INFLUENCING FACTORS OF SHORT- AND LONG-TERM RETURNS ON IPOS IN THE CHINESE AND THE U.S. CAPITAL MARKETS: A SYSTEMATIC LITERATURE REVIEW

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Abstract

In their studies, Loughran, Ritter, and Rydqvist (1994), Fan, Wong, and Zhang (2007), Chi and Padgett (2005) as well as Ritter (1991) show differences in the regional characteristics of underpricing and overpricing in initial public offerings (IPOs). Our study analysis the regional differences in the influencing factors of underpricing or overpricing based on a systematic literature review that is focused on the Chinese and the U.S. capital markets. Therefore, following the systematic literature review protocol, it was possible to select 38 papers published between 1988 and 2019. Our results show that stock market-specific factors are crucial for regional differentiation. Results on the correlation between stakeholder- and issuance-specific factors are at least partially contradictory. The uniformly identified correlations of stakeholder and issuance factors diverge only slightly in both markets. The investigation of the influencing factors mentioned in the studies also reveals the causal relationship that the IPO return phenomenon of underpricing is influenced by site-exclusive and site-independent factors, whereas overpricing is primarily influenced by site-independent factors. We thus close an existing research gap and satisfy an important information need of issuers and investors.

Keywords: Underpricing, Overpricing, Initial Public Offering, Systematic Literature Review

Authors' individual contribution: Conceptualization — M.K. and T.A.H.; Methodology — M.K. and T.A.H.; Investigation — M.K.; Resources — M.K.; Writing — Original Draft — M.K. and T.A.H.; Writing — Review & Editing — M.K. and T.A.H.; Supervision — T.A.H.

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1. INTRODUCTION

Contrary to Fama (1970), based on the returns on initial public offerings (IPOs), new issues of companies ostensibly draw a picture of the weak information efficiency of the capital market. The difference between the issue price and the subsequent secondary market price due to supply and demand has been the focus of public attention (Ljungqvist, 2007). Positive differences, the so-called underpricing, have been the focus of discussion. However, less attention has been paid to the negative development of IPOs, in which overpricing is also mentioned. When an overpricing or underpricing of an IPO is reported, the return on the IPO can be considered a deviation of the issue price from the fair value, which only happens in the secondary market based on the supply-demand mechanism (Uhlir, 1990).

Depending on particular features, the returns on the IPO phenomena of underpricing are understood as returns for investors and as high indirect costs for issuers. In overpricing, the opposite effect occurs for investors in the form of a loss of liquidity and an additional inflow of capital for issuers. Underpricing potentially endangers growth financing due to the reduction in capital inflow. Overpricing correlates with a weak demand of investors, leading to a potential withdrawal from IPOs (Agarwal, Liu, & Rhee, 2008). A differentiated analysis of the influencing factors relevant to IPO returns and their significance in different markets is pertinent for the choice of location and timing of a new issue for companies and investors due to the potentially different indirect costs. Hence, these results are particularly relevant to stakeholders involved in IPOs, such as the issuing and investing parties. Consequently, systematizing the underlying determinants of IPO returns at a meta-level over space and time is helpful in determining the causal relationships and the basis for further research.

Many studies on the IPO return phenomena have already been able to identify several influencing factors that have negative or positive effects. The influencing factors examined are commonly related to various explanatory approaches, which can be roughly classified into four groups: institutional explanatory approaches, models of asymmetric information distribution, behavioral finance approaches, and corporate governance explanatory approaches. Each of the overarching explanatory groups, and thus the associated influencing factors, has been the focus of research in different periods (Katti & Phani, 2016). In addition to grouping the influencing factors according to the explanatory approaches, the influencing factors can also be generally assigned to content-related categories, such as stakeholder, issue, and stock market-related factors (Bramhoff, 2014; Engelen & van Essen, 2010; Hsieh, 2012; Katti & Phani, 2016), independently of the underlying theory of the study. From this perspective, the respective influencing factors and superordinate categories have not yet been considered, systematized, and compared with regard to their general regional relevance in their entirety.

Therefore, the present study aims to systematize the factors influencing IPO returns with respect to different regions through a systematic literature analysis. The regional differences in the U.S. and the Chinese capital markets are analyzed because of the relevance of their size, which is measured quantitatively (number and volume), and the number of significant studies about them (Loughran, Ritter, & Rydqvist, 1994). Even though the two objects of study are quite comparable in quantitative terms and, in terms of perceived relevance among investors, they differ significantly in their historical development and the role of the respective state, and the related regulation of the capital market.

To achieve the research goal of conducting a critical and comprehensive evaluation of the relevant literature about factors influencing underpricing and overpricing and their relationships with various capital markets, the following research question is proposed:

RQ: What is the influence of stakeholder-, issuance-, and stock market-specific factors on the IPO return phenomena (underpricing and overpricing) in the U.S. and the Chinese capital markets?

We conduct a systematic literature review for the analysis because this study compares and conceptually links scientific findings with heterogeneous methods (Cooper & Hedges, 2009; Tranfield, Denyer, & Smart, 2003), facilitates theoretical development, identifies areas, in which considerable research exists, and uncovers areas, in which research is needed (Webster & Watson, 2011). The method allows the synthesis of a considerable amount of information, and the identification of the most important features of a given topic among the selection of potentially relevant articles through the use of an explicit and reproducible selection process (Adams, Smart, & Huff, 2017; Denyer & Tranfield, 2009; Petticrew & Roberts, 2006; Rousseau, Manning, & Denyer, 2008; Tranfield et al., 2003). This paper contributes to the literature about the relationship among factors influencing returns on IPOs and their spatial and temporal differences.

The remainder of the paper is structured as follows. Section 2 provides the definitions of some key terms and the background to the institutional framework of the stock markets. Section 3 presents an illustration of the methodology. Section 4 contains the descriptive and thematic analyses of identified studies on the designated topic area. Section 5 discusses the results. Section 6 concludes.

2. THEORETICAL FRAMEWORK

Depending on the setting of the fair value for the calculation, different observation horizons can be defined. For this reason, two available time intervals (i.e., short and medium terms) between the initial issue on the primary market and the secondary market are usually used to determine IPO returns. The short-term observation horizon (initial return) refers to the period between the start of the initial issue on the primary market and usually the first price discovery or closing price of the first trading day on the secondary market (Chang, Kim, Kim, & Thornton, 2012; Hanley, 1993; Megginson & Weiss, 1991; Li, Liu, Liu, & Tsai, 2018; Rydqvist, 1997). The medium-term observation horizon refers to the period between the initial issue on the primary market and a time after the end of the first trading day of several days (usually 10 days) on the secondary market (Fan, Wong, & Zhang, 2007; Ge, Guo, Fung, & Guang, 2019; Walker, 2008). In literature, a further observation horizon is also adopted, which refers to a long period of one year or more after the IPO (Fan et al., 2007; Rathnayake, Louembé, Kassi, Sun, & Ning, 2019; Ritter, 1991; Xu, Liang, & Song, 2018). It is often referred to as "long-run performance" in the context of IPOs (Jenkinson, 2009). However, if one assumes in the context of information inefficiencies that the fair value only materializes after, for example, one year, then one can also speak of a long-run performance and an IPO returns in this context (Rehkugler & Schenek, 2001).

The derivation of the categorization of the influencing factors for underpricing and overpricing is based on the classification of

Bramhoff (2014), Engelen and van Essen (2010), Hsieh (2012), and Katti and Phani (2016). From this classification, three categories can be identified that are of particular importance in relation to capital markets: 1) stakeholder-specific influencing factors, 2) issue-specific factors and 3) stock market-related factors. Furthermore, three further subcategories of variables were formed within each of the first three categories. Stakeholder-specific influencing factors include the subcategories: the reputation of stakeholders, other parties involved in the transaction and management and owners. Issue-specific factors include the subcategories: the issue structure, the issue type, and the issuance agreement. Stock market-related factors include the subcategories: development of stock and IPO markets, regulatory standards, and country-specific stock market factors.

The institutional frameworks of IPO in the U.S. and China and their historical development differ significantly. Consistent with other studies by Cheung, Ouyang, and Tan (2009), Ge et al. (2019), Tanyeri, Öztürkkal, and Tırtıroğlu (2021), Rathnayake et al. (2019) and Xu, Liang, and Song (2018), it is, therefore, crucial for the interpretation to take into account the differences in institutional frameworks, their changes, and market developments.

The U.S. follows the common law legal system, which maximizes the role of the market in regulating economic affairs and limits the role of the state. Information disclosure is strictly regulated and relatively transparent compared to other countries. Companies are primarily in free float, and institutional owners are usually the predominant ownership group (Miloud, 2019). Listing requirements on each U.S. exchange include financial thresholds and other quantitative benchmarks, as well as corporate governance requirements. Dual-class shares are permitted in the exchanges. Therefore, there are multiple share classes, with equity securities generally divided into Class A and Class B shares. The different classes have different fees, dividends, divestment rights, and voting rights, although these tend not to have acquisition restrictions on foreigners comparable to those in China.

IPOs in the United States of America are subject to federal laws and regulations and are overseen by the Securities and Exchange Commission (SEC). The main rules and regulations are contained in the Securities Act and the Exchange Act. In the U.S., the price is formed primarily through the book-building process.

The People's Republic of China is a country with strong central state power. In the 1990s, increasingly implemented market-oriented economic reforms gave the market a more substantial and fundamental role in distributing economic resources. However, maintaining some control over critical and strategic resources throughout the country, including large state-owned enterprises (SOEs), continued to be a central pillar of economic policy. The market was thus able to exert only limited control over companies that underperformed in their industry, as some market activities still required government approval. The change in economic policy resulted in the restructuring of some SOEs into joint-stock companies, which were then brought to the Chinese capital market. This resulted in the majority of China's listed companies. The disclosure of corporate information has often been criticized as non-transparent and, in some cases, unreliable (Miloud, 2019).

