



Pecking Order Theory in International Contexts: Insights from Hong Kong Listed Chinese Enterprises

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Abstract: This research extends the Pecking Order Theory to an international business setting, providing novel insights into corporate finance within a global context. The study posits that firms prioritize internal financing through retained earnings before seeking external financing, such as debt or equity. By integrating attributes of internationalization, this research examines how the degree of internationalization of multinational firms influences their financing decisions, with a focus on the moderating role of international business factors. Analyzing data from 785 companies listed on the Hong Kong main board from 2010 to 2020, the study reveals that the breadth of internationalization supports the traditional pecking order, while the depth of internationalization encourages a reverse pecking order. Legal distance negatively moderates this relationship, while the structure of the financial system has a positive moderating effect. The findings suggest that multinational enterprises (MNEs) with greater overseas resource allocation exhibit enhanced flexibility in financing decisions, particularly in foreign markets with robust investor protection and efficient direct finance mechanisms.

Keywords: Internationalization, Breadth of internationalization, Depth of internationalization, Pecking order, Legal Distance, Financial System Structure.

INTRODUCTION

Comparing to local enterprise, the multinational enterprises (MNEs) faces with a dual dilemma: unfavorable conditions from their home country (Liability of Origin) (Ramachandran and Pant, 2010) and challenges as outsiders (Liability of Foreignness) (Zaheer, 1995). The MNEs have to decide where to invest (internationalization breadth) and how much to invest (internationalization depth), and how to finance the internationalization. It is lack of research to bridge international business and finance. The Resource and Capability Theory, and the Institutional Theory are commonly applied in studying the internationalization and finance. In a situation where the quality of the domestic institutional environment is significantly lower than that of overseas target markets, there are certain incentives for the cross-border development of the company's resource capabilities. The existing resources can be transferred to markets with higher quality institutional environments by enhancing the level of internationalization, thereby expanding the development space for the company's resource capabilities while also improving the protection of property rights (Boisot and Meyer, 2008).

Expanding business into overseas markets with quality institution, the MNE's risk profile becomes attractive to investor and bank as less legal distances in overseas financing markets. This ultimately enhances financial efficiency, cost-savings as well as financial resources and capabilities during the process of internationalization (Reeb et al., 2001 ; Sun et al., 2015). The selection of financing strategy is a critical component of MNE's broader strategy to secure a competitive advantage from a funding perspective. Over time, the focus has evolved from merely planning and managing capital structure (Gehr Jr., 1984 ; Sandberg et al., 1987 ; Simerly and Li, 2000) to achieve financing cost advantages (Randøy et al., 2001), long-term enterprise value (Bender and Ward, 2015 ; Jiang et al., 2017), pecking order of capital structure change (Khan and Adom, 2015), strategic shareholder structure (investor portfolio) (Stulz, 2010 ; Yousef et al., 2020).

Financing strategies encompass internal financing as well as external debt and equity financing, with the pecking order theory elucidating the relationships among these financing options.

Pecking order theory, initially proposed by Myers and Majluf (1984), posits that firms prioritize their sources of financing based on the principle of least effort or resistance, preferring internal financing first, followed by debt, and finally equity as a last resort. This theory has been extensively studied and debated in various contexts, including international finance (Myers, 1984). The following previous studies examined the pecking order theory in the context of internationalization, considering firm-external contextual contingencies, financial crises, cross-border finance, control rights, shareholder structure, and transaction costs (Miller and Puthenpurackal, 2005 ; Seifert and Gonenc, 2008 ; Vitali et al., 2011 ; Eren et al., 2022).

The pecking order theory must consider firm-external contextual contingencies, such as international finance environments (Burlacu, 2000 ; Seifert and Gonenc, 2010). Allayannis et al. (2003) argued that firms with foreign equity listings have likely exhausted their debt options and moved down the pecking order to equity markets (BESSLER et al., 2011). This suggested that the pecking order extends to the preferred currency denomination of financing, with firms opting for local currency debt first, followed by foreign currency debt, and finally local and foreign equity markets (Allayannis et al., 2003). Eren et al. (2022) further developed an international corporate finance model, showing that firms facing adverse selection choose the foreign currency share of their debt based on the co-movement between cash flows and exchange rates (Eren et al., 2022). Daude and Frantzscher (2008) highlighted that information frictions and the quality of host country institutions significantly affect the pecking order, with FDI being more sensitive to information frictions than portfolio investments (Daude and Frantzscher, 2008). Schulze et al. (2015) explored the pecking order theory of strategic resource deployment to imply the threat gives capable firms incentive to use internally generated strategic resources to pursue growth opportunities before turning to external sources especially in cross-border investment (Schulze et al., 2015).

Pecking order decisions are also influenced by contextual ambiguity, including financial crises. Agliardi et al. (2016) analyzed how ambiguity affects the values of a firm's equity and debt, showing that cash holdings are retained longer if investors' ambiguity aversion bias is large. Conversely, cash holdings become less attractive when the combined impact of ambiguity and ambiguity aversion is low, leading decision-makers to prefer

dividends. This indicated that during periods of high uncertainty, firms may deviate from the traditional pecking order due to increased ambiguity aversion (Agliardi et al., 2016).

Empirical tests support the pecking order theory in cross-border finance contexts. Huang (2011) examined Taiwan's relocated firms in China, finding that the pecking order hypothesis is mostly supported by evidence from moderately leveraged firms. The study confirms the role of asymmetric information, with on-site listings being a sustainable approach for firms to expand in emerging markets. This empirical evidence underscores the relevance of the pecking order theory in international finance, particularly in emerging markets (Huang, 2011).

The pecking order theory also addresses upstream issues such as control rights and shareholder structure. Florian et al. (2012) found that private equity, often considered a last resort under the pecking order hypothesis, is influenced by family effects in family firms. Family firm owners balance financial and non-financial resources of private equity with the need to cede control rights, with non-financial resources being valued more highly when resolving family issues (Tappeiner et al., 2012). Jiang et al. (2017) developed and tested an ownership structure pecking order, showing that firms with a single controlling shareholder have the lowest agency costs, while those with a single large non-controlling shareholder have the highest agency costs. These findings suggested that control rights and shareholder structure significantly impact the pecking order (Gong et al., 2018).

Finally, the pecking order theory extends to downstream issues such as transaction costs and agency costs. Bagley et al. (1996) proposed a class of diffusion models that mimic the firm's pecking order behavior, optimizing an intertemporal leverage strategy in the presence of refinancing transaction costs. These models provided a quantitative framework for implementing the pecking order theory as a decision tool, highlighting the importance of dynamic factors in designing and interpreting empirical tests of static tradeoff theories (Bagley and Yaari, 1996). Kashefi Pour et al. (2017) investigated the impact of underinvestment and asymmetric information cost on firm's public bond issuance before equity IPO. The investigation supports the pecking order theory in capital markets finance even during the financial crisis (Kashefi Pour, 2017).

