



Article

Moderating Effects of Founders' Role on the Influence of Internationalization on IPO Performance of Listed Companies in Thailand

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Abstract: Previous research suggests that internationalization affects initial public offering (IPO) performance in the short term, but it less is known about the founders' role in the relationship between internationalization and IPO performance. The objectives of this study were to investigate moderating effects of the founders' role on the impact of internationalization on IPO performance of newly listed companies. The samples included 80 international firms listed in Thailand stock markets from 2013 to 2020. Multiple regression analysis was employed to test the effects of internationalization on IPO performance, and the PROCESS macro was applied to test the moderating effects. Founder CEO as a proxy of a founders' role was a moderator variable where internationalization was a predictor variable and IPO underpricing, a proxy of IPO performance, was the outcome variable. The results revealed that internationalization demonstrated no statistically significant effect on IPO underpricing. A non-founder CEO had a moderating effect on the influence of internationalization on IPO underpricing, whereas a founder CEO revealed no moderating effect. Specifically, internationalization had a negative effect on IPO underpricing once an international firm had a non-founder CEO. A decrease in IPO underpricing of international firm is clearly explained by the results of this study.

Keywords: initial public offering; IPO underpricing; internationalization; founder CEO; moderating effect



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1. Introduction

Raising funds in the stock market is one of the means that public firms use to increase large equity capital to drive their business. In order to go public and be listed on the stock exchange, firms have to raise funds by issuing newly ordinary shares and selling them directly to their existing shareholders and general public at the initial public offering (IPO) price or offer price. This process is called initial public offering (IPO). Offering IPO shares is considered as the firm's first effort to increase the equity capital by entering the public stock market (Carter and Manaster 1990; Ritter 1998). When IPO shares are traded in the stock market, the difference between first-day closing price and IPO price is called IPO underpricing. Specifically, the IPO underpricing occurs if the stock price on the first trading day is higher than the IPO price. Thus, an investor obtains capital gains as initial returns from their IPO shares while firms as new issuers have left money on the table, which is issuing firms' indirect costs (Ritter 1987; Loughran and Ritter 2002).

IPO underpricing is crucial and worthwhile to study because it was used to measure the short-term performance of IPOs (Certo et al. 2009). The phenomenon of an IPO underpricing and its occurrence has been studied for three decades all over the globe. Scholars have found it utterly bewildering when an issuer leaves money on the table, and investors get rewards from the initial returns. The study of an IPO underpricing is very

popular among academicians, such as [Rock \(1986\)](#), and [Brau and Fawcett \(2006\)](#). They indicated that an uninformed investor can be rewarded from this phenomenon by taking risk in an IPO investment. Similar to high-quality firms, a low-quality firm attempts to offer IPOs at a discounted price in order to compensate uninformed investors for costly IPO investment ([Brealey et al. 1977](#); [Welch 1989](#)). In doing so, this low-quality firm can demonstrate to the market as a high-quality firm by issuing stocks at a discounted price as other high-quality firms do. Thus, underpricing refers to the quality of a firm since a strong firm can respond to the cost of underpricing better than a low-quality firm. Furthermore, underpricing represents a portion of wealth carried from an old stock owner to a new stock owner ([Certo et al. 2001b](#)). This phenomenon can be explained by signaling theory and agency theory. Both theories are grounded on asymmetric information among primary stakeholders in the IPO issuing activity.

The benefits of an internationalization in the IPO context have been suggested by [Certo et al. \(2009\)](#). Several research studies revealed that internationalization enhances the value of long-term firm performance ([Contractor et al. 2003](#); [Stanton and Stanton 2011](#); [Zahra et al. 2000](#)). However, there are few studies examining the effect of internationalization on short-term performance, and there are several exploring developing markets ([Ozdemir and Upneja 2016](#); [LiPuma 2012](#); [Al-Shammari et al. 2013](#)). In particular, these limited studies examine the effect of internationalization on IPO underpricing in emerging markets ([Peng et al. 2021](#)). This study extends the body of knowledge with the mechanism explanation that causes the effects of internationalization on IPO underpricing. A low degree of underpricing reflects a successful post-IPO since the opportunity cost is reduced. Moreover, it also reflects lower information asymmetry. Similarly, a high level of information asymmetry is associated with a higher level of IPO underpricing. Moreover, previous studies have revealed that internationalization lessens information asymmetry ([Ozdemir and Upneja 2016](#); [Al-Shammari et al. 2013](#); [Peng et al. 2021](#)) as well as IPO underpricing. In order to clarify the role of internationalization on the IPO firm performance, this research aimed to study how information asymmetry based on signaling theory and agency theory influences a reduction of IPO underpricing. [McDougall and Oviatt \(1996\)](#) found that the relationship between the degree of internationalization (DOI) and an IPO underpricing might not be direct. With regard to evaluating corporate governance and its effect on IPO performance, [Certo et al. \(2003\)](#) found that the board and executives of an IPO firm had a powerful motivation to boost an investor's confidence to invest in the firm which was challenging since IPO firms were at high levels of uncertainty. In addition, [Cheung et al. \(2018\)](#) studied a short-term performance of 938 IPOs in the Hong Kong stock market from 1994 to 2014 and revealed that founders' leadership demonstrated statistically negative significant effects on IPO underpricing. Only a few empirical studies related to founder CEO and performance in IPO contexts were conducted. [Gao and Jain \(2011\)](#) suggested that, in a high technology environment, a founder CEO is particularly beneficial to IPO firms in long-run returns since a founder CEO reflects the board structure suitable for governance needs. The establishment of effective governance structure is important at the time of IPO issue. Investors pay attention to an organizational governance structure since it affects agency problems ([Baker and Gompers 2003](#)). Particularly, it separately evaluates the impact of a founder CEO and a non-founder CEO on IPO performance. Certain studies also provide arguments to support founder CEO impact on IPO performance ([Nelson 2003](#)). In addition, a non-founder CEO as a professional CEO impacts IPO performance by reducing conflicts of interest between a founder and a CEO ([Gao and Jain 2011](#)). This is due to the fact that founders with inside information about their firms can reduce costs of information asymmetry by communicating the expected value of their firms in the long-term performance, and limit adverse selection problems by reducing underpricing. [Gao and Jain \(2011\)](#) also indicated that a founders' role affected IPO underpricing. Therefore, DOI and founders' roles are considered to be factors influencing IPO underpricing.