In China, tradable shares are currently classified according to their availability to owners depending on their residence — domestic (A) or foreign (B, H, and N) shares. But the existing classification underwent several changes in China's capital market history. Since the reform was enforced in 2005, the distinction between tradable and non-tradable shares (NTS) has been eliminated. Until early 2005, about two-thirds of China's stock market consisted of NTS, which kept control of many listed Chinese companies firmly in state hands. NTS shares were not entitled to be publicly traded, severely limiting price development and market mechanisms. Thus, among other things, the reform increased liquidity and thus efficiency in the stock market (Su & Yu, 2015). The China Securities Regulatory Commission (CSRC) is the central government body for centralized and unified regulation of the national securities market. Before 2001, there was an administrative approval system that set an annual quota for the issuance of new shares (Chi & Padgett, 2005). The quota was divided among provinces and state industrial commissions according to criteria that supported regional or industrial development goals and took into account the balance between provinces and industries (Chi & Padgett, 2005). In 2001, the quota system was replaced by the Offering Review and Approval System (Zhou & Zhou, 2010). The new system provided the opportunity for investment banks or the underwriting banks to recommend companies with the requirements to the CSRC for IPO approval (Zhou & Zhou, 2010). However, the independent Public Offering Review Committee (Review Committee) makes the decision formally (Zhou & Zhou, 2010). This committee consists of representatives from the CSRC, the stock exchange, and outside experts (Zhou & Zhou, 2010). Thus, according to Tian (2011), high restrictions on annual issuance volume and issuers, as well as strong political influence, remain. In addition, the government has relaxed its control over the number of companies allowed to go public, making private companies more likely to go public than just SOEs (Ritter, 2011).

Prior to 1999, the issue price was prescribed by the CSRC through a fixed price procedure, which had to be based on a price-to-earnings (P/E) multiplier. This procedure led to massive underpricing of new issues (Cheung et al., 2009). In 2005, the existing pricing mechanism was replaced by a modified form of book building and established as the standard (Cheung et al., 2009; Zhou & Zhou, 2010). The established method of online/offline book building is similar to the book building method of the U.S. market (Ma & Faff, 2007; Gao, 2010). In the recent reform in 2009, further restrictions on pricing, subscription, placement, and book building were established (Cheung et al., 2009). Until 1999, equity rights were allocated by a simple lottery among share buyers. In 1999, adjustments and reforms were gradually made to the allocation process. Since May 2002, investors with existing secondary market positions have been eligible to preferentially subscribe to the newly issued shares (Su & Yu, 2015). In the case of oversubscription,

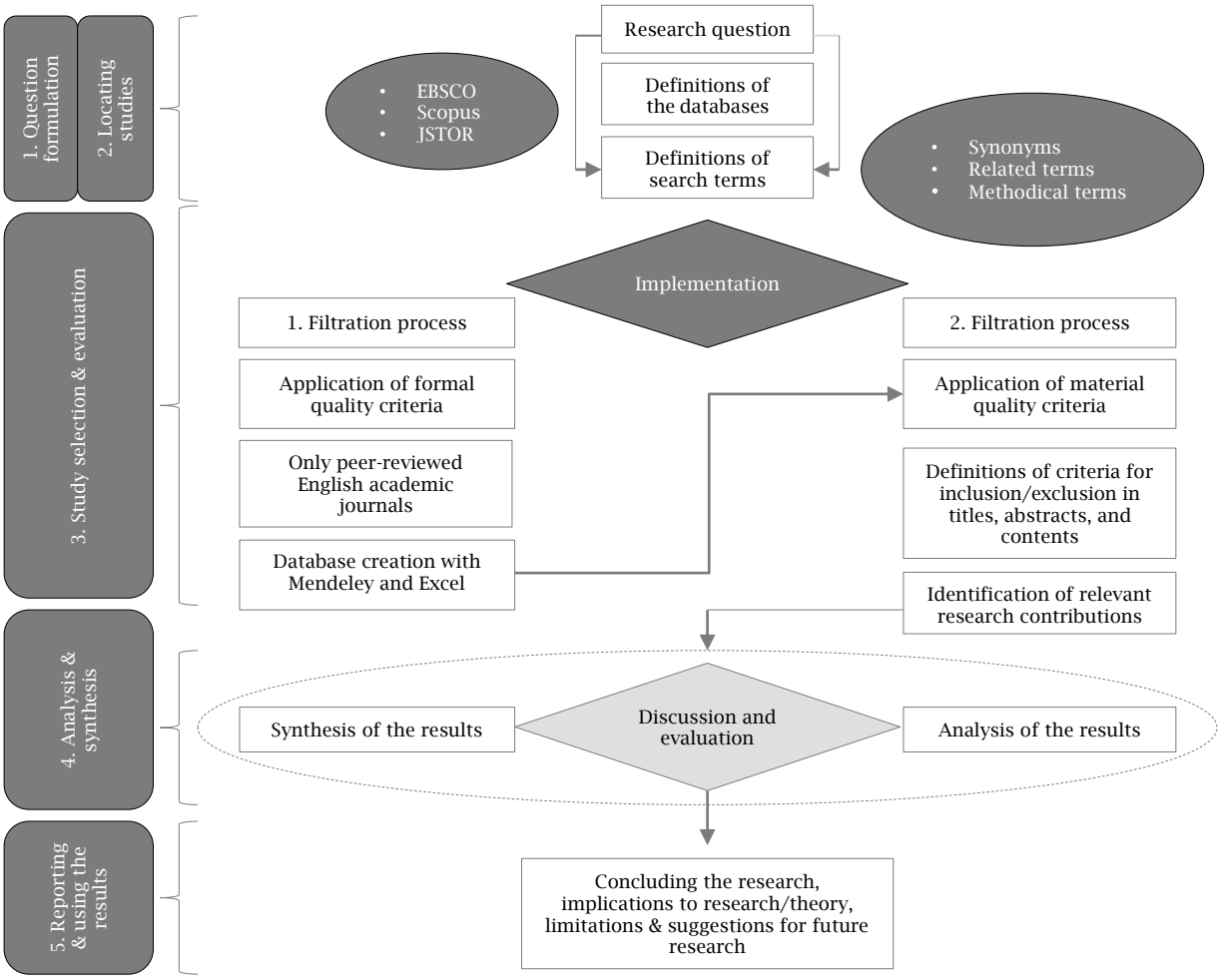
the market value-based lottery mechanism is applied; in undersubscription, the remaining shares are sold to the public through the online offering (Gannon & Zhou, 2008). Despite these reforms, the investor allocation rate is still referred to as the lottery success rate (Su & Yu, 2015).

3. METHODOLOGY

A systematic literature review is a well-established method that provides a transparent and reproducible process of selecting, analyzing, and reporting research that has already been conducted on a particular topic (Cook, Mulrow, & Haynes, 1997; Denyer & Tranfield, 2009). Consequently, the systematic literature review distinguishes itself fundamentally from the narrative literature review by a comprehensive and potentially more unbiased search (Massaro, Dumay, & Guthrie, 2016; Tranfield et al., 2003). Accordingly, the method is suitable for comparing and conceptually linking various empirical studies with a comprehensive spectrum of different variables and multiple perspectives of the return on the IPO phenomena. We follow the structured approach outlined by Tranfield et al. (2003) and further elaborated by Denyer and Tranfield (2009) and Randolph (2009).

According to them, the applied review process can be divided into five key steps: 1) question formulation (planning the review), 2) locating studies, 3) study selection and evaluation, 4) analysis and synthesis, and 5) reporting the evidence and applying the information. The procedure used for our applied systematic literature review is summarized in Figure 1.

Figure 1. Methodology of the applied systematic literature review



Source: Own illustration based on Becker, Ulrich, and Stradtmann (2018).