THEORETICAL BACKGROUND AND HYPOTHESES

Pecking Order Theory

The pecking order can be defined as a company's sequential financing choices from the initial stage to the eventual realization of capital accumulation. This sequence may involve both forward and reverse financing priorities as well as adjustments to the capital structure (Rauh, 2006). The selection of a pecking order has profound implications for a company's capital structure, growth trajectory, and financial performance. Consequently, studying and optimizing the pecking order can enable companies to better achieve their financial objectives through dynamic adjustments of capital structure.

Theories related to the pecking order suggest that financing needs expand progressively in the direction of increasing financing costs (Bagley and Yaari, 1996), and this process is influenced by factors such as financing constraints, agency problems, and capital market pricing (Leary and Roberts, 2010). When addressing financing needs, companies typically prioritize internal funds, followed by external debt financing, and finally equity

financing (Myers and Majluf, 1984). This hierarchy aligns with the 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 represents an increase in information asymmetry, with the associated information costs borne by the company rising accordingly (Khan and Adom, 2015). For instance, the debt financing spread for companies is approximately 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 et al., 2003). Although the pecking order has received substantial empirical support (Allayannis et al., 2003 ; Nguyen and Kim, 2020), some exceptions have been identified (Khan and Adom, 2015), including unexplained variations related to company size and data timeliness (Baum et al., 2011), as well as the debt performance of companies in low-wage countries with trade openness (Rahaman, 2016). 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 integrates the classic pecking order theory with additional internal and external factors (Fama and French, 2005), particularly financing environment factors (Khan and Adom, 2015).

From a cross-region perspective, the pecking order issue can be further elucidated by considering information asymmetry and institutional quality (Daude and Fratzscher, 2008). Information asymmetry encompasses multiple dimensions, including interactions between fund borrowers and lenders, within banking syndicates, bond issuance, and among intermediaries such as rating agencies and analysts (Darmouni, 2020 ; Yang, 2020 ; Brockman et al., 2024). Institutional quality 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 a pivotal theory for studying dynamic capital structure, the boundaries of debt and equity financing within the pecking order depend on the company's debt capacity (Leary and Roberts, 2010) and the maintenance of control (Tappeiner et al., 2012). Therefore, companies navigate between debt and equity financing throughout their lifecycle to maintain a dynamic balance in capital structure (La Rocca et al., 2011). Given that the pecking order can be forward or reverse, and choices can oscillate, financing decisions should be viewed as a series of pecking order choices aimed at gaining a competitive advantage, rather than merely a short-term prioritization issue.

Degree of Internationalization and the Choice of Pecking Order

The ability to access financial resources is a critical enabler for the growth of internationalized Chinese enterprises. The internationalization degree is associated with capital structure and financial results (Allee et al., 2001). This degree of internationalization comprises two dimensions: (1) international breadth indicating scope of countries in which the company operates, and (2) international depth representing the proportion of resources or rewards contributed from overseas relative to the total (Sullivan, 1994).

Compared to companies operating solely domestically, multinational enterprises (MNEs) have more options for managing their capital structure as they progress in their internationalization journey (Vahlne and Johanson, 2017). Joliet and Muller (2013) argued that due to their cross-region operations, MNEs face greater business risks, which correspond to higher financial risks. This leads these companies to adopt more conservative capital structure decisions, thereby maintaining a buffer between their operations and potential bankruptcy (Joliet and Muller, 2013 ; Brealey et al., 2014). However, MNEs have more opportunities for business diversification, which can reduce both business and financial risks (Gomes and Ramaswamy, 1999). This diversification increases their capacity for debt financing and reduces financing costs (Mansi and Reeb, 2002 ; Singh et al., 2003 ; Shapiro and Hanouna, 2019). Lindner et al. (2018) found, through an analysis of 31 empirical studies and 223,658 samples, that MNEs from developing countries are more capable of obtaining equity financing and maintaining reasonable debt ratios. From a risk preference perspective, the capital structure of MNEs 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-region 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), to domestic and foreign debt financing, finally to domestic and foreign equity financing. This sequence seeks external resources in a manner that minimizes threats to ownership (Schulze 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 chosen in the order of domestic short-term debt, foreign short-term debt, domestic long-term debt, and foreign long-term debt (Allayannis 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 (Allayannis et al., 2003 ; De Jong et al., 2010). 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 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 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 study incorporates reverse pecking order into the study of financing decisions, highlighting the uniqueness of this research. First, this study'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 economic geographic and knowledge-based theory (Dau, 2013). 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 et al., 2013). Fourth, regarding the cross-region financing issues inevitably faced by Chinese companies' internationalization, i.e., Chinese multinational enterprises primarily operating and generating revenue in mainland China, the research on their cross-region pecking order mainly focuses on the cross-region 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 et al., 2003). Therefore, this study 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-region pecking order choices in the subsequent empirical research.

Based on the above analysis, this study proposes the following hypotheses:

- **Hypothesis 1:** The breadth of internationalization positively influences the choice of pecking order.
- **Hypothesis 2:** The depth of internationalization negatively influences the choice of pecking order.

Environmental Factors in Cross-region Finance

Since Modigliani and Miller (1958) first introduced the theory of corporate capital structure in 1958 (Frankfurter and Philippatos, 1992), subsequent research has predominantly focused

on the hierarchy of internal resources, such as financial indicators, and the pecking order of equity and debt financing. Before a company engages in cross-region operations, it typically establishes a certain scale, economic attributes, and capital structure characteristics within its domestic market. The pecking order it adopts in international financial markets to form a new capital structure is influenced by information asymmetry between the company and the financing market (Daude and Fratzscher, 2008), as well as differences in international financial system structures (Baum et al., 2011).

Enterprise's internationalization encounters cross-border differences mostly in terms of consist of legal distance and cultural distance (Berry et al., 2010 ; Beugelsdijk et al., 2018 ; Zámorský and Yan, 2022). Cultural distance refers to the differences in language, norms, and business practices between countries, which can complicate communication and increases the perceived risk of cross-region transactions. The measure of cultural distance is based on scores that reflect country averages of individuals' attitudes towards inequality, self-orientation, competition, uncertainty, traditions, and indulgence (Harms and Shuvalova, 2020). Legal distance encompasses the variations in legal, regulatory, and governance frameworks across countries, which can affect the ease and cost of doing business internationally. The measure of legal distance is based on the methodology of Djankov, including Investor Right Index and Creditor Right Index (Özer and Çam, 2021). These factors contribute the overall information asymmetry that companies face when operating in foreign markets.