The objectives of this study were to investigate the influence of DOI on short-term IPO performance measured by IPO underpricing, and to examine the moderating effects

of founders' roles on the effect of DOI on IPO underpricing since DOI's effect on IPO underpricing depends on the founders' role. This study concentrates on IPO underpricing in developing and emerging markets with a high degree of underpricing, and corresponds Peng et al. (2021), who suggested that the role of DOI on IPO underpricing in emerging markets is different from mature markets. The Thai capital market was selected to be representative of an emerging market. The Thai capital market, of which the average initial returns of IPO shares were 63.13%, represents an emerging capital market (Kongkaew et al. 2020) while the average of underpricing in developed capital markets was 15.6% in the United Kingdom (Kotlar et al. 2018), and 16.7% in the United States (Jay Ritter 2020)¹. It is evident that the degree of underpricing in Thai capital market is higher than the developed capital market. Even though the Thai capital market is rather small and a thinly traded market, it impacts the global financial market (Komenkul and Siri Wattanakul 2016).

With an intention to develop a regression model and explain the causes of an IPO's underpricing, especially the interaction between DOI and founders' roles on underpricing, this research helps with adding international business and finance literature to the body of knowledge contribution. Since the benefit of a post-IPO performance identified in this study can provide necessary insights for an issuer and an investor, an issuer can plan a roadshow to communicate with the public regarding the quality of the firm. To do so, an issuing firm can display its growth opportunity and its propensity from being internationalized.

If the firm goes public, it is unnecessary to underprice its IPO offerings because the firm can appropriately determine the price of its IPO based on its intrinsic value. Even though selling shares in the secondary stock market at the price yields minimal initial returns to an investor, the initial returns is a short-term benefit. For long-term benefits, the firm can generate more financial benefits to an investor as a result of being internationalized. Simultaneously, an IPO issuing firm will benefit from a decrease in underpricing. In other words, lower underpricing helps reduce the money left on the table and the costs of equity issuance. A discovery of the association between DOI and IPO underpricing within the condition of founders' role benefits the firm's plan to raise funds despite differences in DOI, founders' role, and IPO performance.

2. Literature Review

2.1. Internationalization and Underpricing

According to Certo et al. (2009), several IPO studies focused on the initial returns of an IPO or an increased share price on the first trading day compared to the IPO price. This phenomenon is known as an IPO underpricing. The main theories used to explain IPO underpricing are the principles of signaling theory and agency theory. In fact, an IPO issuing firm attempts to send a quality signal to demonstrate investment opportunity for potential investors. This is in line with Brealey et al. (1977), who revealed that an issuing firm sends a good signal to demonstrate its value and quality to potential investors. Welch (1989) also presented that a signal from high-quality firms can be sent to the public in the form of underpricing since high-quality firms can respond to the cost of underpricing better than the low-quality firms. In addition, Chemmanur (1993) suggested that only a good quality firm can offer underpriced IPO shares to compensate uninformed investors. However, low-quality firms also attempt to adopt the strategy to create good images and attract investors to attend their IPO event. In fact, it is less necessary for high value companies to underprice their IPOs because their stocks are demanded in the market.

Agency theory is used to explain the relationship between the owner as the principal and the manager as the agent. Since owners cannot directly manage the firm, the agent is appointed to manage and maximize the owner's profit. However, the agency problem usually occurs when there is a conflict of interest between the principal and the agent, in particular when the firm raises funds by issuing new IPOs. At this process, the firm confronts conflicts arising as a result of the transition to a new ownership and governance structure. To gain private benefits, managers use underpricing as a strategy by allocating

the shares among new investors. However, allocating a high proportion of shares to the potential investors would reduce the wealth of former owners but can enhance firm value with better monitoring (Stoughton and Zechner 1998). Since the choice of the organization is a central aspect of corporate governance style, it is essential to concern the professional chief executive officer or the leader of newly public firms. According to Loughran and Ritter (2004)'s explanation, agency problems occur when decision-makers and other pre-IPO shareholders have conflicts of interest. However, lower agency cost can positively impact post-IPO firm performance.

The factors affecting IPO performance have been framed in this research within signaling theory and principle-agency theory. This is consistent with IPO research concerning firm characteristics and specific issuing (Certo 2003). In addition, Certo et al. (2009) suggested investigating the effect of DOI on the short-term performance of an IPO. In previous international business research, internationalization was hypothesized to impact the firm performance due to considerable benefits from international advantage, such as high market power (Hymer 1976), lower costly resource (Rugman 1979), and learning development (Vernon 1971). Positive effects between internationalization and firm performance were continuously found (Pangarkar 2008; Hsu and Pereira 2008; Lin et al. 2011; Xiao et al. 2013). In the IPO context, internationalization is considered as a good signal to investors. Investors are also willing to invest in underpriced IPO stocks to compensate for their inferiority due to information asymmetry. In case an issuing firm sends potential signals about the post-IPO performance with an initial return to investors, information asymmetry as well as money left on the table will be lowered. According to signaling theory, a few researchers have examined the relationship between foreign activities and an IPO underpricing in the short-run performance.