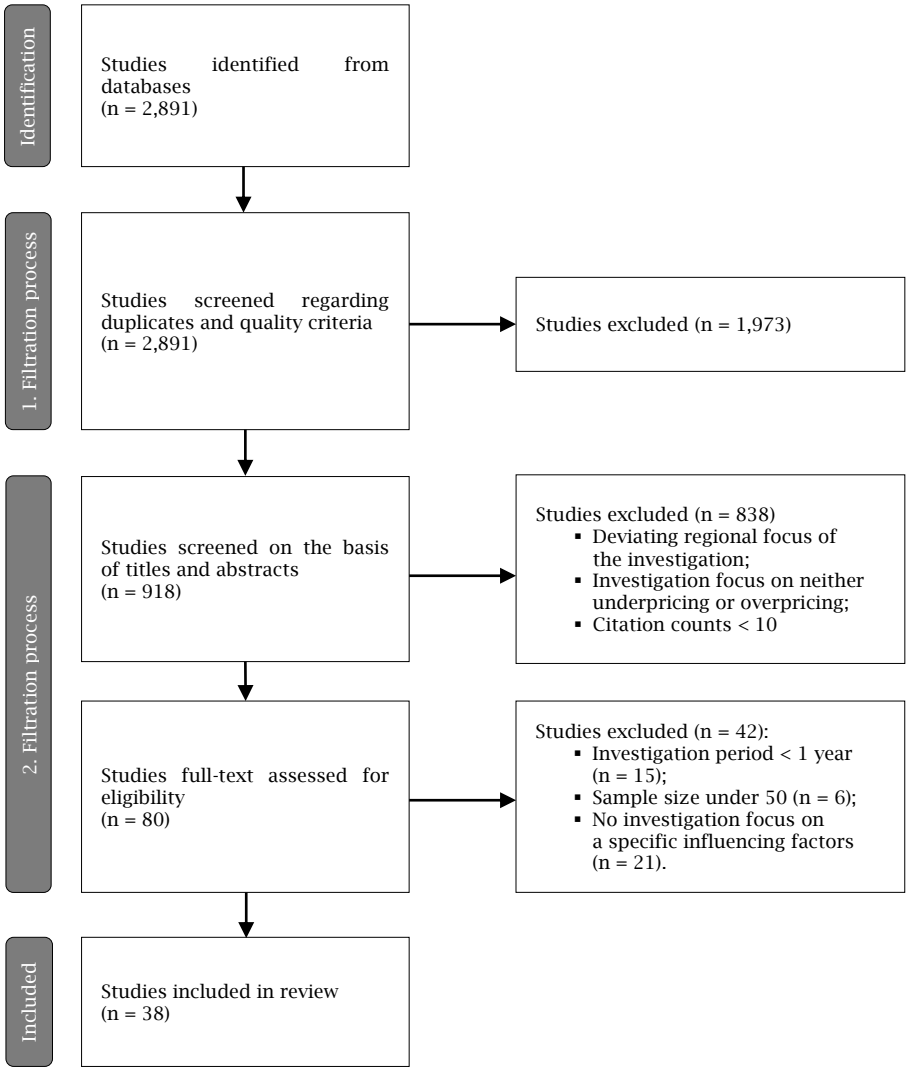
Three different databases, EBSCO, Scopus, and JSTOR, were selected. The literature used in the review was limited to peer-reviewed academic journals. Relevant keywords were derived in an intersubjectively comprehensible manner from the theoretical foundations of the pre-study phase. Thus, the terms, initial public offering, underpricing, overpricing, China, the United States of America, as well as synonyms and variations were used for the investigation. This resulted in the search string, ((“initial public offer*” *or* “IPO”) *and* (“overpric*” *or* “*valuation” *or* “*performance” *or* “underpric*” *or* “initial return”) *and* (“chin*” *or* “United States” *or* “America*” *or* “U.S.*” *or* “US*”)). The search was limited to titles, abstracts, and keywords.

To refine the search and keep the number of irrelevant studies as small as possible, certain formal quality criteria were used for the filtering procedure. The formal quality criteria included defining the publication type as “academic journals”,

specifically "scholarly (peer-reviewed) journals" in English. The period studied was from January 1986 to May 2020. The starting year of 1986 was chosen because prior to that year, empirical studies on the topic were hardly recorded as a pre-screening in our systematic literature review. In addition, material quality criteria were determined to exclude or include substantively appropriate or inappropriate studies (Fink, 2019). The relevant material quality criteria are the title, abstract, and usage in the scientific community (citations). The initial search found 1,235 articles in EBSCO, 977 in Scopus, and 679 in JSTOR.

The first filtration step was to reduce the search results by removing duplicates; the quality criteria were empirical, English-language academic journals that are peer-reviewed (Jia, Ritter, Xie, & Zhang, 2018). The second step was to reduce the search results by analyzing the title of each article and selectively reviewing the abstracts. Some articles were excluded from the sample because they were not aligned with the research objective of underpricing or overpricing in the U.S. or the Chinese capital market. To further specify, the exclusion criteria were a divergent regional focus of the study, a study focus that did not relate to either under or over assessment, or the number of citations was below 10. The initial search results were reduced by over 97%; thus, the number of articles became 80. A holistic text analysis was conducted on the 80 articles, and additional 42 articles were identified and judged unfit for the analysis. The exclusion criteria included an investigation period below one year, a sample size below 50, or lacking investigations focus on a specific investigation factor. The final sample that passed the selection process comprised 38 articles. The procedure used for the filtration process is summarized in Figure 2.

Figure 2. Flow diagram of the filtration process



In order to ensure a structured, consistent, and comprehensive overview and assessment across studies, a classification framework based on the criteria named below was undertaken in the studies in accordance with other systematic literature reviews (SLRs) (Bartocci, Grossi, Mauro, & Ebdon, 2022; Mattei, Grossi, & Guthrie, 2021; Paoloni, Mattei, Dello Strologo, & Celli, 2020). The resulting dimensions were included in the analysis scheme:

1. Article key facts — specific information about the article (title of the article, author(s) name(s), name of the journal, publication date, number of citations).

2. Data parameters — specific information about the sample (size, investigation period, stock type).

3. Regional focus — the region on which the survey data is based, or which was the explicit subject of the survey:

a) China — all stock markets in mainland China as well as Taiwan and Hong Kong;

b) the U.S. — all stock markets in the U.S.;

c) several countries — including at least the Chinese or the U.S. market.

4. Researched IPO return phenomena:

a) underpricing — referring to a positive IPO return;

b) overpricing — referring to a negative IPO return.

5. Influencing factors:

a) stakeholder variables — the relationship between IPO returns and specific stakeholders, such as transaction participants, the board of directors, or the owners:

i. *reputation of stakeholders* — reputation of the issuing bank, the investment company(ies), the analyst, the auditor, or the board members;

ii. *transaction participants* — issuing banks, analysts, investment companies such as venture capital (VC) and private equity (PE), as well as business angels (BA);

iii. *management and ownership structure* — the experience or size of the board, the ownership structure, e.g., in the case of SOEs, and their changes through the sale of large blocks of shares;

b) issuance variables — variables that influence the correlations between IPO return and the type of issue, the issuance agreement, or the issue structure:

i. *issue structure* — allotment and retention rates;

ii. *issue type* — the size of the issue (issue volume), the type of shares, the type of placement, and the type of listing;

iii. *issuance agreement* — between the underwriter and the company, such as the underwriting procedure used, the determination of the issue price, the under-writer's obligation to underwrite shares, and selling restrictions for existing shareholders;

c) stock market variables — variables related to the circumstances of the (stock) market under investigation, such regulatory standards, the market development itself, and country-specific factors:

i. *market development* — the development of the stock market, the IPO market, or the economic environment, such as the bull market during the internet bubble and the activity level of the mergers and acquisitions (M&A) market;

ii. *regulatory standards* — transparency, investor protection, quality of the legal system, and other regulatory measures;

iii. *country-specific stock market factors* — country-specific policies such as privatization, price setting, and allocation mechanisms;

d) other variables — all variables that cannot be assigned to the last three categories.

6. Time horizon — the period between the initial issue on the primary market and the setting of the fair value for the calculation:

a) short-term (< 10 days);

b) long-term (> 10 days).

7. Method — method used to calculate the IPO return:

a) OLS (ordinary least squares);

b) BHR (buy-and-hold returns);

c) BHAR (buy-and-hold abnormal returns);

d) CAR (cumulative abnormal return);

e) MAAR (market adjusted abnormal return);

f) other.

4. RESULTS

An overview of the articles analyzed in the systematic literature review is provided in Table 1.

Table 1. Overview of the studies reviewed (Part 1)

Study	*Region*	*Sample*	*Period*	*Influencing factor category*	*Correlation*
Affleck-Graves, Hegde, Miller, and Reilly (1993)	The U.S.	1,078	1983–1987	SMV: Regulatory standards	(SMV) ST, UP | High transparency in listing standards: negative*
Aharony, Lee, and Wong (2000)	China	83	1992–1995	SMV: Market development	(SMV) LT, OP | B-share: positive** (SMV) LT, OP | State-unprotected industries: positive*
Arthurs, Busenitz, Hoskisson, and Johnson (2009)	The U.S.	640	1990–1994, 2001–2005	SHV: Transaction stakeholders IV: Issuance agreement	(SHV) ST, UP | Relationship with VC: positive** (IV) ST, UP | Lock-up period: n
Banerjee, Dai, and Shrestha (2011)	Global: 36 countries (including the U.S. and China)	8,776	2000–2006	SHV: Transaction stakeholders SMV: Regulatory standards and country-specific factors	(SHV) ST, UP | Analyst reporting: positive** (SMV) ST, UP | Investor protection: negative* (SMV) ST, UP | Home-bias-effect: positive**
Booth and Chua (1996)	The U.S.	2,151	1977–1988	SHV: Reputation IV: Issuance agreement SMV: Market development	(SHV) ST, UP | Reputation issuing bank: positive** (IV) ST, UP | Best-effort IPO: n (SMV) ST, UP | IPO market: negative**
Boulton, Smart, and Zutter (2010)	The U.S.	6,156	1980–2001	SMV: Market development	(SMV) ST, UP | M&A activity: positive**

Table 1. Overview of the studies reviewed (Part 2)