The differences in cross-region or cross-country financial system structures primarily stem from the heterogeneity of two predominant financial systems: (1) market-based systems, which are dominated by securities market financing, and (2) bank-based systems, which are dominated by bank loans. These differences arise from factors such as the historical development of financial institutions and markets, regulatory environments, and the relative importance of banks versus capital markets in providing financing (Baum et al., 2011). For instance, in market-based systems, companies may have greater access to equity financing and a more diverse set of financial instruments, whereas in bank-based systems, companies may rely more heavily on relationship banking and debt financing.

Understanding these environmental factors is crucial for multinational enterprises (MNEs) as they navigate the complexities of cross-region finance. By recognizing the impact of cultural and institutional distances, as well as the structural differences in financial systems, MNEs can make more informed decisions about their capital structure and financing strategies in international markets.

Legal Distance between Two Regions

The institutional quality theory posits that enterprises from developing countries engage in cross-region operations partly to circumvent the constraints imposed by their domestic institutional environments on the resources and capabilities necessary for their operations. By leveraging their existing capabilities, these enterprises expand their business scope and market presence overseas to ensure asset security (Boisot and Meyer, 2008) and to raise substantial operational and development funds in international financial markets (Stoian and Mohr, 2016). This has given rise to the “escape theory” hypothesis of enterprise internationalization in academic circles. Some scholars have observed that enterprises from

developing economies with operations and assets in developed economies must internalize local legal regulations and practices to comply with local requirements. This includes meeting the public credit rating standards of local financial markets, thereby establishing a long-term legal bond with local institutions (Licht et al., 2018). This legal bonding subsequently facilitates overseas financing for these enterprises. This phenomenon is often referred to as the “promotion theory” hypothesis of internationalization in the context of cross-region financing. Clearly, legal distance plays a crucial role in the overseas financing decisions of internationalized enterprises. The legal distance between domestic and foreign financial markets is a factor that cannot be overlooked in cross-region finance decision-making.

In the study of legal distance, it has been found that finance-related legal systems, including the protection of investor rights, public-private joint credit registration systems, and the sharing of credit information, are instrumental in safeguarding investor interests (Djankov et al., 2007). Furthermore, the “legal bonding” hypothesis and the extended “reputational bonding” hypothesis for companies from developing countries financing in developed markets, such as the United States, are both derived from the signaling theory (Siegel, 2005). This means that the differences in legal mechanisms related to investor protection compel companies from regions with weaker investor protection to enhance their corporate governance and management quality when seeking financing from regions with stronger investor protection, as they need to meet higher regulatory standards (Cezar and Escobar, 2015 ; Guo and Tu, 2021).

In fact, compared to institutional quality evaluation systems that involve political factors, the Creditor Right Index and the difference in ratings by major rating agencies for different regions provide more direct and objective measures related to corporate financing, especially debt financing (Djankov et al., 2007 ; Chui et al., 2016). The Credit Right Index is published annually through the World Bank's Doing Business Database, while the differences in ratings by rating agencies are obtained by comparing the sovereign ratings (or long-term foreign debt ratings if sovereign ratings are not available) from Standard & Poor's, Moody's, and Fitch for different regions. Based on data availability, this study uses the differences in ratings by rating agencies as the data indicator for the legal distance between mainland China and Hong Kong.

Based on the above analysis, this study proposes the following hypotheses:

- **Hypothesis 3:** The legal distance between the two regions has a significant negative moderating effect on the relationship between the degree of internationalization and the choice of overseas bank networks.

Cultural Distance between Two Regions

Cross-region financing decisions are often complicated by information frictions and costs caused by cultural distance. These challenges can be categorized into several key aspects (Shenkar, 2001): (1) Information friction in cross-region financing caused by national cultural differences of multinational enterprises. (2) The process involved in resolving information friction arising from cross-cultural communication in cross-region financing and its resolution. (3) Costs incurred due to differing information transmission patterns and communication methods across cultural backgrounds. (4) Efforts and costs associated with

mitigating financing information asymmetry through cultural factors in cross-region banking syndicate cooperation. (5) Organizational and decision-making mechanisms required to establish effective information exchange and cultural integration with international investors, overseas financing intermediaries, regulatory authorities, and bank networks in cross-region financing cooperation, aimed at reducing information asymmetry and cultural friction.

The impact of cultural distance on internationalized enterprises varies significantly across different industries. Sectors such as cultural industries, banking services, and tourism services are more affected by cultural distance compared to industries like transportation and insurance (Harms and Shuvalova, 2020).

Moreover, the impact of cultural distance on cross-region financing exhibits significant heterogeneity across different financing methods and markets. The influence of cultural distance on overseas loans is notably greater than its impact on bond issuance and stock issuance (Siegel et al., 2011). Empirical findings indicate that when there is cultural distance between lenders and borrowers, such as between the United States and Japan, loan interest rates can be as much as 23 percentage points higher than average (Giannetti and Yafeh, 2012). Additionally, to diversify borrowers' credit risk and mitigate the concentration of political risk in their regions, banks often organize contractual teams (syndicates or syndicated banks) through their social networks to provide financing services to a single enterprise under a single contract (Dorobantu and Müllner, 2019). These syndicates jointly offer syndicated loans, underwrite bonds and stocks, and other financing services. The cultural distance within these banking syndicate organizations (syndicated organizations) can also lead to additional financing costs (Giannetti and Laeven, 2012). Empirical research has found that cultural distance is a significant negative correlating factor in cross-region financing for internationalized enterprises (Chui et al., 2016).

Based on the above analysis, this study proposes the following hypothesis:

- **Hypothesis 4:** The cultural distance between the two regions has a significant negative moderating effect on the relationship between internationalization degree and the choice of overseas bank networks.

Finance System Structure Difference between Two Regions

Internationalized enterprises inevitably face the challenge of segmentation between domestic and foreign financing markets when seeking capital in overseas markets. The market segmentation theory suggests that the more pronounced the market segmentation, the higher the information costs associated with crossing market boundaries. For enterprises from emerging markets, the cost savings in capital when financing in developed markets become more apparent (Rahaman, 2016). Issuers can reduce information asymmetry through cross-region issuance track records, and by meeting international investors' diversification needs, they can achieve lower financing costs internationally compared to domestic markets (Massa and Žaldokas, 2014). Realizing cost savings through financing in heterogeneous financial systems has been a major motivation for Chinese enterprises to finance in offshore financial centers like Hong Kong. Even financial crises only shift financing activities from crisis-affected markets to others, changing the currency but not the amount or term (Cortina et al., 2021). In offshore financial centers, not only are the benchmark interest rates for

international currencies like USD, EUR, JPY, and HKD long-term lower than in developing countries, but also due to higher investor protection, the debt financing spreads for enterprises overseas are lower than domestic ones, provided the following conditions for effectively reducing agency costs are met: (1) Banks from developed economies provide financing in their home country/region's currency; (2) Financing is completed in mature financial markets; (3) The enterprise's home country has not yet opened its capital account; (4) Banks in the enterprise's home country generally have lower capital ratios (Gong et al., 2018). This reveals the reason for cost savings when Chinese enterprises finance in Hong Kong. Having efficient and low-cost financing markets not only enhances financing capacity but also benefits long-term company value (Randøy et al., 2001). Evidently, differences in financial system structures are also a significant factor influencing cross-region financing.