LiPuma (2012), who studied the relationship between international intensity (DOI) and an IPOs' pre-money valuation by examining 184 U.S. new ventures from 1997 to 2003, found a negative relationship between DOI and an IPOs' pre-money valuation, especially among young ventures. Certo et al. (2009) pointed out that DOI may not increase an IPO underpricing, but it increases the firm performance during post-IPO. Additionally, Ozdemir and Upneja (2016) studied 1822 IPOs of service firms between 1980–2009 and found that international firms left less money on the table than domestic firms. According to Peng et al. (2021), who studied 891 Chinese IPOs from 2003–2016 found that DOI can reduce IPO underpricing. Thus, it is hypothesized that

Hypothesis 1 (H1). *Internationalization causes IPO underpricing to decrease.*

2.2. Moderating Effect of the Founders' Role

The relationship between the predictor variable X and the outcome variable Y can be altered by the moderating role (Hayes 2012). The moderation analysis of IPO underpricing studied by Al-Shammari et al. (2013) showed that DOI had a strong relationship with an IPO underpricing when DOI had interacted with the ownership structure (i.e., block holder ownership and CEO ownership). Similarly, the impact of business group internationalization on IPO underpricing firm affiliated with business groups was studied by Hsieh et al. (2017)). Business group internationalization considers aspects from foreign assets, foreign sales, and foreign subsidiaries. The relationship between group internationalization and IPO underpricing is significant and positive when measured by foreign sales. The effect of business group internationalization on IPO underpricing for a family-controlled business group is positive and more significant than a non-family-controlled business group. Agency problems usually occur in family-controlled business since family business concentrates on their self-interest and exploiting minority shareholders' interests by engaging in transfers of benefits and wealth. Consequently, the effect of business group internationalization and business operating risk leads to greater IPO underpricing. Due to this, outside investors expect premium. Moreover, higher ownership reduces IPO underpricing arising from group internationalization. Daily et al. (2003) also revealed that moderation effect analysis

or interaction analysis were suggested to test the relationship between DOI and IPO underpricing.

Newly listed companies are required to disclose their corporate governance and executive mechanism in the prospectus which can help address the agency problems. An evidence of the relationship between corporate governance and the short-term IPO performance indicated a conflict of interest between value investors and executives which can be explained by agency theory (Certo 2003). The conceptual research framework considers DOI as an antecedent variable, and IPO underpricing as an outcome variable. Additionally, the model extended in this study identified the founders' role as a moderator variable.

Founders' role is an important component of corporate governance mechanisms that reduces the agency problem between managers and controlling or minority shareholders. Nelson (2003) found that the founder CEO play a vital role on an IPO performance since their role can lead to growth and goal achievement of a firm.

Daily and Dalton (1992) found the difference between founder CEO and non-founder CEO in terms of the firm's performance and management activity that the power to monitor and control will be low if the founder is also the CEO of the firm. In the case of the non-founder CEO, the founder can strongly monitor and control the work of the CEO. According to Gao and Jain (2011), professional CEOs can reduce conflicts of interest between the founder and CEO.

Since the founders' role is a key success of an IPO issuance, his management can create wealth for the firm and impact an IPO underpricing (Certo et al. 2001a). Moreover, the effect of DOI on an IPO underpricing becomes stronger, particularly when a firm has a non-founder CEO. Corporate governance can be enhanced by a non-founder CEO, besides internationalization. This can also reduce agency problems and IPO underpricing. Thus, a non-founder CEO is a stronger quality signal, and it is hypothesized that

Hypothesis 2 (H2). *The founders' role affects the effect of internationalization on IPO underpricing, such that the effect of internationalization on IPO underpricing is stronger for a non-founder CEO than a founder CEO.*

To summarize, determinants of IPO performance are considered in this analysis. The signs of relationship with IPO performance are determined based on findings from the previous empirical studies, and predicted effects are determined based on IPO performance from theoretical reasoning as shown in Table 1. Focusing on internationalization and governance, the conceptual framework of this research is shown in Figure 1.

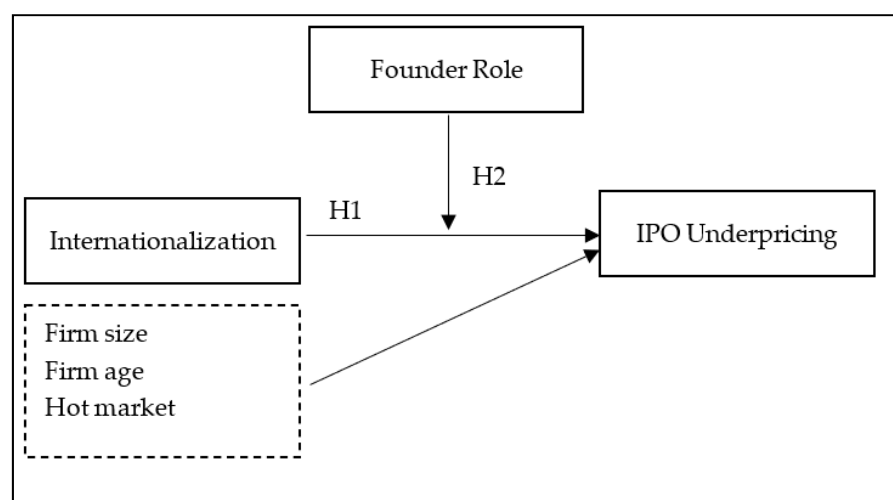


Figure 1. Conceptual research framework. Source: Literature review.

Table 1. Determinants of IPO performance and related theories.