Study	*Region*	*Sample*	*Period*	*Influencing factor category*	*Correlation*
Boulton, Smart, and Zutter (2011)	Global: 37 countries (including the U.S. and China)	10,045	1998–2008	SHV: Reputation OV: Earnings management	(SHV) ST, UP | Reputation issuing Bank: negative[x] (OV) ST, UP | Earnings management: positive**
Carey and Steen (2006)	China (Hong Kong)	153	1995–1999	SMV: Market development	(SMV) ST, UP | Hot issue market: positive*
Carter, Dark, and Singh (1998)	The U.S.	2,292	1979–1991	SHV: Reputation and transaction stakeholders	(SHV) LT, OP | VC funded: negative** (SHV) LT, OP | Reputation issuing bank: positive** (SHV) LT, OP | Reputation issuing bank: positive**
Certo, Daily, and Dalton (2001)	The U.S.	748	1990–1998	SHV: Management and ownership structure and reputation	(SHV) ST, UP | Management board size: negative* (SHV) ST, UP | Board independence/experience: positive** (SHV) ST, UP | Reputation board of directors: negative[x]
Chan, Wang, and Wei (2004)	China	570 A-shares, 39 B-shares	1993–1998	SHV: Management and ownership structure IV: Issuance structure SMV: Country-specific factors	(SHV) ST, UP | Participation regional population: positive[x] (IV) ST, UP | Time difference price publication and trade: positive** (IV) ST, UP | Issue volume: positive** (SMV) ST, UP | Privatization: n
Chang, Chen, Chi, and Young (2008)	China	891	1996–2004	SMV and IV: Issuance structure	(SMV) & (IV) ST, UP | Lottery ratio: negative***
Chen, Firth, and Kim (2004)	China	701 A-shares, 117 B-shares	1992–1997	SHV: Management and ownership structure IV: Issuance structure SMV: Country-specific factors	(SHV) ST, UP | Government participation: positive* (IV) ST, UP | Time difference price publication and trade: positive** (SMV) ST, UP | A-/B-share: positive**
Chi and Padgett (2005)	China	749	1996–1997	SHV: Management and ownership structure IV: Issuance type SMV: Market development OV: Industry	(SHV) ST, UP | Government participation: negative** (SHV) LT, OP | Government participation: positive* (IV) LT, UP | Issue volume: positive** (SMV) LT, UP | A-share: positive*** (OV) LT, UP | High-tech industry: positive**
Engelen and van Essen (2010)	Global: 21 countries (including the U.S. and China)	2,920	2000–2005	SMV: Regulatory standards	(SMV) ST, UP | Quality of the legal system: negative** (SMV) ST, UP | Investor protection: negative*
Fan et al. (2007)	China	790	1993–2001	SHV: Management and ownership structure	(SHV) LT, OP | CEO political connection: 40 days positive[x]; 60 days: positive*; 1 year: positive***
Francis, Hasan, Lothian, and Sun (2010)	The U.S.	413	1985–2000	SMV: Regulatory standards	(SMV) ST, UP | High transparency: negative**
Habib and Ljungqvist (2001)	The U.S.	1,357	1991–1995	SHV: Reputation IV: Issuance structure	(SHV) ST, UP | Reputation issuing bank: positive** (IV) ST, UP | Retention rate: positive**
Hanley (1993)	The U.S.	1,373	1983–1987	IV: Issuance agreement	(IV) ST, UP | Adjustment issue price: positive**
Huyghebaert and Quan (2009)	China	521	1994–2005	SMV: Market development, country-specific factors SHV: Management and ownership structure	(SMV) ST, UP | Stock market: positive** (SMV) ST, UP | IPO market: n (SHV) ST, UP | Share packages of SOEs: positive***
Jia, Ritter, Xie, and Zhang (2019)	China	859	2009–2012	SMV: Country-specific factors SHV: Transaction stakeholders	(SHV) ST, UP | Post-optimism: positive*** LT, OP | Post-analyst coverage: positive*** LT, OP | Post-optimism: positive*** (SMV) LT, OP | Offer price revisions (China): negative***
Krigman, Shaw, and Womack, (1999)	The U.S.	1,232	1988–1995	SHV: Transaction stakeholders SMV: Market development	(SHV) LT, OP | Investor behavior (flip): positive ** (SMV) LT, OP | Cold issue market: n Hot issue market: positive* Extra-hot issue market: negative**
Liu and Ritter (2011)	The U.S.	7,319	1980–2008	SHV: Reputation	(SHV) ST, UP | Reputation issuing bank: positive** (SHV) ST, UP | Reputation analyst: positive*

Table 1. Overview of the studies reviewed (Part 3)

Study	*Region*	*Sample*	*Period*	*Influencing factor category*	*Correlation*
Loughran and Ritter (1995)	The U.S.	4,753	1970–1990	OV: Book-to-market value	(OV) LT, OP | Book-to-market value: positive**
Loughran and Ritter (2004)	The U.S.	5,990	1980–2003	SHV: Reputation	(SHV) ST, UP | Reputation issuing bank: positive**
Megginson and Weiss (1991)	The U.S.	320	1983–1987	SHV: Reputation and transaction stakeholders	(SHV) ST, UP | VC financed: negative** (SHV) ST, UP | Reputation issuing bank: negative**
Michaely and Shaw (1994)	The U.S.	947	1984–1988	SHV: Reputation SMV: Country-specific factors	(SHV) ST, UP | Reputation issuing bank: positive** (SHV) LT, OP | Reputation issuing bank: negative** (SMV) ST, UP | MLP IPO: negative**
Rajan and Servaes (1997)	The U.S.	2,752	1975–1987	SMV: Market development	(SMV) LT, OP | Hot issue market: positive*
Rangan (1998)	The U.S.	230	1987–1990	OV: Earnings management	(OV) LT, OP | Discretionary accruals: negative*
Ritter (1991)	The U.S.	1,526	1975–1984	SMV: Market development	(SMV) LT, OP | Hot issue market: positive^{x} (SMV) LT, OP | Hot issue market: negative*
Schenone (2004)	The U.S.	303	1998–2000	SHV: Transaction stakeholders	(SHV) ST, UP | VC financed: positive*
Smart and Zutter (2008)	The U.S.	2,622	1990–1998	IV: Issuance type	(IV) ST, UP | Dual-class IPO: negative**
Purnanandam and Swaminathan (2004)	The U.S.	2,288	1980–1997	OV: Earnings management	(OV) LT, OP | Accruals: positive**; LT, OP | Growth forecasts: positive**
Piotroski and Zhang (2014)	China	28,152	2001–2008	SHV: Transaction stakeholders	(SHV) LT, UP | Political promotions of the issuer positive**
Teoh, Welch, and Wong (1998)	The U.S.	3,197	1980–1992	OV: Earnings management	(OV) LT, OP | Restructuring provisions: positive*
Tian (2011)	China	1,324	1993–2004	IV: Issuance structure SHV: Management and ownership structure SMV: Country-specific factors OV: Company age	(SHV) ST, UP | State owner: positive^{x} (IV & SMV) ST, UP | Allocation quota: negative** (SMV) ST, UP | Price cap: positive*** (OV) ST, UP | Company age: positive*
Tinic (1988)	The U.S.	134	1966–1971	SHV: Reputation	(SHV) ST, UP | Reputation issuing bank: negative*
Wang (2005)	China	747	1994–1999	SHV: Management and ownership structure	(SHV) LT, OP | Government participation: n (SHV) LT, OP | Share scattering: n

Note: SHV: Stakeholder variables, SMV: Stock market variables, IV: Issuance variables, OV: Other variables, OP: Overpricing, UP: Underpricing, ST: Short-term (< 10 days), LT: long-term (> 10 days); n: no correlation. ^{x} *= p < 0.1, * = p < 0.05, ** = p < 0.01, *** = p < 0.001.*

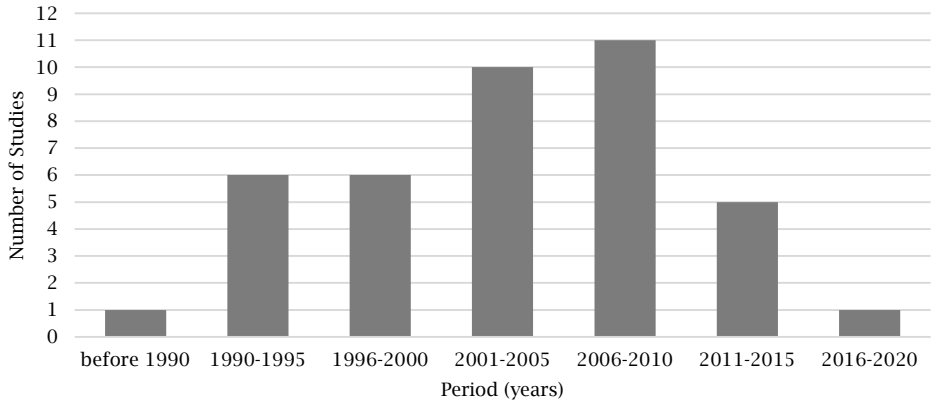
The following empirical data analysis refers to the following four fields of investigation:

1) publication dates of the studies;
2) aggregation of the investigation periods;
3) regional focus of the investigations;
4) categorization of the investigations according to the influencing factors.

1) Publication dates of the studies

A total of 38 articles were analyzed. The period of publication of the articles was from 1988 to 2019 (Figure 3). Most studies were conducted after the year 2000, reflecting the increasing attention to this topic after the dotcom bubble.

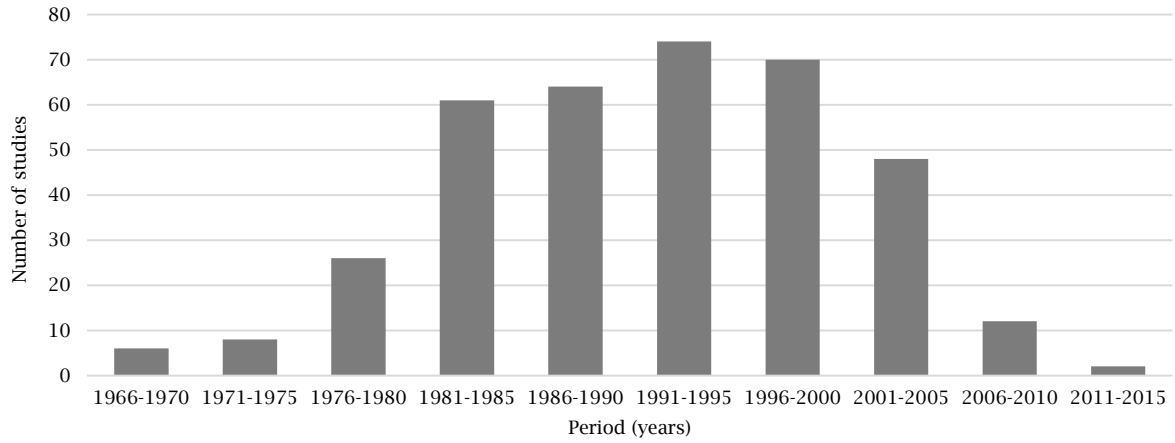
Figure 3. Publication dates of the studies



2) Aggregation of the investigation periods

The study periods are aggregated in Figure 4. Most studies are based on investigations from 1980 to 2005, which can be traced back to the data from the publications and the popularity and presence of the returns on the IPO phenomena during such periods.