Moreover, the alignment of enterprise assets with the heterogeneity of financial systems is crucial for financing availability and cost savings (Robbinson, 1952). In market-oriented financial systems, enterprises primarily source financing from the securities market (Allen and Gale, 2000). In bank-oriented financial systems, financing mainly comes from bank loans (Zingales and Rajan, 2003). Research on financial system structures provides another perspective on examining enterprises' financing pecking order and capital structure (Levine, 2002). Enterprises operating primarily with tangible assets tend to use bank-oriented financing markets as they can obtain bank loans by collateralizing assets (Zingales and Rajan, 2003 ; Allen et al., 2018). Conversely, light-asset enterprises operating in knowledge economies with a high proportion of intangible assets find it difficult to obtain loans from traditional banks and tend to seek financing from securities markets (Allen et al., 2018). However, market-oriented financial systems require a higher level of investor protection and rule of law (Ergungor, 2004 ; Djankov et al., 2007). The banking systems and securities markets in industrialized countries have both seen qualitative improvements and diversification in the 20th century (Siegel, 2003). This means enterprises can prioritize different financial systems (bank-oriented or market-oriented) based on their characteristics (heavy or light assets) (Allen et al., 2018). Comparatively, bank-oriented financial systems are more likely to provide external financing for enterprises with larger financing gaps (Baum et al., 2011); market-oriented financial systems, represented by the United States, are more likely to provide direct financing for large equipment installations and R&D (Baum et al., 2011).

From the perspective of pecking order decisions, the heterogeneity of financial systems plays an important role in enterprises' cross-region financing decisions (Daude and Fratzscher, 2008). If overseas capital market financing is categorized into four types: foreign direct investment (FDI), cross-region loans, overseas public bond issuance, and overseas stock listing, they exhibit different sensitivities to the information costs of capital market institutionalization (Papaioannou, 2005 ; Faria and Mauro, 2009). Public bond issuance and stock listing have higher requirements for institutionalized information disclosure, and the adjustment of agency conflicts and composition of agency costs are more transparent and institutionalized (Albuquerque, 2003). FDI and cross-region loans rely less on market institutions to mitigate information asymmetry (Wei, 2000), instead reducing information asymmetry by shortening the distance to enterprises (establishing local offices), with their correlation coefficient to distance being 1.5 to 2 times that of public bond issuance and listing (Daude and Fratzscher, 2008). FDI and cross-region loans thus incur significant sunk costs (Hausmann and Fernandez-Arias, 2000 ; Buch, 2002). Additionally, Kayo and Kimura's

research on capital structure using a time-company-industry-country vertical structure found that country-level financial system structure is an important factor in financing pecking order choices (Kayo and Kimura, 2011).

The above literature provides a method for analyzing financial system structures: using the ratio of banking system and securities market stock and trading volume to GDP to distinguish whether the financing market's heterogeneous attributes are bank-oriented or market-oriented. However, there is currently no literature deeply exploring the relationship between financial system heterogeneity and financing pecking order decisions. Therefore, as shown in Figure 4.3, this study proposes the following hypothesis:

- **Hypothesis 5:** The difference in financial system structures between the two regions has a significant positive moderating effect on the relationship between the degree of internationalization and the choice of overseas bank networks.

DATA AND METHODOLOGY

This section outlines the process of filtering qualified samples according to the econometric statistical principles, constructing models based on the research hypotheses, and explaining the measurement of variables. It also provides descriptive statistics for the main variables. Initially, qualified samples are filtered according to the mathematical statistical principles. Subsequently, based on the research hypotheses, test models are constructed to measure, test, and explain the relationships between variables. t-tests are performed on the breadth and depth of internationalization to assess the impact of the degree of internationalization on cross-region pecking order and cross-region banking networks.

Sample Selection

This study selects all listed Chinese non-financial companies that maintained their listing status between 2010 and 2020. Data for these samples have been collected sample data from three primary aspects:

Static Data of Sample Companies

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

Transaction Data of Sample Companies

The transaction data of public financing for sample companies encompass the 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 (2016), the transaction data of the sample include transaction amount, time, lead bank, and lead bank market share ranking (Daude and Fratzscher, 2008 ; Kadapakkam et al., 2016).

Macro Data on Distances

(1) Cultural Distance Data between Mainland China and Hong Kong:

After 200 years of British colonial rule, Hong Kong has returned to its motherland. Culturally, it represents a blend of East and West, with a fusion of Chinese and Western elements compared to mainland China. There are certain differences in indices based on social and cultural psychology across countries and regions (Siegel et al., 2011). This study adopts the method used by Harms et al. (2020), utilizing The Inglehart-Welzel World Cultural Map to calculate cultural distance (Harms and Shuvalova, 2020) to measure the cultural distance between mainland China and Hong Kong.

(2) Data on Investor Protection Differences between Mainland China and Hong Kong:

This study uses the Investor Protection Index by Djankov et al. (2007) and İlhanÇam (2021), employing the sum of differences in sovereign ratings for mainland China and Hong Kong from Standard & Poor's, Moody's, and Fitch as an indicator of the financial system structure differences between the mainland China and Hong Kong (Djankov et al., 2007 ; Özer and Çam, 2021).

(3) Financial System Structure Differences between Mainland China and Hong Kong:

There are notable differences between mainland China and Hong Kong in terms of the proportion of debt financing to equity financing. This study adopts Baum et al. (2011) and Allen et al. (2018)'s definition of financing market structure, which is the ratio of accumulated debt and equity financing amounts to GDP over the year (Baum et al., 2011 ; Allen et al., 2018).

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

Table 1: Distribution of Listing Years of observations in the dataset

Listing Year	Number of Observed Listed Companies	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	1,646	31.56
Heavy Manufacturing	1,500	28.76
Public Utilities	398	7.63
Total:	5,215	100

Model Construction

Currently, the most common research on financing decisions in academia uses the Ordinary Least Squares (OLS) model. In the main model, this study 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 study, the following two models to be tested are set:

$$\text{PeckOrder}_{i,t} = \beta_0 + \beta_1 \text{InternationalBreadth}_{i,t} + \beta_2 \text{InternationalDepth}_{i,t} + \beta_3 \text{LegalDistance}_t + \beta_4 \text{CulturalDistance}_t + \beta_5 \text{FinanceSystemStructure}_t + \beta_6 \text{Control}_{i,t} + \varepsilon_{i,t}$$

In the above equation, $\text{PeckOrder}_{i,t}$ is the explained variable of pecking order choice, representing the cross-region pecking order of i -th Chinese non-financial company in year t . This study 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.

