examine endogeneity.
(1) Robustness Test - Substituting the Dependent Variable
This study substitutes the pecking order selection based on market transactions for the book value-based pecking order selection as the dependent variable to conduct a Robustness Test. In the following Table 7, Model (1) is the baseline model, including all control variables (industry and market value). Models (2) and (3) are advanced models based on Model (1), with the addition of internationalization breadth (NOC) and internationalization depth (OSTS) as independent variables, respectively. Model (1) is the baseline model, including all control variables. The results of Model (3) show that internationalization breadth (NOC) has a significant positive effect on pecking order selection (beta = 0.0344, $p < 0.01$), indicating that the more overseas countries Chinese companies are involved in through internationalization, the more inclined they are to choose a positive pecking order. Additionally, the results of Model (3) reveal that internationalization depth (OSTS) has a significant negative effect on pecking order selection (beta = -0.8210, $p < 0.1$), suggesting that the higher the proportion of overseas business revenue in Chinese companies' internationalization, the more inclined they are to choose a negative pecking order. It can be seen that after substituting the dependent variable measurement, the results of

this study still have strong robustness.

Table 6 Examining the relationship between internationalization degree and pecking order

	Pecking Order (based on the book value）		
	(1)	(2)	(3)
NOC		0.0342***	0.0344***
		(8.23)	(8.33)
OSTS			-5.3655**
			(-2.45)
Totalliabilities	0.0002***	0.0002***	0.0002***
	(2.87)	(2.87)	(2.87)
Marketcap	0.0009	0.0009	0.0009
	(1.20)	(1.20)	(1.20)
PublicIssued	0.0021	0.0021	0.0021
	(0.92)	(0.92)	(0.91)
Networkingassetsch	0.0103	0.0103	0.0103
	(0.19)	(0.19)	(0.19)
Equitych	-0.0001	-0.0001	-0.0001
	(-1.48)	(-1.48)	(-1.48)
Stdebts	0.0001	0.0001	0.0001
	(1.55)	(1.55)	(1.55)
Gearingratio	-0.0002***	-0.0002***	-0.0002***
	(-2.91)	(-2.91)	(-2.88)
Investor	-0.0109	-0.0109	-0.0008
	(-1.33)	(-1.33)	(-0.06)
Invrate	0.7391***	0.7392***	0.3416
	(10.13)	(10.12)	(1.23)
_cons	0.5535	0.4055	1.1198***
	(0.87)	(0.64)	(22.71)
N	4910	4910	4910

Table 7 Robustness Test (Substituting Dependent Variable): Examining the Relationship between Internationalization Level and Foreign Pecking order

	Pecking Order（based on market transaction）		
	(1)	(2)	(3)
NOC		0.0142***	0.0143***
		(5.27)	(5.28)
OSTS			-0.8210*
			(-1.81)
Totalliabilities	0.0002	0.0001	0.0002
	(1.15)	(1.15)	(1.15)
Marketcap	0.0001	0.0001	0.0001
	(0.31)	(0.30)	(0.30)
PublicIssued	-0.0001**	-0.0001**	-0.0001**
	(-2.48)	(-2.48)	(-2.48)
Networkingassetsch	0.0103	0.0103	0.0103
	(1.01)	(1.01)	(1.02)
Equitych	-0.0001	-0.0001	-0.0001
	(-0.95)	(-0.95)	(-0.95)
Stdebts	-0.0002	-0.0001	-0.0001
	(-0.90)	(-0.90)	(-0.90)
Gearingratio	0.0001	0.0001	0.0001
	(0.68)	(0.68)	(0.69)
Investor	0.0018	0.0018	0.0041
	(0.99)	(0.99)	(1.57)
Invrate	0.0568***	0.0568***	-0.0338
	(3.23)	(3.23)	(-0.60)
_cons	0.7791***	0.7175***	0.8804***
	(5.39)	(4.86)	(31.14)
N	4910	4910	4910

Table 8 Robustness Check (Adding Control Variable): Examining the Relationship between Internationalization Level and Foreign Financing Order

	Pecking Order（based on book value）		
	(1)	(2)	(3)
NOC		0.0343***	0.0344***
		(8.23)	(8.33)
OSTS			-5.3674**
			(-2.45)
Totalliabilities	0.0002***	0.0002***	0.0002***
	(2.88)	(2.88)	(2.88)
Marketcap	0.0001	0.0001	0.0001
	(1.19)	(1.19)	(1.19)
PublicIssued	0.0086	0.0086	0.0086
	(0.91)	(0.91)	(0.91)
Networkingassetsch	0.0103	0.0103	0.0103
	(0.20)	(0.20)	(0.20)
Equitych	-0.0001	-0.0001	-0.0001
	(-1.49)	(-1.49)	(-1.49)
Stdebts	0.0001	0.0001	0.0001
	(1.55)	(1.55)	(1.55)
Gearingratio	-0.0002***	-0.0002***	-0.0002***
	(-2.90)	(-2.90)	(-2.88)
Investor	-0.0109	-0.0109	-0.0008
	(-1.33)	(-1.33)	(-0.06)
Invrate	0.7391***	0.7391***	0.3413
	(10.13)	(10.12)	(1.23)
Stateowned	0.0953	0.0953	0.0954
	(0.80)	(0.80)	(0.80)
_cons	0.5410	0.3929	1.1076***
	(0.85)	(0.62)	(21.54)
N	4910	4910	4910