Figure 4. Aggregation of the sample investigation years



3) Regional focus of the investigations

Out of the 38 articles, 23 (61%) focus on the U.S. market; 12 (32%) are about the Chinese market, and three (8%) have a worldwide research reference (including China and the U.S.). The increasing regional focus on the U.S. capital market is due to the long-term relevance of the market and the number of IPOs. The focus on the Chinese market has to do with advancing time with its exponential growth and China's rise as an economic power. Nevertheless, the sample represents both capital markets, reflecting the theme of their international comparison.

4) Categorization of the investigations according to the influencing factors

The articles were categorized according to the influencing factors examined in the sampled studies. Some of the articles refer to several influencing factor dimensions. Twenty-two (37%) articles refer to stakeholder-specific variables, twenty (34%) to stock market-specific variables, ten (17%) to issuance-specific variables, and seven (12%) to other variables.

The investigated influencing factors in the respective capital markets and the resulting findings set out the differential spatial and temporal significance of the underlying influencing factors and superordinate categories of the issue return phenomena. Table 2 provides a comparative overview of the different influencing factors regarding the U.S. and the Chinese capital markets.

Table 2. Regional comparison (China and the U.S.) of the studies reviewed (Part 1)

		The U.S.	*China*	*The U.S. and China*
Stakeholder variables	***Underpricing***	Arthurs et al. (2009) ST | Relationship with VC: positive** Booth and Chua (1996) ST | Reputation issuing bank: positive** Boulton et al. (2010) ST | M&A activity: positive** Carter et al. (1998) LT | VC funded: negative**; LT | Reputation issuing bank: positive**; LT | Reputation issuing bank: positive** Certo et al. (2001) ST | Management board size: negative*; ST | Board independence/experience: positive**; ST | Reputation board of directors: negative[x] Habib and Ljungqvist (2001) ST | Reputation issuing bank: positive** Liu and Ritter (2011) ST | Reputation issuing bank: positive**; ST | Reputation analyst: positive* Loughran and Ritter (2004) ST | Reputation issuing bank: positive** Megginson and Weiss (1991) ST | VC financed: negative**; ST | Reputation issuing bank: negative** Michaely and Shaw (1994) ST | Reputation issuing bank: positive** Tinic (1988) ST | Reputation issuing bank: negative*	Chan et al. (2004) ST | Participation regional population: positive[x] Chang et al. (2008) ST | Lottery ratio: negative*** Chen et al.(2004) ST, UP | Government participation: positive* Chi and Padgett (2005) ST | Government participation: negative** Huyghebaert and Quan (2009) ST | Share packages of SOEs: positive*** Jia et al. (2019) ST | Post-optimism: positive** Schenone (2004) ST | VC financed: positive* Piotroski and Zhang (2014) LT | Political promotions of the issuer positive** Tian (2011) ST | State owner: positive[x]	Boulton et al. (2011) ST | Reputation issuing bank: negative[x] Banerjee et al. (2011) ST | Analyst reporting: positive**

Table 2. Regional comparison (China and the U.S.) of the studies reviewed (Part 2)

		The U.S.	*China*	*The U.S. and China*
Stakeholder variables	*Overpricing*	Krigman et al. (1999) LT | Investor behavior (flip): positive** Michaely and Shaw (1994) LT | Reputation issuing bank: negative**	Chi and Padgett (2005) LT | Government participation: positive* Fan et al. (2007) LT | CEO political connection: 40 days: positive^{x}; 60 days: positive*; 1 year: positive*** Jia et al. (2019) LT | Post-analyst coverage: positive***; LT | Post-optimism: positive*** Wang (2005) LT | Government participation: n; LT | Share scattering: n	
Stock market variables	*Underpricing*	Affleck-Graves et al. (1993) ST | High transparency in listing standards: negative* Booth and Chua (1996) ST | IPO market: negative** Francis et al. (2010) ST | High transparency: negative** Michaely and Shaw (1994) ST | MLP IPO: negative**	Carey and Steen (2006) ST | Hot issue market: positive* Chan et al. (2004) ST | Privatization: n Chen et al. (2004) ST | A-/B-share: positive** Chi and Padgett (2005) LT | A-share: positive*** Huyghebaert and Quan (2009) ST | Stock market: positive**; ST | IPO market: n Jia et al. (2019) ST | Offer price revisions (China): negative*** Tian (2011) ST | Allocation quota: negative**; ST | Price cap: positive***	Engelen and van Essen (2010) ST | Quality of the legal system: negative** ST | Investor protection: negative* Banerjee et al. (2011) ST | Investor protection: negative* ST | Home-bias-effect: positive**
	Overpricing	Krigman et al. (1999) LT | Cold issue market: n; Hot issue market: positive*; Extra-hot issue market: negative** Rajan and Servaes (1997) LT | Hot issue market: positive* Ritter (1991) LT | Hot issue market: positive^{x}; LT | Hot issue market: negative*	Aharony et al. (2000) LT | B-share: positive**; LT | State-unprotected industries: positive *	
Issuance variables	*Underpricing*	Arthurs et al. (2009) ST | Lock-up period: n Booth and Chua (1996) ST | Best-effort IPO Habib and Ljungqvist (2001) ST, UP | Retention rate: positive** Hanley (1993) ST | Adjustment issue price: positive** Smart and Zutter (2008) ST | Dual-class IPO: negative**	Chan et al. (2004) ST | Time difference price publication and trade: positive**; ST | Issue volume: positive** Chang et al. (2008) ST | Lottery ratio: negative*** Chen et al. (2004) ST | Time difference price publication and trade: positive** Chi and Padgett (2005) LT | Issue volume: positive** Tian (2011) ST | Allocation quota: negative**	
	Overpricing			
Other variables	*Underpricing*		Chi and Padgett (2005) LT | High-tech industry: positive**	Boulton et al. (2011) ST | Earnings management: positive**
	Overpricing	Loughran and Ritter (1995) LT | Book-to-market value positive** Rangan (1998) LT | Discretionary accruals: negative* Purnanandam and Swaminathan (2004) LT | Accruals: positive**; LT | Growth forecasts: positive**; Teoh, Welch, and Wong (1998) LT | Restructuring provisions: positive*	Tian (2011) ST | Company age: positive*	

Note: SHV: Stakeholder variables, SMV: Stock market variables, IV: Issuance variables, OV: Other variables, OP: Overpricing, UP: Underpricing, ST: Short-term (< 10 days), LT: long-term (> 10 days); n: no correlation. ^{x} *= p < 0.1, * = p < 0.05, ** = p < 0.01, *** = p < 0.001.*

4.1. Stakeholder-specific factors

4.1.1. Reputation of stakeholders

Stakeholder-specific factors were examined in 23 of the 38 papers (Table 2). The empirical studies on issuing bank reputation as a component of stakeholder-specific factors do not come to a uniform conclusion. Thus, positive and negative correlations between issue return and issue bank reputation have been recorded. For example, Tinic (1988), Megginson and Weiss (1991), and

Boulton et al. (2011) show a negative correlation between underpricing and the choice of an issuing bank with an increasing reputation. Meanwhile, several researchers (Habib & Ljungqvist, 2001; Loughran & Ritter, 2004; Liu & Ritter, 2011; Booth & Chua, 1996; Michaely & Shaw, 1994; Carter, Dark, & Singh, 1998) find an increasing underpricing with the choice of a reputable underwriter. Studies demonstrating a negative correlation often draw on the certification role of the issuing bank as an explanation (Boulton et al., 2011; Megginson & Weiss, 1991). In this regard, Habib and Ljungqvist (2001) reveal that speculative and thus high-risk firms choose the most reputable underwriting banks, which in principle, have high underpricing anyway. Loughran and Ritter (2004) explain the negative correlation from the perspective of issuers, who accept high positive IPO returns to benefit from later payments and good media coverage by analysts.

In the study by Booth and Chua (1996), a distinction was made between firm commitment IPOs and best-effort IPOs. While information acquisition costs can be reduced by supporting the issuing bank's reputation in firm commitment IPOs, this reduction is irrelevant to best-effort IPOs, eliminating the positive effect of certification. Liu and Ritter (2011) address the relationship between the reputation of analysts involved and its impact on underpricing. They demonstrate a positive significant correlation for the U.S. capital market during the 1980–2008 period. Liu and Ritter (2011) attribute the correlation to the issuer's willingness to accept the cost of a reputable analyst in the form of underpricing. Likewise, they find a correlation between a VC funded firm associated with a reputable analyst and an increased underpricing of approximately 20% for the U.S. capital market during the 1980–2008 period. Most recently, Certo et al. (2001) test the association of board member reputation with the level of underpricing. They find a weak negative relationship for the U.S. capital market during the 1990–1998 period. Studies of long-term performance have also been able to produce significant relationships. Michaely and Shaw (1994) and Carter, Dark, and Singh (1998) find that for the U.S. capital market between 1984–1988 and 1989–1991, long-term market-adjusted returns are on average less negative for IPOs to the extent that more reputable underwriters issue them, respectively.