$\text{InternationalBreadth}_{i,t}$ and $\text{InternationalDepth}_{i,t}$ represent the breadth and depth of internationalization, respectively. Correspondingly, β_1 and β_2 measure the impact of the breadth and depth of internationalization on the choice of pecking order and banking network selection, respectively.

The three moderating variables are: LegalDistance_t (legal distance between the two regions in year t), $\text{CulturalDistance}_t$ (cultural distance between the two regions in year t),

FinanceSystemStructuret (difference in financial system structures between the two regions in year t). Correspondingly, β_3 , β_4 , and β_5 in equation measure the effects of legal distance, cultural distance, and differences in financial system structures on the relationship between internationalization degree and the choice of financing pecking order and bank networks, respectively.

The control variable $\text{Control}_{i,t}$ represents all control variables of i -th Chinese non-financial company in year t . $\varepsilon_{i,t}$ is the random disturbance term.

Variable Description

Dependent Variable: Cross-region 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 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 study 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 study is a dummy variable, with a value of 1 for the forward pecking order, 0 for the reverse pecking order and partially reverse pecking order (e.g. from equity financing to debt financing, or debt financing to internal financing). 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 study 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 study 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 study 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.

2. Independent Variables: Internationalization Degree:

Based on past research, a company's degree of internationalization can be divided into the breadth of internationalization ($Breadth_{i,t}$) and the depth of internationalization ($Depth_{i,t}$) (Sullivan, 1994 ; Velez-Calle et al., 2018 ; Batsakis and 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 study 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.

3. Moderating Variables:

(1) Legal Distance:

This study adopts Chui et al (2016)'s method of measuring the legal distance between two regions using the difference in investor protection indices. Specifically, the measurement involves summing the rating differences for mainland China and Hong Kong as provided by three international rating agencies: Standard & Poor's, Moody's, and Fitch (Chui et al., 2016).

(2) Cultural Distance:

To measure cultural distance, this study utilizes the methodology proposed by Harms and Shuvalova (2020), which employs The Inglehart-Welzel World Cultural Map generated through the World Values Survey (WVS) method. This approach calculates the cultural indices differences between mainland China and Hong Kong's cultural indices (Harms and Shuvalova, 2020). The cultural distance is assessed annually to account for any temporal variations in cultural alignment between the two regions.

(3) Finance System Structure Difference:

This study refers to Allen and Gale (2000)'s classification of financial system structures into market-oriented and bank-oriented systems. The financial system structure difference is calculated by determining the ratio of total market value to total loan amount for both mainland China and Hong Kong (Allen and Gale, 2000). The difference between these two ratios serves as the value for the financial system structure difference, which is used to test the samples for each year. This measure helps to understand how the structural differences in financial systems influence cross-region financing decisions.

4. Control Variables:

According to existing research, a company's cross-region financing decisions are influenced by its internal factors and the macroeconomic factors of the financing market in which it operates. Therefore, this study controls for several variables to isolate the effects of these factors. The control variables include:

1. company market capitalization (reflects the overall size of the company),
2. total liabilities (indicates the company's debt burden);
3. annual public financing amount (the sum of net public equity financing, net public bond financing, and net syndicated loan financing);
4. price-to-book ratio (measures the market valuation relative to the book value);
5. gearing ratio (indicates the proportion of debt in the company's capital structure);
6. changes in short-term borrowings (captures the fluctuations in short-term debt);
7. changes in working capital (reflects changes in the company's operational liquidity);
8. changes in shareholders' equity (indicates changes in the ownership structure); and
9. the number and proportion of international investors (reflects the extent of foreign investment in the company).

The purpose of these control variables is to account 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 are sourced from Bloomberg and Reuters terminals, data for other control variables are obtained from publicly available financial reports of listed companies.

Data Sources

Static and Transaction Data of Sample Companies

To compile a sample of Chinese non-financial enterprises listed in Hong Kong, this study utilizes data from Bloomberg and Refinitiv terminals. The sample includes companies headquartered in China and listed on the Hong Kong Stock Exchange, maintaining their listing status from 2010 to 2020. The total sample size over these 11 years is 5,215 observations. Each sample first includes 21 financial data items for the respective year, all of which have been directly downloaded from the Bloomberg and Refinitiv terminals.

Additionally, the Bloomberg and Refinitiv terminals have been used to search for records of public financing transactions for these companies from 2010 to 2020, including syndicated loans, public bond issuances, and IPOs. These public financing transaction data are then merged with the companies' financial data to create a comprehensive dataset.

Legal Distance Data between Mainland China and Hong Kong

The Refinitiv terminal has been employed to query the annual ratings of mainland China and Hong Kong from 2010 to 2020 by three international rating agencies: Standard & Poor's, Moody's, and Fitch. The sum of the differences in ratings for each year is used as the indicator of legal distance between the two regions for that year.

Cultural Distance Data between Mainland China and Hong Kong

This study utilizes data from The Inglehart-Welzel World Cultural Map to measure cultural distance between mainland China and Hong Kong. The data can be accessed at The Inglehart-Welzel World Cultural Map: <https://www.worldvaluessurvey.org/WVSContents.jsp>

Financial System Structure Difference Data between Mainland China and Hong Kong

The financial system structure difference data for mainland China and Hong Kong are downloaded from Refinitiv and related government websites. The total market value of A-shares in mainland China and the Hong Kong Stock Exchange is obtained from the Refinitiv terminal. The total loan amounts for mainland China and Hong Kong are sourced from the People's Bank of China (pbc.gov.cn) and the Hong Kong Monetary Authority (hkma.gov.hk), respectively.

Finally, the sample company data are linked with the financial system structure difference parameters, legal distance index, and cultural distance by year, ensuring that each sample data set includes these three macro indicators for the respective year.

Descriptive Statistical Analysis

The panel data comprises a short panel, containing 785 sample companies and 11 years of data. Among these, 32.6% of the sample companies were listed for less than 5 years between 2010 and 2020, while the remaining 67.4% 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 and depth of internationalization, along with 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 study employs 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 1.13, with a maximum value of 1.40, 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	0.3	0	0.46	0	1
Panel B: Explanatory Variables							
Breadth	NOC	5215	4.26	2	5.28	1	50
Depth	OSTS	5215	0.33	0.3	0.25	0	1
Panel C: Moderating Variables							
Legal Distance	LegalDistance	5215	8.96	9	0.68	8	10
Cultural Distance	CulturalDistance	5215	2.65	2.46	0.23	2.46	2.91
Finance System Structure Difference	FinanceSystemStructure	5215	6.56	6.39	2.5	1.96	12.84
Panel D: Control Variables							
Market Capitalization	MarketCap*	5215	3458	384	19720	0	697693
Total Liabilities	TotalLiabilities*	5215	7961	379.7	56961	-9475	184806
Annual Public Financing	PublicIssued*	5215	38	0	226.9	0	7491
Price-to-Book Ratio	PriceBookRatio	5215	26.92	1.09	927.7	0	58681
Gearing Ratio	GearingRatio	5215	67.18	38.3	89.8	0	533
Change in Equity Capital	Equitych*	5215	42.66	0	344.4	-17591	4707
Change in Short-term Debts	Stdebtch*	5215	2.62	0	243.5	-7806	6975
Change in Working Assets	NetworkingAsset sch*	5215	-40.68	-3.74	687.6	-23894	11359
Number Institutional Investor	Investor	4911	80.46	16	130.3	0	1029
% of Institutional Investor	Intrate	4911	0.836	0.896	0.214	0	1

