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Underwriting Syndicates in BRIC Countries: Determinants of Syndicate Size and Member Selection

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Abstract

The process of startup firms raising capital through equity markets by issuing shares to the public is a strong sign of financial growth and innovation. Going public requires the issuing firm to share information with potential investors and requires financial institutions to underwrite the effort, typically through a syndicate. The underwriting syndicate is a coalition of competing banks that serve as intermediaries between the firm and the investors. In emerging nations, this process is compounded by the differences in the maturity of the financial markets and the economic environment. The growth and significance of capital markets in the BRIC (Brazil, Russia, India, and China) nations offer a good laboratory to understand the formation of underwriting syndicates and their role as intermediaries in bridging the gap between savers and investors in asymmetric information settings. We empirically analyze the composition of the underwriting syndicate in BRIC nations, focusing on the size and characteristics of the underwriting syndicate and relate them to the growth of the equity market. We examine the role of underwriter reputation, underwriter social networks, and local/international underwriters, as these attributes reflect the ability of the underwriter to reduce asymmetric information. We find that the probability that a bank is chosen to be a part of the syndicate is positively correlated to their reputation and their ability to network, and is greater if they are a local bank. Syndicate size is positively related to the size of the deal, and syndicate size becomes smaller over time. We conclude that the ability to produce information and promote this ability to outside parties is critical, especially in emerging markets, where information asymmetries are generally greater.

1. Motivation and Background

An Initial Public Offering (IPO) heralds the first entry of privately owned firms into public equity markets, whereby the private ownership of the corporation transfers to public shareholders. A major concern in making this transition is the ability of investors to attain information regarding the issuing firm in order to value the shares and assess its risk. Issuers work with investment banks to gather their financial information and present it to investors and gather feedback. These underwriters also generally determine a price and allocation for the sale of shares and bear risk for the sale of the IPO. Underwriter banks thus work to bridge this information gap to serve the needs of both parties. Underwriting can be accomplished by a sole intermediary, but is generally accomplished by multiple firms working jointly as a group, called the *underwriting syndicate*.

In this study, we examine whether the complexity of the deal, which makes information gathering easier or more complex, and underwriter characteristics that proxy for the ability to bridge the information gap are important in determining who participates in the syndicate and the overall size of the syndicate.

The formation of a syndicate is a result of multiple factors. Underwriting syndicates are led by one or more banks, called the *t*, with other syndicate members acting as co-agents to assist with the pricing, risk-bearing, and distribution of the equity. Underwriters generally seek to avoid the unnecessary sharing responsibility for the deal and the profits, especially with other underwriters who are direct competitors. Some of the reasons for inclusion in the syndicate are: (1) the need to share capital commitment, (2) the need to share marketing efforts, (3) the need to gain expertise and skills for IPO valuation, (4) the need to establish business relationships in hopes of similar reciprocal inclusion, and (5) to preserve existing links and connections to other underwriters.¹ Previous researchers have argued that issuers gain from a larger underwriting syndicate, because it leads to improved information acquisition. On the other hand, the size of the syndicate could be limited by demands from prestigious underwriters for larger allocations, competition among underwriters, and the size of the equity issue.² Thus, the formation of the underwriting syndicate

1 Demissew Diro Ejara, "Syndicate Size in Global IPO Underwriting," *International Business & Economics Research Journal*, 6, No. 3 (2007): 49

2 Shane A. Corwin and Paul Schultz, "The Role of IPO Underwriting Syndicates: Pricing, Information Production, and Underwriter Competition," *AFA 2004 San Diego Meetings* (2003): 2, <http://ssrn.com/abstract=389723>

is very important and results in a great deal of competition among underwriting firms. Our research explores the factors affecting the size of the underwriting syndicate and how the impact of these factors differs across the four emerging nations over the 10-year period from 2000 to 2009.