4.1.2. Transaction participants

In the stakeholder subcategory, transaction participants, Arthurs et al. (2009) and Schenone (2004) focus on underwriting banks. For example, Schenone (2004) (sample: 306 companies that went public between 1998–2000 in the U.S.; IPO return time horizon: first-day price run-up; method: OLS; data collection: Securities Data Company (SDC), Center for Research in Security Prices (CRSP) and New York Stock Exchange Trade and Quote (NYSE TAQ) database) shows that for the U.S. market during the 1998–2000 period, the relationship between an underwriting bank and an issuer in the run-up to IPO impacts underpricing. The issuer's relationship with a bank with solid underwriting expertise in the run-up to the IPO can reduce underpricing by up to 17%. In addition, issuers who have a pre-IPO loan relationship with a bank with underwriting expertise are identified to have up to 16% low underpricing.

Arthurs et al. (2009) find that a relationship between an underwriter and a VC firm with an ownership stake in the issuer results in high underpricing in the U.S. capital market between 1990–1994 and 2001–2005. In contrast to Schenone (2004), small information asymmetries cannot explain positive underwriting returns in Arthurs et al. (2009). If short-term common aspirations, such as risk minimization of two transaction participants come to the fore, then this behavior induces underpricing.

The study by Banerjee et al. (2011) looks at analyst reporting and its correlation with the level of undervaluation. It covers a total of 36 countries, including China and the U.S. They bring out that IPOs in countries with high analyst coverage have generally low positive issue returns. In this context, reporting is linked to the extent of information asymmetries in a country. This goes hand in hand with China's generally lower market orientation compared to the U.S., which is why China is also assumed to have lower analyst coverage and thus higher information asymmetry.

Another significant area of investigation in the studies relates to the role of investment companies, such as VC firms, among others. Carter et al. (1998) and Megginson and Weiss (1991) argue that for IPOs in the U.S. market between 1979–1991 and 1993–1987, underpricing is low insofar as a VC firm is involved in the issuer, respectively. Carter, Dark, and Singh (1998) also cite the certification role of the VC firm involved as an explanation.

By contrast, Arthurs et al. (2009) and Schenone (2004) find opposite results for the U.S. market during the 1990–1994, 1998–2000, and 2001–2005 periods, demonstrating that companies financed by VC firms have high IPO returns. According to Schenone (2004), the reason is because of the potentially increased risk-taking of VC funded firms. Krigman et al. (1999) reveal that for the U.S. market during the 1988–1995 period, a high-level flipping activity, that is, the practice of buying IPO shares in the primary market and selling them directly in the secondary market at the start of trading, implies strong heterogeneous investor sentiment. On the basis of this finding, the authors are able to demonstrate that IPOs with a high share of flipping activity have a significantly worse price performance within one year than those with a low-level flipping activity.

4.1.3. Management and ownership structure

The last stakeholder subcategory refers to the management and ownership structure of issuing companies. Huyghebaert and Quan (2009) demonstrate a significant positive correlation between equity stakes owned by SOEs and positive issuance returns for the Chinese capital market during the 1994–2005 period. Tian (2011) and Chen et al. (2004) confirm a positive correlation between the participation of the Chinese state as an owner and underpricing during the 1993–2004 and 1992–1997 periods, respectively. The investigation period for the Chinese market before 2005 is particularly relevant for this

influencing factor in that until 2005, the share of state participation in companies was particularly high. With the 2005 reform regarding the NTS, the Chinese market, state participation, and thus the efficiency of the market changed significantly. Chan et al. (2004) demonstrate a positive correlation between the level of underpricing and the number of equity investors coming from the same region as the issuer for the Chinese market in 1993–1998. They reason that the number of equity investors in a region is an indicator of the region's wealth; as a result, firms from wealthier regions face more competition in going public and thus offer higher premiums to investors as an incentive. They also cite the home bias effect as an explanation here.

Meanwhile, Certo et al. (2001) test the influences of board size and board independence on underpricing in the U.S. capital market over the 1990–1998 period. They find no significant influence on underpricing for the first factor but a significant positive correlation for board independence. The reason given is that internally appointed boards may well assess growth potential. Furthermore, Arthurs et al. (2009) demonstrate a significant negative correlation between board member experience and underpricing in the U.S. capital market between 1990–1994 and 2001–2005.

Fan et al. (2007) examine the Chinese capital market during the 1993–2001 period and the extent to which a CEO's political connections (whether the CEO is a current or former government bureaucrat) are associated with the issue of return phenomena. For short- and medium-term observation horizons (1, 40, and 60 days), a significant positive correlation with the level of under-pricing is found. Fan et al. (2007) argue that for a long-term observation horizon (one year), a significant negative correlation exists between companies with politically connected CEOs and negative share price performance (market-adjusted). The political connectedness of the CEO (director) is measured by examining whether he or she is a current or former officer of the central government, a local government, or the military. Three years after going public, companies with politically connected CEOs experience 18% worse stock price performance relative to the market. Chi and Padgett (2003) show that for the Chinese market between 1996 and 1997, companies with increasingly high government ownership underperform in a long term (> 1 year). This relationship is reflected in the very high share of state-owned stakes in companies in China in the overall market and the development of the same.

4.2. Issuance-specific factors

4.2.1. Issue structure

Issuance-related influencing variables have been examined in 10 of the 38 contributions (Table 2). In this context, the subject of investigation of the issue structure as a subcategory is, in particular, the allocation and retention ratios. Habib and Ljungqvist (2001) examine how the retention rate of existing shareholders is related to underpricing. The retention rate relates the number of old shares to the total shares after the IPO and symbolizes the willingness of old shareholders to share the company risk. Habib and Ljungqvist (2001) also find that for the U.S. market in the 1991–1995 period, the positive issue return decreases as the retention rate decreases. The authors justify this finding with the lack of a direct financial disadvantage for existing shareholders, changing the pattern of interest and thus the level of underpricing with an increasing shareholder change. In the study by Chang et al. (2008), the probabilities of share allocation, lottery ratio, and its influence on underpricing are the subjects of the primary investigation. The analysis covers the Chinese market from 1996 to 2004, and the authors are able to demonstrate a significant negative correlation among the allotment ratio, country-specific lottery ratio, and underpricing. During the investigation period, China's legal framework and stock distribution process changed, hence the allotment ration and lottery ratio. The research by Tian (2011) also demonstrates a significant negative correlation between underpricing and allocation ratio in the Chinese capital market during the 1993–2004 period. Chen et al. (2004) and Chan et al. (2004) relate institutional lag, in this context, the listing delay resulting from the period between the issuance of shares and their subsequent listing to underpricing for the Chinese market during the 1992–1997 and 1993–1998 periods. In doing so, they present the listing delay as a measure of issuance risk for which the investor demands a return to compensate for the associated uncertainty of performance within the institutional lag.

4.2.2. Issue type

The issue type, as another subcategory, includes the size of the issue, the type of participation right, the type of listing, and the placement. The results on the influencing factors of this subcategory are partly very specific and cannot generally be transferred internationally since the types of issues are not available everywhere due to the institutional framework conditions, such as dual-class IPOs. Chan et al. (2004) and Chi and Padgett (2005) explore the relationship between issue volume and *ex-ante* uncertainty found by Beatty and Ritter (1986). Here the issue volume is considered a proxy for the *ex-ante* uncertainty of an IPO. Chan et al. (2004) and Chi and Padgett (2005) demonstrate a significant positive relationship between issue volume and underpricing for the Chinese market between 1993–1998 and 1996–1997, respectively. They explain that as the issue volume decreases, *ex-ante* uncertainty increases; thus, the investor is compensated in the form of positive issuance returns. Likewise, they relate issue volume to allotment ratio, lottery ratio, and associated oversubscription in China. Smart and Zutter (2008) address dual-class stock issues, the issuance of two types of shares, which may have, for example, different voting rights and dividend payments, and the impact on IPO underpricing. They find that for the U.S. market during the 1990–1998 period, dual-class stock issues have lower underpricing than single-class IPOs. However, dual-class IPOs often have high issue sizes (Smart & Zutter, 2008).

4.2.3. Issuance agreement

The issuance agreement, the last subcategory, includes agreements between issuers and underwriters, such as pricing procedures, underwriting procedures, or underwriters' stock

underwriting obligations. Hanley (1993) reviews the impact of the issue price adjustment on underpricing. In the study of the U.S. market during the 1983–1987 period, Hanley (1993) shows that pricing adjustments with an increase in the issue price have significantly high positive issue returns. Arthurs et al. (2009) use the lock-up period as the main object of their study. The lock-up period imposes a liquidity constraint on old shareholders and thus *ex-ante* uncertainty. However, the authors fail to find a significant relationship for the U.S. market during the 1990–1994 and 2001–2005 periods.

4.3. Stock market-related factors

4.3.1. Stock market development

The influencing variables related to the stock market have been investigated in 20 of the 38 papers (Table 2). As a stock market subcategory, the market development of the respective IPO market is a common object of investigation in literature with regard to the influence on the issue of return phenomena. Rajan and Servaes (1997) find a significant positive relationship between the error rate of analyst earnings and growth forecasts and the number of IPOs in the U.S. market during the 1975–1987 period. On this basis, Rajan and Servaes (1997) find a significant positive correlation between hot issue markets and negative issue returns within a period of more than one year in the U.S. capital market during the 1975–1987 period. Krigman, Shaw, and Womack (1999) also observe a positive correlation between extra-hot market periods and negative IPO returns within a one-year period in the U.S. capital market during the 1988–1995 period. However, they are unable to demonstrate a significant relationship in cold- and hot-issue markets. Carey and Steen (2006) confirm that for the Hong Kong stock market in 1995–1999, IPOs exhibit high underpricing in the so-called hot issue market phases. Furthermore, Krigman et al. (1999) (sample: 1,232 companies that went public between 1988–1995 in the U.S.; IPO return time horizon: first-day price (offer-to-close) and 12 months; method: OLS and BHAR; benchmark: Nasdaq Composite index, CRSP equal-weighted index, CRSP market capitalization size decile index; data collection: SDC, CRSP, and NYSE TAQ database) investigate the influence of different IPO market phases (i.e., cold, hot, and extra-hot issue markets) on the issue return phenomena in the short and long-term observation horizons. While the authors find an issue return of -1.2% on the first day in cold issue markets in the U.S. capital market, hot and extra-hot issue markets achieve issue returns of 24.4% and 80.3%, respectively.