Study	Country	Period	Sample	Independent Variable	Moderator Variable(s)	IPO Performance Measure	Theory	
							Signaling	Agency
Effect of internationalization on IPO performance								
LiPuma (2012)	US	1997–2003	184	FSTS		ST-Pre-money (–)		↑/↓
Ozdemir and Upneja (2016)	US	1980–2009	1822	International/Domestic (dichotomous)		ST-UP (–) LT-CAR (+), BAH (+) ST-UP	↓ ↑ ↑	
Peng et al. (2021)	China	2003–2016	891	FSTS				↓
Effect of governance on IPO performance								
Certo et al. (2001a)	US	1990–1998	748	Outside directors Board reputation		ST-UP (+) ST-UP (–)	↓ ↓	
Gao and Jain (2011)	US	1997–2000	1963	Founder CEO	High/Low technology	LT- BAH (+)	↑	↑
Effect of internationalization (proxy is FSTS) and governance on IPO performance								
Al-Shammari et al. (2013)	US	1997, 1998, 2001 and 2002	1084	FSTS	Block holder CEO ownership	ST-UP (+/–) ST-UP (+)	↑ ↑	↑ ↑
Hsieh et al. (2017)	Taiwan	2001–2010	109	FSTS	Family/Non-controlled business groups	ST-UP (+/+)		↑
					Business group owner ship	ST-UP (–/–)		↓

Note: FSTS refers to the ratio of foreign sales to total sales. Pre-money refers to $p_u q_t - p_u q_i$, where p_u is the final IPO subscription price, q_t is the number of shares outstanding, and q_i is the number of IPO shares offered. ST-UP refers to short-term underpricing, LT-CAR refers to the long-term cumulative abnormal returns, and BAH refers to the long-term buy-and-hold. Sign (–) refers to negatively relationship, sign (+) refers to positively relationship, sign (↑) refers to increased IPO performance, and sign (↓) refers to decreased IPO performance.

3. Methodology

3.1. Sample and Data

The sample of this study consisted of 80 specific international firms listed on the Stock Exchange of Thailand (SET) and Market for Alternative Investment (mai) between 2013–2020. After the big flood crisis in 2011, the number of issued IPO shares began to increase in 2012, and 227 public firms issued IPO stocks during the selected time period. There were 98 international public firms with underpricing. However, seven public firms were excluded in this study due to missing data on prospectus, and 11 financial companies were also excluded due to differences in the international business model. Therefore, the final sample size consisted of 80 IPO companies with international elements, such as having branches or subsidiaries overseas, or conducting foreign activities, such as exporting. All variables included in this research were collected from prospectuses, annual reports, SET's database, and Bisnews database.

3.2. Variable and Measurement

3.2.1. Underpricing

Underpricing is commonly used to measure short-term IPO performance most (Certo et al. 2009). It was calculated as the first-day closing price minus the offer price, divided by the offer price, and made in percentage (Ljungqvist 2007; Arthurs et al. 2008).

$$UP_{i,t} = \frac{P_{i,1} - P_{i,0}}{P_{i,0}}$$

where:

$UP_{i,t}$ = the underpricing at the time of IPO for stock “i”

$P_{i,0}$ = the IPO offer price of the stock “i”

$P_{i,1}$ = the first-day closing price of the stock “i”

Since the market performance in IPOs illustrates changes in the stock conditions which may affect the initial return of IPO stocks, it becomes a famous measurement for many researchers (Mehmood et al. 2020). Thus, underpricing with market returns is adjusted to

market change, and used to measure short-term IPO performance in this study. The market return calculation is

$$Rm_{i,t} = \frac{MI_{i,t} - MI_{i,0}}{MI_{i,0}}$$

where:

$Rm_{i,t}$ = the market return of the corresponding stock exchange at the time of IPO “t” for stock “i”.

$MI_{i,0}$ = the closing price of the corresponding stock exchange index where stock “i” was listed at the offering day of the company

$MI_{i,t}$ = the closing price of the corresponding stock exchange index where stock “i” was listed at the end of the first-day trading

Thus, market adjusted underpricing ($MAUP_{i,t}$) is the underpricing of the stock “i” adjusted to the market effect of the corresponding stock exchange for period of IPO “t” as follows:

$$MAUP_{i,t} = UP_{i,t} - Rm_{i,t}$$

3.2.2. Internationalization

The main construct of this study is the degree of internationalization (DOI) which can be measured in several ways (Sullivan 1994). In prior research studies, the percentage of foreign sales to total sales (FSTS), such as export or license, operating in more than one country was used to measure DOI (Capar and Kotabe 2003; Al-Shammari et al. 2013; LiPuma 2012). Therefore, Thai newly listed companies with branches or subsidiaries overseas or conducting foreign activities, such as exporting, were studied in regard to their internationalization.

3.2.3. Founders’ Role

The moderator variable is the founders’ role, which is a dichotomous measure (1 = a founder CEO, 0 = a non-founder CEO) (Certo et al. 2001b; Pour 2015).

3.2.4. Control Variables

The variables used to determine IPO underpricing in this study include three factors: firm size (FSIZE), firm age (AGE), and hot market (HOT). Firstly, firm size was calculated by the total asset in the year of IPO (Mudambi et al. 2012; Heeley et al. 2007; Al-Shammari et al. 2013; Ozdemir and Upneja 2016; Arthurs et al. 2008; Certo et al. 2001b). According to numerous studies, large firms are superiorly organized and tend to reduce underpricing due to low information asymmetry regarding the existence of the firm (Heeley et al. 2007). In addition, they also decrease information asymmetry in terms of their intrinsic valuation. Secondly, firm age, determined by the difference of the firm’s founding year and its IPO year, was included as a control variable in the examination of IPO underpricing. Since the majority of older firms provide access to information for evaluation, it helps reduce IPO underpricing (Heeley et al. 2007). Lastly, the hot market can be a factor in IPO underpricing. Hot market refers to the period when the high initial returns and the volume of issuing company become greater (Ritter 1984; Lowry et al. 2017). If the IPO was issued in 2014, a dummy variable code is ‘1’. If the IPO was issued in the other years, a dummy variable code is ‘0’. During the hot market in 2014, the volume of trading and the stock market return had abnormally increased. Table 2 presents the distribution of underpriced IPOs by year. Obviously, the returns in 2013, 2014, 2015, and 2016 were 57.55%, 83.26%, 51.66%, and 57.95%, respectively. The IPOs in those years were significantly underpriced, and higher than the average. In 2014, the annual market return was greater than the average, and the volume of issuing company was the largest. Thus, 2014 is a hot market and classified as a control variable.