Table 4: Pecking Order Selection and Other Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) PeckOrder	1								

(2) NOC	-0.028**	1							
(3) OSTs	-0.064***	0.166***	1						
(4) TotalLiabilities	0.018	0.103***	-0.078***	1					
(5) MarketCap	0.021	0.119***	-0.052***	0.251***	1				
(6) PublicIssued	0.016	0.023*	0.002	0.056***	0.054***	1			
(7) NetworkingAssetsch	-0.005	-0.036***	0.029**	-0.190***	0.125***	-0.029**	1		
(8) Equitych	0.01	0.052***	-0.027*	0.057***	0.015	0.029**	0.233***	1	
(9) Stdebtch	0.015	0.003	0.011	0.036***	0.035**	0.004	-0.031**	-0.005	1
(10) GearingRatio	0.011	0.097***	-0.110***	0.096***	-0.017	0.008	-0.056***	0.01	-0.002
(11) Investor	0.056***	0.301***	-0.078***	0.138***	0.412***	0.179***	0.004	0.084***	0.006
(12) InvRate	-0.015	0.062***	-0.011	0.015	0.028*	0	-0.006	-0.003	-0.001
(13) FinanceSystemStructure	0.030**	0.026*	-0.022	-0.026*	-0.001	-0.011	-0.024*	-0.033**	0.021
(14) Culdiswvs	0.027**	0.060***	-0.061***	-0.074***	0	-0.027**	-0.034**	-0.001	0.031**
(15) LegalDistance	-0.022	-0.013	0.009	-0.095***	-0.021	-0.017	0.02	-0.016	0.001
(16) StateOwned	0.023*	0.078***	-0.154***	0.105***	0.073***	0.031**	-0.083***	0.077***	-0.018

(Continued)

	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(9) Stdebtch	1							
(10) GearingRatio	-0.00200	1						
(11) Investor	0.00600	-0.00400	1					
(12) InvRate	-0.00100	0.0210	0.115***	1				
(13) FinanceSystemStructure	0.0210	-0.027*	0.031**	0.040***	1			
(14) Culdiswvs	0.031**	-0.0150	0.055***	0.098***	0.216***	1		
(15) LegalDistance	0.00100	0.0130	-0.0220	0.00600	0.050***	-0.288***	1	
(16) StateOwned	-0.0180	0.098***	0.161***	-0.0210	0	0.0110	0.0100	1

Table 5: VIF analysis results for the main variables

Variable	VIF	1/VIF
Investor	1.400	0.714
MarketCap	1.330	0.753
CulturalDistance	1.190	0.842
TotalLiabilities	1.190	0.842
NetworkingAssets	1.170	0.853

NOC	1.150	0.869
LegalDistance	1.120	0.891
Equitych	1.100	0.912
StateOwned	1.070	0.936
FinanceSystemStructure	1.070	0.938
OSTS	1.050	0.952
PublicIssued	1.040	0.962
GearingRatio	1.040	0.964
InvRate	1.030	0.972
Stdebtch	1.010	0.995
Mean VIF	1.130	

FINDINGS AND IMPLICATIONS

The empirical analysis is structured as follows: First, we examine whether internationalization affects cross-region financing decisions. Second, we employ robustness tests through variable substitution, variable addition measurement, and regression method alteration. Given that the independent variables of internationalization breadth (NOS, NOC) are left-truncated data with a minimum value of 0, and internationalization depth (FSTS, OSTs) are restricted variables between 0 and 1, with many observations having NOS, NOC equal to 0 and FSTS, OSTs equal to 0 as shown in Table 4, we use Tobit regression to obtain unbiased and consistent estimates for this data structure. Therefore, this study continues to use Tobit regression for hypothesis testing. Prior to the analysis, Winsorization has been performed to ensure the consistency and effectiveness of model estimation (Flannery and Rangan, 2006). Additionally, the following procedures have been conducted to ensure the validity and consistency of model testing:

(1) Wooldridge test and cluster-robust standard errors: employed at the 1% level to address panel data serial correlation; (2) Mitigating multicollinearity: all independent variables and moderating variables have been standardized, and random effects regression has been performed with cluster-robust standard errors, followed by an over-identification test. The results have rejected the random effects model, suggesting the use of a fixed effects model with cluster-robust standard errors; (3) Addressing heteroscedasticity, time effects, and cross-sectional correlation: cluster-robust standard errors have been adopted, and STATA 17.0 software has been used for fixed effects model analysis.

Mechanism of Internationalization Degree Influencing Pecking Order Choices with Moderating Effects from Legal Distance, Cultural Distance and Finance System Structure Difference

This section examines the mechanism through which the degree of internationalization affects the selection of pecking order, presenting the following empirical results. Tables 4 and 5 provide the correlation analysis and multicollinearity analysis results for the relationships between internationalization breadth, internationalization depth, pecking

order, legal distance, cultural distance, and finance system structure. Based on the pecking order concept of prioritizing internal financing, followed by external debt financing, and using external equity financing as the last resort, a positive pecking order is 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 has been uniformly obtained from the company's annual reports. Net debt financing and net equity financing amounts have been sourced from two data sources: annual reports and market transactions. For the annual report source, net debt financing and net equity financing amounts is the net increases in long-term liabilities and owners' equity, respectively, from the balance sheet. For market transaction data, net debt financing is the total amount of syndicated loans and bonds issued during the year, while net equity financing is the total amount of equity financing through the market during the year. This study uses 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 Table 6, Model (1) is the baseline model, including all control variables (industry and market values). Models (2) and (3) are extended models based on Model (1), with the addition of internationalization breadth (NOC) and internationalization depth (OSTS) as independent variables, respectively. 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 ($\beta = -5.0604$, $p < 0.05$), 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.

Furthermore, the results of Model (6) show that legal distance has a significant negative moderating effect ($\beta = -0.0385$, $p < 0.01$) and finance system structure difference has a significant positive moderating effect ($\beta = 0.0049$, $p < 0.10$), while cultural distance has no significant moderating effect. Hence, hypothesis H3 and hypothesis H5 are verified, while hypothesis H4 cannot be verified.