By contrast, the development of the IPO market itself produces the opposite result. Booth and Chua (1996) can demonstrate a significant negative correlation between IPO market activity and underpricing in the U.S. market over the 1977–1988 period. Accordingly, the positive issue returns decline as IPO market activity increases. The rationale for this condition is formulated in terms of increased information transfer; hence information cost reduction and subsequent reduction in the required risk premiums. Huyghebaert and Quan (2009), however, do not find a correlation.

In the study by Boulton et al. (2010), the influence of the general economic environment on underpricing is examined. The authors demonstrate a significant positive correlation between M&A market activity and the level of underpricing over the 1980–2008 period for the U.S. market. The explanation for the positive correlation is a defense mechanism of an issuer against potential takeovers, which are supposed to generate increased demands. The U.S. market has a relatively high M&A volume due to the vital role of the market in economic regulatory affairs. Therefore, Boulton et al. (2010) were able to study the influencing factor extensively over a more extended period.

In the study by Ritter (1991), a significant long-term performance of -10.23% (one year) and -29.3% (three years) can be demonstrated for the U.S. capital market during the 1975–1984 period. He explains it with the high IPO market volume (hot issue) to be found and the Window of Opportunity model, in which issuers take advantage of the optimistic market phase to go public. Meanwhile, Chi and Padgett (2005) (sample: 668 A-share companies that went public between 1996–2000 in China; IPO return time horizon: end of 1st, 5th, 10th and 20th day of trading; method: MAAR; benchmark: Shanghai A-share Index and Shenzhen A-share Index; data collection: Guo Tai An (GTA) China's IPOs database) find a positive long-term (one-year) performance of 10.3% for China between 1996 and 1997. They also attribute this finding to the positive economic market development of China.

4.3.2. Regulatory standards

The stock market subcategory, regulatory standards, includes variables such as investor protection, legal certainty, or transparency. Affleck-Graves et al. (1993) and Francis et al. (2010) examine whether transparency has an impact on issue returns. Both studies show a significant relationship among companies in market areas with strong transparency standards and low underpricing for the U.S. capital market between 1983–1987 and 1985–2000, respectively. Banerjee et al. (2011) and Engelen and van Essen (2010) look at the impact of investor protection on issue returns. They demonstrate that for 37 and 21 different capital markets, such as China and the U.S. among others, between 2000–2006 and 2000–2005, positive issue returns are negatively correlated with increasing investor protection regulations, equivalent to a reduction in issue returns with higher investor protection, respectively. Furthermore, Engelen and van Essen (2010) find that underpricing decreases as legal system quality increases. The study by Francis et al. (2010) provides evidence that for the U.S. market during the 1985–2000 period, foreign companies that have well-developed financial markets in their home countries have lower underpricing in the U.S. than those from less developed financial markets.

4.3.3. Country-specific stock market factors

Under the stock market subcategory, country-specific factors, political measures, regulatory peculiarities, and privatization measures are bundled. Several studies deal with the possibility of reducing issue returns, in particular underpricing,

through political measures. For example, Huyghebaert and Quan (2009) analyze whether privatization measures by the government or specific partial privatizations (SIPs) can be determined as influencing factors for underpricing. The authors show that positive issue returns are high during the strong privatization activities in China from 1994 to 2005. Chen et al. (2004) can confirm these results for the 1992–1997 period. Meanwhile, Chan et al. (2004) cannot find a significant relationship between negative long-term performance and IPOs due to privatization activities in China during the 1993–1998 period.

Tian (2011) investigates the relationship among the Chinese allocation process (a lottery mechanism by randomly deciding which subscriber receives shares), the government-imposed price caps, and underpricing. In each case, a significant negative correlation is found during the 1993–2004 period. It is explained by the fact that the allocation ratio limits the supply of IPO shares, whereas the price caps may lead to demand gaps. Chen et al. (2004) examine the pricing of IPOs of different classes of shares (e.g., A- and B-shares) over the 1992–1997 period for the Chinese market. They show a significant difference in issue returns between the stock classes, with A-shares exhibiting much higher underpricing than B-shares. They cite three influencing factors for this finding: the long institutional lag, the frequency of seasoned equity offering, and the great government ownership in the issuing firms. Aharony et al. (2000) look at the impact of protected industries in China on long-term issuer performance and find a statistically significant negative relationship during the 1992–1995 period. More recently, Banerjee et al. (2011) show that in a study of 37 countries, such as China and the U.S., underpricing is lower during the 2000–2006 period in countries with more investors subject to home bias.

The literature sample also included studies that examined influencing factors that could not be assigned to the defined influencing factor categories. For example, in his study of the Chinese market from 1993 to 2004, Tian (2011) found a significant positive correlation between the age of the company and underpricing. On the one hand, the author explains this by the fact that a large part of the companies have just been newly founded or restructured before they conduct an IPO. On the other hand, young companies that manage to go public are considered competitive compared to longer existing companies and are thus expected to perform very well. Chi and Padgett (2005) also find a positive correlation between the high-tech industry and underpricing in the Chinese market between 1996 and 1997.

Boulton et al. (2011) examine the impact of aggressive earnings management initiated before IPOs, which include accrual earnings management and carve-out of temporarily profitable units, on the issue of return phenomena. They demonstrate a strong positive correlation between short-term underpricing for the Chinese market and 36 different capital markets, including the U.S., between 1992–1995 and 1998–2008, respectively. Subsequently, Loughran and Ritter (1995), Rangan (1998), Purnanandam and Swaminathan (2004), and Teoh et al. (1998) have also found significant relationships between earnings management and overpricing in the Chinese market. Loughran and Ritter (1995) find a significant positive relationship with overpricing for book-to-market value effects between 1970–1990. Purnanandam and Swaminathan (2004), on the other hand, show a positive relationship between overpricing for accruals and growth forecast between 1980–1987. Moreover, Teoh et al. (1998) show for the period 1980–1992 that issuers with higher accruals in the IPO year encounter poor stock return performance in the three years after that. Finally, Rangan (1998) shows that for 1987–1990 discretionary accruals are also negatively correlated with overpricing.

5. DISCUSSION

The studies examined through a systematic literature review show that categorizing the influencing factors and mapping the various results by region can provide differentiated and improved views of the impact relationships of the return on investment (ROI). While no clear, coherent network of effects can be identified, differences in importance and linkages between different influencing factors and regions can be identified.

For stakeholder variables, we find that government involvement (Chen et al., 2004; Chi & Padgett, 2005; Huyghebaert & Quan, 2009; Tian, 2011), board experience (Certo et al., 2001), and their political linkages (Fan et al., 2007) are significant determinants of underwriting returns across the regions and different periods studied. Underwriter reputation (Arthurs et al., 2009; Booth & Chua, 1996; Megginson & Weiss, 1991) and VC involvement (Carter et al., 1998; Schenone, 2004) produce conflicting results regarding their influence in different regions and periods. For issuance factors, allocation ratio (Chang et al., 2008; Tian, 2011), institutional lag (Chan et al., 2004; Chen et al., 2004), retention ratio (Habib & Ljungqvist, 2001), and issuance volume (Chan et al., 2004; Chi & Padgett, 2005) are confirmed to be influential across different regions or periods. By contrast, no relationship is found for the lock-up period (Arthurs et al., 2009). Specifically, the analysis of stock market factors confirms regulatory standards, such as legal system quality (Engelen & van Essen, 2010), transparency and investor protection (Banerjee et al., 2011), and price caps (Tian, 2011), as influencing factors over different periods. In addition, stock market activity (Huyghebaert & Quan, 2009) and M&A activity (Boulton et al., 2010) are shown to be related to issue returns.

The comparison of the Chinese and the U.S. capital markets reveals the relevance of various influencing factors and their overarching categories regarding the IPO return phenomena (Table 2). Concerning the short-term IPO return, stock market-related factors are cited as a relevant influencing category for the Chinese capital market. Among others, IPO market volume (Carey & Steen, 2006; Huyghebaert & Quan, 2009), regulatory requirement, and institutional framework (Tian, 2011) are shown to be positively related to the regional expression of underpricing. Stakeholder-related factors are shown to have positive and negative effects; for example, the interconnectedness of the government with respective corporate managements is shown to have a positive influence (Fan et al., 2007); state

participation in IPO companies a negative influence (Chen et. al, 2004; Tian, 2011); and the SIPs of Chinese companies a positive influence (Huyghebaert & Quan, 2009). In terms of issue-specific influencing factors, Chang et al. (2008) cite allocation and lottery ratios, Chen et al. (2004) and Chan et al. (2004) regard the time lag between supply and quotation, and Tian (2011) cites price caps as influencing factors for the strong underpricing. The relative underperformance in the Chinese capital market that emerged in the studies of Fan et al. (2007), Chan et al. (2004), and Cai, Liu, and Mase (2008) can be correlated by stakeholder-related factors, such as state-protected industries (Aharony et al., 2000), in-state ownership (Chi & Padgett, 2003), politically connected CEOs (Fan et al., 2007) or imminent political funding (Piotroski & Zhang, 2014), have been demonstrated.