Table 2. Descriptive statistics of initial returns and market returns by year of issuance from 2013 to 2020.

Year	N	Mean (%)	Standard Deviation	Maximum	Minimum	Market Returns (%)
2013	28	57.55	68.64	200.00	−29.33	−7.73
2014	36	83.26	71.20	200.00	−25.47	21.69
2015	33	51.66	59.49	200.00	−12.84	−13.16
2016	23	57.95	48.57	200.00	7.00	22.13
2017	38	27.45	32.60	151.09	−10.26	12.16
2018	18	11.15	26.98	71.58	−21.33	−12.07
2019	28	2.47	17.07	47.06	−30.07	0.89
2020	16	53.46	71.31	200.00	−3.68	−15.63
Total	220	44.61	58.60	200.00	−30.07	1.03

Source: The means of initial returns are calculated by the average percentage of the difference between the offer price and the first-day closing price in the secondary market. Market returns are calculated based on SET index returns. The data were collected from the Stock Exchange of Thailand website.

The variable definitions and abbreviations are provided in Table 3.

Table 3. Variables' definitions.

Variables	Abbreviations	Definitions
Dependent variable	MAUP	The market adjusted underpricing
Underpricing		
Independent variable	DOI	The percentage of foreign sales of total sales
- Degree of internationalization		
Moderator variable	FCEO	Code 1 for a founder CEO, 0 for a non-founder CEO
- Founders' role		
Control Variables	FSIZE	The company total asset in the year of IPO
- Firm size		
- Firm age	AGE	The difference between firm's founding year and its IPO year
- Hot market	HOT	Code 1 if the IPO was issued in 2014, Code 0 if the IPO was issued in other years

3.3. Regression Model and Research Framework

The following regression model was estimated to measure IPO underpricing as an outcome variable and to test H1:

$$\text{MAUP} = b_0 + b_1\text{DOI} + b_2\text{FSIZE} + b_3\text{AGE} + b_4\text{HOT} + e$$

In the following model, the founders' role is a moderator variable, DOI is a predictor variable, and underpricing is an outcome variable. The interaction or product of DOI and the founder's role was added to the model to examine H2 as follows:

$$\text{MAUP} = c_0 + c_1\text{DOI} + c_2\text{FCEO} + c_3(\text{DOI} \times \text{FCEO}) + c_4\text{FSIZE} + c_5\text{AGE} + c_6\text{HOT} + e$$

Multiple regression models in the PROCESS template written by Hayes (2012) were utilized to test the hypotheses. The direct terms were applied to transform to mean-centered version and to avoid multicollinearity (Aiken et al. 1991). The PROCESS procedure for SPSS model template 1 was also applied in this study to interpret the conditional moderation effect. In addition, the pick-a-point approach was implemented to explain the interaction effect.

4. Results

4.1. Descriptive Statistics and Correlation Matrix

The 80 international companies as the sample IPOs in Thailand are shown in Table 4. There were 18 companies issuing IPOs in 2014, which is the year with the highest number of IPOs. In addition, the highest average of underpricing or initial returns was also found in 2014 with 79.89%. In contrast, there were only two companies issuing IPOs in 2020, which is the year with the lowest number of IPOs, and the lowest average of underpricing was found in 2018 with 11.96%. The international firms in this study raised a total amount of approximately 143.75 billion Baht (1 USD = 30.9 Baht), which is the value of offer size. The highest amount of the offer size was 35.33 billion Baht in 2017. The lowest amount of offer size was 3.32 billion Baht in 2019. New issuers left 48.90 billion Baht on the table due to the occurrence of underpricing. The highest amount of money left on the table was approximately 10.17 billion Baht in 2017. The lowest amount of money left on the table was approximately 720 million Baht in 2019.

Table 4. Distribution of newly listed companies, underpricing, offer size, and money left on the table from 2013 to 2020.

Issue Year	Number	Average of MAUP (%)	Offer Size (Million Baht)	Money Left on the Table (Million Baht)
2013	12	62.12	14,549.78	3173.27
2014	18	79.89	22,455.70	8288.40
2015	15	57.74	11,047.57	5420.23
2016	11	50.75	26,426.95	8014.37
2017	15	41.75	35,331.16	10,167.98
2018	3	11.96	14,374.93	1081.10
2019	4	13.92	3324.00	720.86
2020	2	53.92	16,238.92	12,037.57
Total	80	55.31	143,749.01	48,903.77

Table 5 presents IPOs in seven major industries, including agribusiness and food, consumer products, industrials, property and construction, resources, services, and technology industry in SET and mai. However, the financial industry was excluded. Panel A presents the overall sample, underpricing and DOI. Panel B and C present IPOs with founder CEO and non-founder CEO, respectively. In panel A, the largest number of IPOs is from service industry with 19 IPOs, while the smallest number of IPOs is from technology industry with five IPOs. The highest average underpricing is from consumer products at 77.75%. The lowest average underpricing is from agribusiness and food at 31.98%. The average underpricing is 55.31%. The average DOI measured by the percentage of foreign sales to total sales (FSTS) is 37.36%. The highest average of DOI is from consumer products at 61.13%, while the lowest average of DOI is from resources at 14.38%. The results in panel B and panel C present the comparison of the founder CEO and non-founder CEO on the number of IPOs, average of underpricing, and average of DOI. In addition, 61 IPO firms or approximately 76.25% of all the firms had a founder CEO, while 19 IPO firms or approximately 23.75% had a non-founder CEO. The average underpricing of IPO in the firms with a founder CEO is 49.24%, while the average underpricing of IPO in the firms with a non-founder CEO is 55.84%. The average DOI of IPO in the firms with a founder CEO is 39.62%, while the average DOI of IPO in the firms with a non-founder CEO is 30.09%.