Table 6: Main model: Examining the relationship between internationalization degree and pecking order with moderating effects

	PeckOrder (based on book value)					
	(1)	(2)	(3)	(4)	(5)	(6)
NOC		0.0342***	0.0344***	0.0602***	0.0599***	0.0584***
		(8.23)	(8.33)	(7.66)	(6.85)	(6.67)
OSTS			-5.0604**	-5.0319**	-4.9155**	-5.3655**
			(-2.36)	(-2.31)	(-2.27)	(-2.45)
LegalDistance				-0.0360***	-0.0358***	-0.0385***

				(-3.79)	(-3.52)	(-3.73)
CulturalDistance					0.0024	-0.0098
					(0.07)	(-0.27)
FinanceSystemStructure						0.0049*
						(1.82)
TotalLiabilities	0.0002***	0.0002***	0.0002***	0.0002***	0.0002**	0.0002**
	(2.85)	(2.85)	(2.85)	(2.58)	(2.57)	(2.56)
MarketCap	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	(1.22)	(1.22)	(1.22)	(1.25)	(1.25)	(1.27)
PublicIssued	0.0076	0.0076	0.0076	0.0076	0.0076	0.0076
	(0.91)	(0.91)	(0.90)	(0.94)	(0.94)	(0.97)
Networkingassetsch	0.0083	0.0083	0.0083	0.0083	0.0083	0.0083
	(0.15)	(0.15)	(0.15)	(0.21)	(0.21)	(0.23)
Equitych	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001
	(-1.48)	(-1.48)	(-1.48)	(-1.51)	(-1.51)	(-1.49)
Stdebtch	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100
	(1.54)	(1.54)	(1.54)	(1.56)	(1.55)	(1.54)
Gearingratio	-0.0002***	-0.0002***	-0.0002***	-0.0002**	-0.0002**	-0.0002**
	(-2.81)	(-2.80)	(-2.75)	(-2.56)	(-2.53)	(-2.43)
Investor	-0.0059	-0.0059	0.0095	0.0059	0.0058	0.0046
	(-0.58)	(-0.58)	(0.76)	(0.48)	(0.46)	(0.37)
Invrate	0.7088***	0.7089***	0.1142	0.1510	0.1549	0.1974
	(7.83)	(7.82)	(0.40)	(0.54)	(0.54)	(0.70)
_cons	0.1847	0.0370	1.0717***	1.4421***	1.4335***	1.4886***
	(0.23)	(0.05)	(20.86)	(12.71)	(8.18)	(8.40)
N	4910	4910	4910	4910	4910	4910

Robustness Tests

Although the empirical results indicate that the breadth and depth of internationalization significantly influence pecking order choice, this correlation may be affected by firm-specific factors, comparison bias, or inappropriate indicator selection. To address these potential issues, this study conducts robustness tests by substituting the dependent variable, adding control measurement variables, and adopting alternative regression methods to examine endogeneity.

Robustness Test - Substituting the Dependent Variable

To ensure the robustness of our findings, we substitute the pecking order selection based on market transactions for the book-value-based pecking order selection as the dependent

variable. In Table 7, Model (1) serves as the baseline model, incorporating all control variables (industry and market value). Models (2) and (3) build upon Model (1) by adding of internationalization breadth (NOC) and internationalization depth (OSTS) as independent variables, respectively. The results of Model (3) demonstrate that internationalization breadth (NOC) has a significant positive effect on pecking order selection ($\beta = 0.0344$, $p < 0.01$), indicating that the more countries Chinese companies engage with through internationalization, the more likely they are to adhere to a traditional (positive) pecking order. Conversely, the results of Model (3) also 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 subsidiaries in Chinese companies' internationalization efforts correlates with a preference for a reverse (negative) pecking order. These findings indicate that even after substituting the dependent variable measurement, the results of this study remain robust. Additionally, the moderating effects of legal distance and finance system structure differences also exhibit strong robustness. This further validates the consistency and reliability of our empirical results, reinforcing the conclusion that both the breadth and depth of internationalization significantly impact pecking order choices in cross-region financing decisions.

Table 7: Robustness Test (Substituting Dependent Variable): Examining the relationship between internationalization degree and pecking order with moderating effects

	PeckOrder (based on market transactions)				
	(1)	(2)	(3)	(4)	(5)
NOC		0.0142***	0.0143***	0.0171***	0.0164***
		(5.27)	(5.28)	(4.97)	(4.67)
OSTS			-0.8210*	-0.7957*	-0.7356*
			(-1.81)	(-1.77)	(-1.65)
LegalDistance				-0.0040*	-0.0044*
				(-1.44)	(-1.60)
FinanceSystemStructure					0.0013*
					(1.85)
TotalLiabilities	0.0002	0.0002	0.0002	0.0002	0.0002
	(1.15)	(1.15)	(1.15)	(0.83)	(0.92)
MarketCap	0.0001	0.0001	0.0001	0.0001	0.0001
	(0.31)	(0.30)	(0.30)	(0.30)	(0.35)
PublicIssued	-0.0001**	-0.0001**	-0.0001**	-0.0001**	-0.0001**
	(-2.48)	(-2.48)	(-2.48)	(-2.47)	(-2.47)
NetworkingAssetsch	0.0080	0.0080	0.0080	0.0080	0.0080
	(1.01)	(1.01)	(1.02)	(1.05)	(1.09)
Equitych	-0.0092	-0.0092	-0.0092	-0.0092	-0.0092

	(-0.95)	(-0.95)	(-0.95)	(-0.98)	(-0.94)
Stdebtch	-0.0100	-0.0100	-0.0100	-0.0100	-0.0100
	(-0.90)	(-0.90)	(-0.90)	(-0.85)	(-1.02)
GearingRatio	0.0001	0.0001	0.0001	0.0001	0.0001
	(0.68)	(0.68)	(0.69)	(0.72)	(0.77)
Investor	0.0018	0.0018	0.0041	0.0038	0.0033
	(0.99)	(0.99)	(1.57)	(1.44)	(1.27)
Invrate	0.0568***	0.0568***	-0.0338	-0.0308	-0.0152
	(3.23)	(3.23)	(-0.60)	(-0.56)	(-0.28)
_cons	0.7791***	0.7175***	0.8804***	0.9210***	0.9236***
	(5.39)	(4.86)	(31.14)	(23.72)	(23.76)
N	4910	4910	4910	4910	4910

Robustness Check - Adding Control Variables

Given that state-owned enterprises (SOEs) typically receive more protection (Pessarossi and Weill, 2013 ; Fotak, 2016), we introduce a dummy variable for state ownership as a control variable. This addition aims to exclude the influence of company attributes on the regression results, thereby enhancing the reliability of the findings. After incorporating this control variable, Table 8 presents the test results: The relationships between internationalization breadth (NOC), internationalization depth (OSTS), and the book value-based pecking order remain significantly correlated at the 0.01% and 0.10% 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, $p < 0.01$). This suggests that the more countries Chinese companies engage with through internationalization, the more likely they are to adhere to 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, $p < 0.05$). This implies that the higher the proportion of overseas subsidiaries in Chinese companies' internationalization efforts, the more inclined they are to adopt a negative financing order. Therefore, after adding the control variable for state ownership, the relationships between internationalization and the book value-based pecking order, along with moderating variables, remain consistent with the main model results. This consistency demonstrates the robustness of the findings.