For the U.S. market, stock market-related factors, such as the general economic environment, are also cited by Boulton et al. (2011). The IPO market volume and the so-called hot issue market are considered positive influencing factors (Carey & Steen, 2006; Rajan & Servaes, 1997). As another significant influencing factor, Francis et al. (2010) and Affleck-Graves et al. (1993) establish a negative relationship with regulatory standards, particularly legal system quality and transparency. By contrast, the category of stakeholder-related factors, such as transaction participants, VC firms, and underwriter reputation, yield contradictory results for the U.S. market (Arthurs et al., 2009; Booth & Chua, 1996; Carter et al., 1998; Certo et al., 2001; Liu & Ritter, 2011; Loughran & Ritter, 1995; Megginson & Weiss, 1991; Schenone, 2004; Tinic, 1988). In terms of issue-specific influence factors, a significant negative influence can be demonstrated for the issue type, master limited partnership (MLP) IPOs, which is specific to the U.S. (Michaely & Shaw, 1994). The overpricing documented in the works of Ritter (1991) and Loughran and Ritter (1995) for the U.S. capital market is interpreted as the excessively high initial returns at the offering dates as a result of investor overreaction. In this context, they bring forth the concept of the Window of Opportunity. Also mentioned in this context are the stakeholder-specific influence factors, such as Investor flipping Behavior (Krigman et al., 1999), stock market-related factors, IPO market activity (Krigman et al., 1999), and influence factors such as aggressive earnings management (Rangan, 1998; Teoh et al., 1998), all of which have a positive influence.

Despite the large regional differentiation in the factors influencing underpricing, the long-term returns on the issue show a low degree of clear and consistent differentiation. This finding suggests that relevant factors, which affect the returns on the IPO phenomena, are sometimes fundamentally different from one another. Long-term overpricing is often accompanied by short-term underpricing, but the underpricing is caused by other factors. On the one hand, overpricing is influenced by stakeholder-related factors such as analyst coverage and optimism (Jia et al., 2019), and government involvement (Chi & Padgett, 2003; Fan et al., 2007; Wang, 2005). Overpricing can also be affected by influencing factors, such as upcoming government funding and IPO market activity (Krigman et al., 1999), which can be assigned to the stock market-specific factor category. Moreover, factors such as earnings management (Purnanandam & Swaminathan, 2004; Rangan, 1998; Teoh et al., 1998) and company age (Tian, 2011) also have a significant effect on the relative underperformance. On the other hand, underpricing is significantly influenced by regulatory requirements and institutional frameworks (Tian, 2011), such as legal system quality and transparency (Affleck-Graves et al., 1993; Francis et al., 2010) in the stock market-specific factor category; stakeholder-specific factors, such as the interconnectedness of the government with corporate boards (Fan et al., 2007), government ownership in IPO companies (Chen et al., 2004; Tian, 2011), and SIP (Huyghebaert & Quan, 2009); and issuance factors, such as allocation and lottery ratios (Chang et al., 2008), time lags between offering and listing (Chan et al., 2004; Chen et al., 2004), price caps (Tian, 2011), and MLP IPOs (Michaely & Shaw, 1994). These proven influencing factors are reflected in the profoundly different manifestations of underpricing in the two capital markets and the vastly different regulatory frameworks.

On the basis of the examination of the correlations of influencing factors and the characteristics of the returns on the issue in different capital markets, we can conclude that factors with significant influences on the long-term returns on the issue are in the stakeholder and stock market-related categories. Moreover, these factors are not those that occur exclusively in one location, like the specific IPO regulation described in Section 2. Although stock market-related factors have relevant effects, increased IPO market activity and impending government funding are unexclusive to a specific location. However, some factors that influence the short-term returns on IPOs, which can be referred to as underpricing, may be exclusive to a location, such as a lottery ratio, price caps found specifically in China, and MLP IPOs found specifically in the U.S. The underpricing phenomenon and its characteristics are closely related to the location, whereas overpricing is location-independent. This finding is consistent with the substantial differences in the regional characteristics of underpricing and the small differences in overpricing (Loughran et al., 2018; Fan et al., 2007; Ritter, 1991).

Overall, the sets of stakeholder-, issue-, and stock market-specific factors interact with diverse market forces and create complexity that affects IPO prices. Therefore, explaining the expression of an IPO return using a single theory or a factor is difficult. The importance of the choice of location and the consideration of diverse influences for issuers in terms of acquired capital and further research can be deduced. Based on the significant influencing factors identified with respect to underpricing and overpricing, an environment that makes IPO returns likely to occur at the intended level can be targeted. The changed probabilities of potential liquidity losses or gains make the results relevant for the stakeholders involved in IPOs. The catalog of significant influencing factors is thus an essential basis to classify the general institutional framework and, therefore, decide under which conditions a company should issue or in which locations and influences an IPO investor has good issuance return prospects.

Nevertheless, the aim is still to bring the influencing factors into a coherent network of

effects that can link temporal, spatial, and categorical influences with one another. Doing so requires a further differentiation and inclusion of existing and additional factors, which have received too little attention in existing literature so far. The high coverage of the various issue-, firm-, stakeholder- and stock market-specific variables should therefore be supplemented explicitly by other new factors that have not yet been tested (e.g., specific company ratios) and factors that have received little attention (e.g., market segmentation, company age as in Tian, 2011, or company sector as in Chi and Padgett, 2005). Consequently, superordinate categories must also be expanded to company-specific factors as the variables studied do not fall under the existing ones.

In addition, the robustness of the previous results needs further examination. This is particularly important given the partially different underlying methods (e.g., OLS, BHAR, BHR, CAR, MAAR) as well as indifferent framework conditions, behaviors, periods, and heterogeneous developments. Consequently, it would be meaningful to harmonize the different studies on various factors methodologically, i.e., to use the same calculation methods and a uniform market proxy for the respective capital market to make results more comparable and contradictory results like e.g., the underwriters' reputation (Arthurs et al., 2009; Booth & Chua, 1996; Carter et al., 1998; Certo et al., 2001; Liu & Ritter, 2011; Loughran & Ritter, 1995; Megginson & Weiss, 1991; Schenone, 2004; Tinic, 1988) more explainable. This is also linked to the methodological problem of the correct time horizon, which regularly differs across the various studies. Future studies could use uniform time horizons, such as the initial market price for the short time horizon, ten days for the medium time horizon, and one year for the long time horizon.

Furthermore, it would also be essential to include other regions with different economic developments and institutional settings to put the factors influencing IPO returns into a further temporal and regional context. For example, developed and developing capital markets could be compared with each other, as in the studies by Banerjee et al. (2011) or Engelen and van Essen (2010). In addition, the focus of the studies was primarily on the 1980s and 1990s as well as the period of the internet bubble up to 2003. More recent studies, which also examine the currently changed market conditions, would be particularly relevant. Although the studies examined VC financed, owner-managed companies or specific sectors (e.g., internet or technology) and particular market phases (e.g., hot issue market), there was no evaluation of special features of, for example, small companies.

6. CONCLUSION

This study aimed to present the influence of stakeholder-, issue-, and stock market-specific factors on underpricing and overpricing. For this purpose, a systematic literature review of relevant empirical studies was conducted. The results were bundled on the basis of the influencing factors, underpricing and overpricing, and put into a regional context and a comparison among the sample regions.

According to the current state of research, no coherent and structured explanatory relationship exists between the factors influencing issue returns and different regional markets, at least illustrated by our example regions of the U.S. and China. Although both are comparable in terms of their global importance and their attention by investors, their history, governmental influence on capital market mechanisms, and the institutional framework are significantly different. Therefore, in our opinion, these regional markets are well suited as objects of study, despite the limitation of course that we focused on only two regional markets. Our study and thus our results are subject to some further limitations according to applying systematic literature: The first and probably most important limitation is the small sample of 38 studies, as the generalization of findings is limited. The selection of electronic databases; the formal quality criteria, especially the language and period; and the substantive quality criteria or their application may have led to biases. An inevitable subjectivity influences the inclusion and exclusion of relevant studies. Last, the different studies on long-term performance comparability are limited due to the partly different methodologies and bear the risk of potential biases.

However, our results show that stock market-specific factors, in particular, are crucial for regional differentiation. The results on the correlation between stakeholder- and issuance-specific factors are at least partially contradictory. The uniformly identified correlations of stakeholder and issuance factors diverge only slightly in the markets investigated. The investigation of the influencing factors mentioned in the studies also reveals the causal relationship that the IPO return phenomenon of underpricing is influenced by site-exclusive and site-independent factors, whereas overpricing is primarily influenced by site-independent factors.

These results suggest that the network of effects of the IPO phenomena and influencing factors still need further analysis. It would be valuable to extend future studies to other regions, such as developed and developing capital markets, to focus on additional influencing factors such as company-related influencing variables and standardize and harmonize methods and periods across different studies. These conceptual lines of inquiry may inspire future research that will enable comparability and thus a coherent network of effects that can link temporal, spatial, and categorical influences with one another.

This paper contributes to narrowing the research gap by providing an overview of the aspects that shape the relationship between influencing factors and the U.S. and the Chinese markets. Given the centrality of IPO processes and issues in the fabric of financial economics research, these findings can encourage further studies that can strengthen the understanding of the multifaceted influencing factors of the IPO return phenomena, as they relate to different regions. Due to the potential capital loss or gain, the results are especially highly relevant to IPO-involved stakeholders, such as the issuing and investing parties.

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