Table 5. Number of IPOs by industry, MAUP, and DOI for the full sample, samples of founder CEO and non-founder CEO.

Industries	Overall Number	Average of MAUP (%)	Average of DOI (%)
Panel A: Overall sample			
Agribusiness & Food	15	31.98	33.05
Consumer Products	7	77.75	61.13
Industrials	13	62.22	31.50
Property & Construction	11	50.22	49.02
Resources	10	34.11	14.38
Services	19	72.91	45.44
Technology	5	62.62	21.78
Total	80	53.49	37.36
Panel B: Founder CEO			
Agribusiness & Food	13	32.20	37.51
Consumer Products	7	44.63	61.13
Industrials	10	59.50	33.16
Property & Construction	8	50.24	43.89
Resources	4	5.13	7.76
Services	15	58.56	46.80
Technology	4	26.74	21.33
Total	61	49.24	39.62
Panel C: Non-Founder CEO			
Agribusiness & Food	2	14.35	4.05
Consumer Products	-	-	-
Industrials	3	68.80	25.97
Property & Construction	3	56.62	62.69
Resources	6	48.61	18.79
Services	4	81.81	40.35
Technology	1	37.13	23.59
Total	19	55.84	30.09

Table 6 presents descriptive statistics of the variables used in the regression model. The number of firms listed in a hot market in 2014 is 18 firms. The result shows that 61 firms, or three-fourth of the IPO firms have a founder CEO. The average IPO firm size from 2013 to 2020 is approximately 4249 million Baht. From 80 sample international firms, the average firm age at the time of IPO is approximately 20 years. The average DOI is 37.36%. Lastly, the average underpricing of the sample is 55.31%.

Table 6. Means, standard deviations, and correlations among all variables.

Variables	Frequency	Mean	SD	FSIZE	AGE	HOT	DOI	FCEO	UP
HOT	18								
FCEO	61								
FSIZE		4248.93	10,031.55	1.000					
AGE		19.60	12.00	0.154	1.000				
DOI		37.36	32.96	−0.148	−0.001	−0.011	1.000		
MAUP		55.31	54.09	−0.224 **	−0.286 ***	0.285 **	0.059	−0.006	1.000

Notes: Significant at ** $p = 0.05$ and *** $p = 0.01$; $n = 80$.

4.2. Regression Analysis Results

The correlations among all variables are shown in Table 6. There are negative relationships among underpricing, firm size, and firm age. Other variables, such as DOI, have no significant relationship with underpricing. There is no correlation among these

predictor variables. Furthermore, none of the variables have the variance inflation factors (VIF) value > 10, which is the serious level of multicollinearity (Lieberman and Morris 2014) as presented in Table 7.

Table 7. Regression analysis results.

	Model 1	Model 2	Model 3	Model 4
Control Variables				
FSIZE	−0.0009 (−1.5894)	−0.0009 (−1.5087)	−0.0009 (−1.4964)	−0.0009 * (−1.7532)
AGE	−1.0598 ** (−2.2252)	−1.0633 ** (−2.2193)	−1.0648 (2.1935)	−0.8965 ** (−2.1168)
HOT	31.8945 ** (2.3651)	31.9989 ** (2.3587)	31.9880 ** (2.3411)	22.9312 ** (1.9899)
Main effects				
DOI		0.0618 (0.3557)	0.0612 (0.3476)	−0.8278 ** (−2.4491)
FCEO			0.3705 (0.0275)	7.6433 (0.6428)
Interaction				
DOI × FCEO				1.1168 *** (2.9453)
Intercept	72.7454	70.3520	70.1199	61.9295
R square	0.1757	0.1771	0.1792	0.2664
Adjusted R Square	0.1432	0.1332	0.1215	0.1999
R Square change	0.1757	0.0014	0.0000	0.0872
VIF	1.01–1.03	1.02–1.05	1.02–1.05	1.04–5.06
F	5.3998 ***	4.0350 ***	3.1851 ***	4.4192 ***

Notes: Significant at * $p = 0.10$, ** $p = 0.05$ and *** $p = 0.01$; $n = 80$ for all models; unstandardized coefficients are reported, t statistics in parentheses.

To assess the effect of internationalization on IPO underpricing and the moderating effect of founders' role on the effect of internationalization on IPO underpricing, four regression models are found and presented in Table 7. Control variables in the first model includes firm size, firm age, and hot market account for 17.57% of the variance in support for IPO underpricing. With regard to the issue of whether DOI affects underpricing, the results in model 2 indicate that DOI insignificantly affects underpricing. Hence, DOI cannot predict IPO underpricing. Thus, Hypothesis 1 is not supported.

Founders' role was designated as a main effect predictor in model 3 with regard to Hypothesis 2 whether the effect of DOI on IPO underpricing was moderated by founders' role, and whether the effect is stronger in firms with a founder CEO than firms with a non-founder CEO. The results show that the founders' role has an effect on underpricing insignificantly. The interaction term was created by the product of DOI and founders' role, and was entered into regression model as in model 4. The results show that DOI affects underpricing significantly ($b = -0.8278$, $p < 0.05$). Interestingly, the regression coefficient for the product of DOI and founders' role is positive and statistically significant ($b = 1.1168$, $p < 0.01$), and accounts for approximately 8.72% of incremental variance in support for IPO underpricing above the effects of the control variables, the main effects of DOI and FCEO, and the interaction effect. The results indicate that the effect of DOI on IPO underpricing depends on the founders' role. Thus, Hypothesis 2 is supported.