Table 8: Robustness Check (Adding Control Variable): Examining the relationship between internationalization degree and pecking order with moderating effects

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

Robustness Check - Substituting the Independent Variable

To ensure the robustness of our regression results, we substituted the internationalization depth variable with the Foreign Sales to Total Sales (FSTS) ratio, which represents the proportion of overseas income relative to total income. This substitution helps eliminate any potential bias introduced by the selection of independent variable, thereby enhancing the reliability of the regression results. After replacing the independent variable, the test results are presented in Table 9. The relationship between internationalization breadth (measured by the number of countries, NOC) and internationalization depth (measured by FSTS) with the pecking order (based on financial statements) remains significantly correlated at the 0.01% and 0.05% levels, respectively. Additionally, the negative moderating effect of legal distance continues to be statistically significant at the 0.01% level. The positive moderating effect of differences in financing market structures between mainland China and Hong Kong also remains statistically significant at the 0.1% level. These consistent results, even after substituting the independent variable, confirm that the findings of this study are robust. The significant correlations and moderating effects

observed in the main model are preserved, indicating that the conclusions drawn from this research are reliable and not sensitive to the specific choice of the internationalization depth variable.

Table 9: Robustness Check (Substituting dependent variable): Examining the relationship between internationalization degree and pecking order with moderating effects

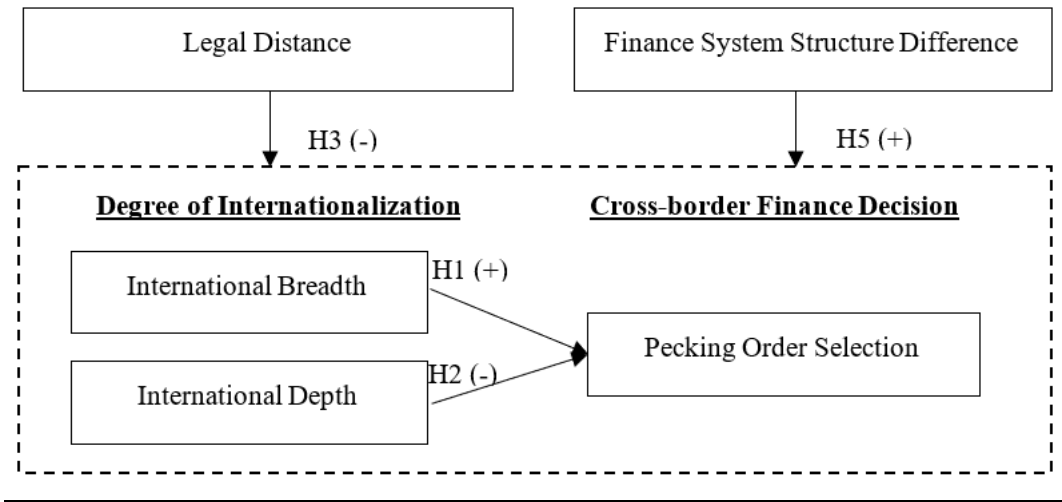
	PeckOrder (based on book value)				
	(1)	(2)	(3)	(4)	(5)
NOC		0.0343***	0.0332***	0.0592***	0.0564***
		(8.12)	(7.81)	(7.46)	(7.05)
FSTS			-0.2314**	-0.2215**	-0.2214**
			(-2.40)	(-2.30)	(-2.30)
LegalDistance				-0.0364***	-0.0380***
				(-3.81)	(-3.94)
FinanceSystemStructure					0.0050*
					(1.87)
TotalLiabilities	0.0001***	0.0001***	0.0001***	0.0001**	0.0001***
	(2.87)	(2.87)	(2.85)	(2.58)	(2.60)
MarketCap	0.0001	0.0001	0.0001	0.0001	0.0001
	(1.20)	(1.20)	(1.25)	(1.28)	(1.31)
PublicIssued	0.0002	0.0002	0.0002	0.0002	0.0002
	(0.92)	(0.92)	(0.92)	(0.96)	(0.97)
NetworkingAssetsch	0.0072	0.0072	0.0072	0.0072	0.0072
	(0.19)	(0.19)	(0.19)	(0.24)	(0.27)
Equitych	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001
	(-1.48)	(-1.48)	(-1.48)	(-1.51)	(-1.50)
Stdebtch	0.0083	0.0083	0.0083	0.0083	0.0083
	(1.55)	(1.55)	(1.53)	(1.55)	(1.53)
GearingRatio	-0.0002***	-0.0002***	-0.0003***	-0.0002***	-0.0002***
	(-2.91)	(-2.91)	(-3.01)	(-2.82)	(-2.67)
Investor	-0.0002***	-0.0002***	-0.0003***	-0.0002***	-0.0002***
	(-2.91)	(-2.91)	(-3.01)	(-2.82)	(-2.67)
Invrate	0.7391***	0.7392***	0.7973***	0.7966***	0.8299***
	(10.13)	(10.12)	(10.77)	(11.15)	(11.76)
_cons	0.5535	0.4055	0.1249	0.5545	0.6086
	(0.87)	(0.64)	(0.20)	(0.90)	(1.02)

N	4910	4910	4910	4910	4910
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CONCLUSIONS

This study examines a research sample of 785 non-financial Chinese companies listed on the Hong Kong Main Board from 2010 to 2020, employing various empirical methods to test the research hypotheses. The findings reveal that both the breadth and depth of internationalization are significantly correlated with the pecking order of corporate financing, with these relationships being moderated by legal distance and differences in finance system structures. Specifically, compared to internal financing and debt financing, MNE exhibit a stronger inclination towards external financing and equity financing, with the impact of the internationalization depth being more pronounced than that of internationalization breadth. Furthermore, robustness tests were conducted by substituting the dependent and independent variables and incorporating a state-owned enterprise attribute control variable. The results consistently demonstrated that the relationships between internationalization breadth, internationalization depth, and pecking order selection remain significant. Consequently, hypotheses H1, H2, H3 and H5 of this study are empirically supported, indicating that internationalization breadth and internationalization depth significantly influence the selection of pecking order, with moderating effects from legal distance and differences in financial system structure.

These findings underscore the importance of considering both the scope and intensity of international business operations when making financing decisions. The moderating effects of legal distance and financial system structure differences highlight the complexities that multinational enterprises face in cross-region financing. By understanding these dynamics, companies can better navigate the challenges of international finance, optimize their capital structure, and enhance their overall business performance.



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