(2) Robustness Check - Adding Control Variables

Since state-owned enterprises typically receive more protection (Pessarossi and Weill 2013, Fotak 2016), adding a dummy variable for state ownership as a control variable can exclude the influence of firm attributes on the regression results, making the results more reliable. After adding this control variable, Table 8 shows the test results: The relationships between internationalization breadth NOC, internationalization depth OSTS, and the

book value-based foreign financing order remain significantly correlated at the 0.01% and 0.05% levels, respectively. Specifically, the results of Model (3) indicate that internationalization breadth (NOC) has a significant positive effect on foreign financing order selection (beta = 0.0344, $p < 0.01$), suggesting that the more overseas countries Chinese companies are involved in through internationalization, the more inclined they are to choose a positive financing order. Additionally, the results of Model (3) reveal that internationalization depth (OSTS) has a significant negative effect on financing order selection (beta = -5.3674, $p < 0.05$), implying that the higher the proportion of overseas business revenue in Chinese companies' internationalization, the more inclined they are to choose a negative financing order. Therefore, after adding the control variable, the relationships between internationalization and the book value-based financing order are consistent with the main model results, thus exhibiting strong robustness.

(2) Robustness Check - Changing Regression Method

Based on the Hausman test results, this study examined fixed effects and random effects models, finding that the fixed effects model is superior to the random effects model. Consequently, in the regression analysis, this study adopted the OLS fixed effects method for re-estimation.

After changing the regression method, Table 9 shows the test results: The relationships between internationalization breadth NOC, internationalization depth OSTS, and the book value-based foreign financing order remain significantly correlated at the 0.01% and 0.05% levels, respectively. Specifically, the results of Model (3) indicate that internationalization breadth (NOC) has a significant positive effect on foreign financing order selection (beta = 0.0028, $p < 0.05$), suggesting that the more overseas countries Chinese companies are involved in through internationalization, the more inclined they are to choose a positive financing order. Additionally, the results of Model (3) reveal that internationalization depth (OSTS) has a significant negative effect on financing order selection (beta = -0.921, $p < 0.01$), implying that the higher the proportion of overseas business revenue in Chinese companies' internationalization, the more inclined they are to choose a negative financing order. Therefore, after changing the regression method, the relationships between internationalization and the book value-based financing order are consistent with the main model results, thus exhibiting strong robustness.

7. Conclusion

This study selects a research sample of 785 non-financial Chinese companies listed on the Hong Kong Main Board from 2010 to 2020, and employs various empirical methods to test the research hypotheses. The results show that internationalization breadth and internationalization depth are significantly correlated with the reverse selection of cross-border financing order and the positive selection of bank networks. Specifically, compared to internal financing and debt financing, companies with higher levels of internationalization are more inclined towards external financing and equity financing, and are more inclined to hire international banks with higher market shares for public offerings. Additionally, after substituting the dependent variable and adding a state-owned enterprise attribute control variable in the robustness tests, the relationships between internationalization breadth, internationalization depth, and cross-border financing decisions remain significant. Furthermore, endogeneity is examined by changing the regression method, and the aforementioned relationships still hold robustly. Consequently, hypotheses H1 and H2 of this study are supported, indicating that internationalization breadth and internationalization depth significantly influence the selection of pecking order.

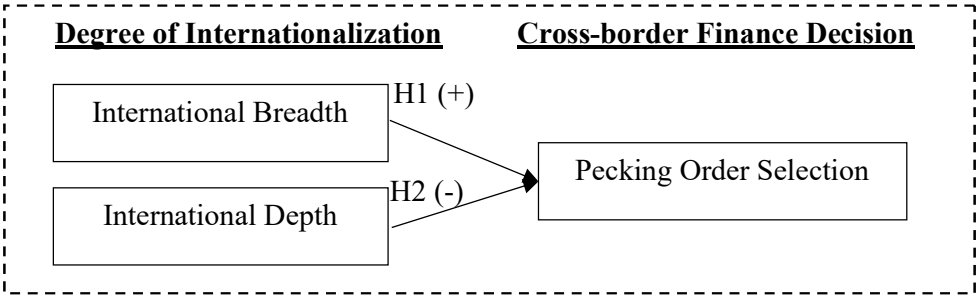

Table 9 Robustness Check (Changing Regression Method): Examining the Relationship between Internationalization Level and Foreign Financing Order

	Pecking Order（based on book value）		
	(1)	(2)	(3)
NOC		0.0038***	0.0028**
		(3.03)	(2.25)
OSTS			-0.0921***
			(-3.38)
Totalliabilities	0.0002***	0.0002***	0.0002***
	(4.06)	(4.08)	(3.90)
Marketcap	0.0001	0.0001*	0.0001*
	(1.53)	(1.91)	(1.77)
PublicIssued	-0.0086	-0.0086	-0.0086
	(-0.35)	(-0.46)	(-0.36)
Networkingassetsch	0.0102	0.0102	0.0102
	(1.03)	(1.00)	(1.07)
Equitych	-0.0001***	-0.0001***	-0.0001***
	(-5.47)	(-5.31)	(-5.42)
Stdebts	0.0001	0.0001	0.0001
	(1.40)	(1.38)	(1.44)
Gearingratio	-0.0005***	-0.0005***	-0.0006***
	(-7.42)	(-7.25)	(-7.60)
Investor	0.0003***	0.0004***	0.0003***
	(5.93)	(6.28)	(5.96)
Invrate	0.0276	0.0293	0.0290
	(0.91)	(0.97)	(0.96)
_cons	0.2870***	0.2987***	0.3293***
	(10.86)	(11.19)	(11.70)
N	4910	4910	4910

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