According to Hayes (2012), the PROCESS macro for SPSS is recommended for computing interaction effect and interpreting the condition effect of the predictor at different moderators. Figure 2 shows the condition effect of DOI on IPO underpricing based on the values of founder CEO and non-founder CEO. Interestingly, the interaction effect between DOI and non-founder CEO is negatively and statistically significant ($p = 0.0167$) on IPO underpricing with a coefficient of -0.8278 . In contrast, the interaction effect between DOI

and founder CEO is insignificant ($p = 0.0966$) at a statistically significant level of .05. Thus, the effect of DOI on IPO underpricing was moderated by the founders' role, such that the effect is negative and stronger in firms with a non-founder CEO, whereas the effect in firms with a founder CEO is positively insignificant. The finding reveals a significant effect of internationalization on IPO underpricing of 19 non-founder CEOs. According to [Jenkins and Quintana-Ascencio \(2020\)](#), the minimum sample size for regression models depends on variance, but importantly, not on effect size or the model. With very low variance, both false positive and false negative occurred at $N < 8$. They recommend $N = 8$ for a tight data pattern, and data were clearly identified at $N \geq 25$ with any more variance. Hence, the sample size of 19 non-founder CEOs in this paper is sufficient to be studied.

Test(s) of highest order unconditional interaction(s):						
	R2-chng	F	df1	df2	p	
X*W	.0872	8.6748	1.0000	73.0000	.0043	

Focal predict: M_DOI (X)						
Mod var: FCEO (W)						
Conditional effects of the focal predictor at values of the moderator(s):						
FCEO	Effect	se	t	p	LLCI	ULCI
.0000	-.8278	.3380	-2.4491	.0167	-1.5015	-.1542
1.0000	.2890	.1717	1.6832	.0966	-.0532	.6311

Figure 2. Condition effects of DOI at value of founder CEO (FCEO = 1) and non-founder CEO (FCEO = 0). Output from PROCESS macro for SPSS by [Hayes \(2012\)](#).

To probe the nature of this significant interaction effect, the graph was plotted as in Figure 3. It shows that a non-founder CEO interacting with DOI leads to a decrease in IPO underpricing. It is obvious that high DOI leads to a decrease in IPO underpricing in non-founder CEO firms, and the effect of DOI on underpricing is 0.8278. In contrast, the effect of DOI on underpricing is 0.2890 in founder CEO firms.

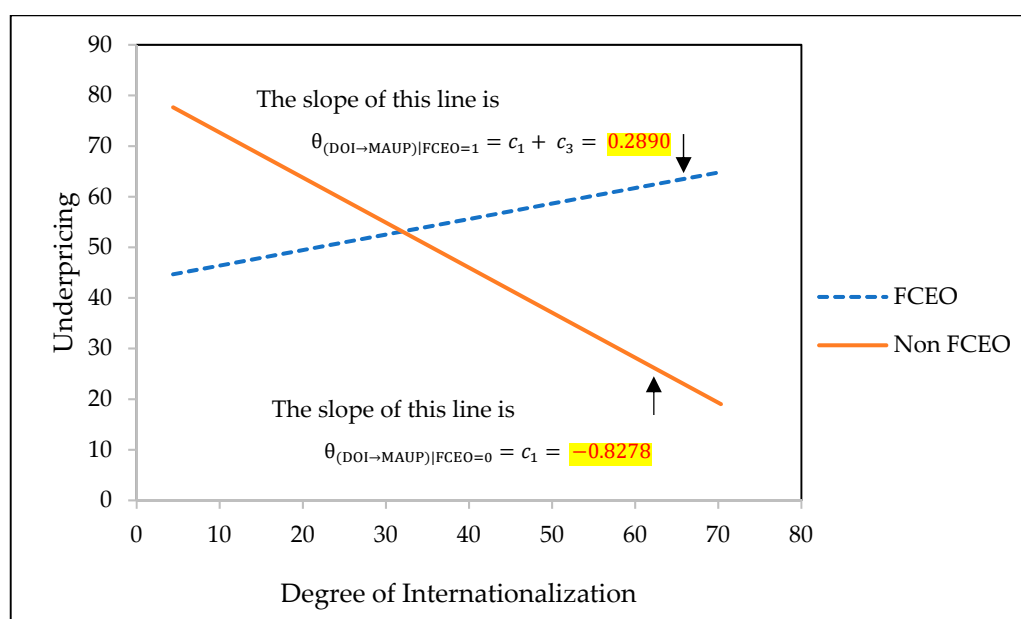


Figure 3. A visual representation of the moderation of the effect of DOI on IPO underpricing by the founders' role: founder CEO (FCEO = 1) and non-founder CEO (FCEO = 0).

5. Discussion and Conclusions

According to Hypothesis 1, the finding revealed that DOI had no significant influence on IPO underpricing. In contrast, prior studies found that effect of DOI on underpricing was conflicting with both positive and negative effects. For example, [Al-Shammari et al. \(2013\)](#) revealed that the DOI effect on IPO underpricing was positive. They suggested that international revenue gives investors an expectation of future growth; therefore, firms international allows for diversification which provides several strategic benefits and reducing business risk. Hence, DOI demonstrates a positive impact on the first day trading price that leads to greater investors' first day returns. The study of [Ozdemir and Upneja \(2016\)](#) found that international firms indicate a lower IPO underpricing compared to domestic firms, and confirms the negative association between DOI and IPO underpricing. However, those studies were conducted in developed countries. According to [Peng et al. \(2021\)](#), who studied the effect of DOI on underpricing in emerging markets and IPOs in China, the results revealed that DOI can reduce IPO underpricing. They suggested that internationalization is a good signal for investors and guarantees the IPO, which is considered a quality investment due to lower information asymmetry. This study is not in line with prior research due to two reasons. First, since the nature of financial markets between developed markets and emerging markets, IPO underpricing in developed markets is different from IPOs in emerging markets as described by [Peng et al. \(2021\)](#). Second, no straight-line relationship between DOI and underpricing is found, but the relationship between them is rather complicated according to [McDougall and Oviatt \(1996\)](#). Moreover, the effect of DOI on IPO underpricing depends on another factor. In this regard, Hypothesis 2 is integrated agency and signaling theory and the use of moderation analysis in explaining the effect of DOI on IPO underpricing. The incorporation of founders' role and DOI is the highlight of this study.

In relation to the result of the second hypothesis, there are the interaction effects between DOI and founder's role on IPO underpricing. That is, the effect of DOI on IPO underpricing in a firm with a founder CEO is positively insignificant at a level of .05. Previous studies argued that a founder CEO and his reputation attracts the attention of investors to make an investment decision since his reputation can reduce risks in IPO shares ([Gao and Jain 2011](#)). In contrast, [Hsieh et al. \(2017\)](#) found that DOI affects degree of IPO underpricing positively and significantly in family-controlled business groups rather than non-family-controlled business groups. The reason is that investors demand a greater degree of IPO underpricing from family-controlled business groups to compensate their increased risks rooted from information asymmetry and an agency problem. Conversely, the result of this study indicates that, in non-founder CEO companies, DOI demonstrates a statistically significant negative effect on IPO underpricing. Thus, a non-founder CEO company with a higher degree of internationalization tends to have a lower first day return of IPO shares. As a result, investors may obtain lower short-term return, while the IPO firm can reduce money left on the table, which increases the company value. A firm with a non-founder CEO and a higher degree of internationalization tends to have a smaller gap between intrinsic value and IPO offer price and less money left on the table. The moderating effect of non-founder CEO on the negative effect of DOI on IPO underpricing might be due to the fact that most non-founder CEOs are professional executives and are assigned to manage the business. Thus, the non-founder CEOs are more capable, skillful, and more experienced than the founder CEO. Furthermore, while non-founder CEOs are being monitored and controlled by the board of directors, they tend to run the business more effectively and efficiently than the founder CEO. The expertise of the professional CEOs, together with the guidance and supervision of the founder, leads the firm to good corporate governance practice, which is consistent with [Daily and Dalton \(1992\)](#). Thus, in a non-founder CEO firm, the chance of IPO underpricing is likely to be lowered, which is consistent with [Nelson \(2003\)](#) and [Gounopoulos and Pham \(2017\)](#), who stated that a professional CEO has a capability to enhance value of the firm. Additionally, this is congruent with the work of [Daily and Dalton \(1992\)](#) and [Gao and Jain \(2011\)](#), who

postulated that the non-founder CEO can help with reducing the conflicts of interests between the founder and the CEO. Therefore, the company can set the IPO offer price close to its intrinsic value which can lead to a decrease in IPO underpricing.

Theoretically, the effect of internationalization on IPO underpricing has been a topic of interest among academicians; however, the finding was inconclusive and perplexing. This research has extended the current literature on internationalization and finance. First, it enriches the current limited research on the effect of internationalization on IPO underpricing by focusing on IPO in emerging markets with a high degree of information asymmetry rather than developed markets. The finding of the study indicates that the phenomenon of the IPO underpricing in emerging markets is different from developed markets. Second, this research highlights the founders' role that moderates the impact of DOI on IPO underpricing. An IPO issued by an international firm with high DOI and a non-founder CEO will have low underpricing. In fact, internationalization was found to be a good signal for investors. It certifies that the IPO is a quality investment due to lower information asymmetry. Besides internationalization, a non-founder CEO enhances corporate governance, which reduces agency problems, and IPO underpricing. These findings also supported the agency and signaling theory in pricing and valuation of IPO stock.

In terms of practical implication, this study indicates benefits to newly listed IPOs in Thailand by suggesting firms to hire a professional CEO or a non-founder CEO to manage the business instead of a founder CEO, since leading an internationalized firm is more complicated than a domestic firm. Apart from enhancing the value of a firm, a non-founder CEO can successfully raise funds with low opportunity costs by not leaving a large amount of money left on the table. Since DOI and a non-founder CEO are considered as positive signals at an IPO event, the IPO price is likely to be close to its intrinsic value, which means underpricing would be less. As a result, an issuing company can reduce the costs of leaving a large sum of money on the table. An investor who invests in an internationalized firm with a non-founder CEO can earn a small initial return on IPO only on the first day; however, there is a chance to earn a better return in the long run. Therefore, IPOs with a higher degree of internationalization and managed by professional CEOs are worthy of investment, especially for long-term investors.

6. Limitations and Recommendations for Future Research

This research still has some limitations which require future research. First, the sample size in this study is rather small due to limited numbers of non-founder CEOs in internationalized IPO firms. In the future, a qualitative research with in-depth interviews should be conducted to confirm and generalize the results of this current research. Second, this study measures a firm's internationalization by income from exports, and only certain new firms disclose such information. Thus, future research should study from more dimensions, such as direct investment, production, employment, and technological knowledge in the international environment. Third, this study focuses on internationalization affecting short-term IPO performance. Thus, future research should also concentrate on long-term IPO performance. Finally, there is a limitation regarding the opening of other hidden factors from corporate governance such as institutional investor and reputation of the underwriter. Thus, future research should investigate whether these factors may moderate the relationship between internationalization and IPO performance.

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Notes

¹ Based on data available on Jay Ritter's website: <https://site.warrington.ufl.edu/ritter/ipodata/> [accessed 1 April 2018].

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