We begin with an analysis of the size of the syndicate. We find that syndicate size has decreased from an average of 6.35 members per deal to an average of 2.83 members per deal over the period from 2000 to 2009. Our findings are consistent with studies that have found similar trends among underwriting syndicates in developed nations in earlier periods.³

The next step is to examine the selection process in choosing underwriters to be members of the underwriting syndicate. Reputation of the underwriter and the strength of its relationships with other underwriters are factors that influence the inclusion of an underwriter in a syndicate. These factors also affect the role that an underwriter plays in the syndicate, e.g., a lead role as a book-runner of the syndicate. Previous research has shown that the factors that increase the probability of being selected as a member of the syndicate include underwriter reputation, participation in recent deals with the current book runner, and proximity of the book runner to the issuer.⁴ In addition to extending the analysis to underwriter syndicates in the BRIC countries, we also incorporate social network variables in our analysis. Specifically, we use the *Bonacich power* measure and *betweenness* to measure the centrality of the underwriter and the extent to which it is networked in the financial markets. We find that the reputation of the underwriter and its betweenness are important factors that determine the probability that an underwriter is included in the syndicate.

2. Data

We used SDC Platinum's Global Initial Public Offerings database for data on IPOs in the BRIC countries over the 10-year period from 2000 to 2009. We collected data on the deal date and size, the managers involved in the deal, and the description of the manager's role.

There are a total of 17,973 deals reported in SDC in our data period. We removed non-IPOs, IPOs outside of BRIC and the United States,

³ *ibid.* Ejara, 54

⁴ *ibid.* Corwin and Schultz.

and duplicate records. We were then left with a total of 3,476 deals, 2,662 of which were in the United States. This left us with a total of 1,814 deals in the BRIC nations—Brazil, 126 deals; Russia, 61 deals; India, 391 deals; and China, 1,236 deals.

Each IPO is underwritten by a syndicate that consists of multiple underwriters who play distinct roles in the underwriting process. The possible roles are:

- Book Runner
- Co-Lead Manager
- Co-Manager
- Syndicate Member
- Joint Book Runner
- Joint Lead Manager
- Lead Manager
- Global Coordinator

The book runner on any deal has primary responsibility for pricing the shares and for a successful offering. They are always listed first in the syndicate list. Often, there is more than one book runner, in which case the underwriters are designated as joint book runners. Next listed are the lead managers and managers (and co-lead managers and co-managers) of the syndicate, who are responsible for placing shares with investors. As expected, lead managers have a more important role and are listed before managers. A syndicate member is a bank that participates in the placing of shares with investors. Finally, a global coordinator manages the allocation across several countries. The names of syndicate members and global coordinators always appear last, reflecting their non-leadership roles. Underwriters are listed in the order reflecting their importance in the syndicate.

We used the listing of underwriters to determine the size of the syndicate and identify the importance of underwriters in the syndication. To make the data usable, we had to take several further steps. We started with a complete list of all the underwriters who participated in deals in the BRIC countries. There are 996 distinct underwriter names in the list, but several of the names represent subsidiaries operating in different countries. We carefully screened the underwriter names to identify those that belong to the same organization (e.g., Banco UBS Warburg SA and UBS East Asia Ltd. were both considered to be UBS). This process resulted in a total of 625 unique underwriters, and we assigned them an Underwriter Index number ranging from 10000 to 10624 (UBS in the example cited above has the index number 10559). The transformation from a list of names to an underwriter index allows us to process more easily the number of underwriters in a syndicate and analyze the data.

For every deal, we were also careful to screen multiple entries of the same bank as an underwriter. This happens if the bank and its subsidiary play separate roles in the same deal, e.g., book runner and manager. We took only the first entry of the bank into account in generating the list of underwriter. That is, in all cases of multiple entries by the same bank, we deleted the second and higher entries from the list of underwriters. This ensured that our measures were not unnaturally skewed by multiple roles of the same bank. The total number of unique underwriters is the *syndicate size* for the IPO.

The steps above help us identify the set of banks and institutions that play a role in the IPO process and participate in underwriting syndicates in the BRIC countries.

2.1 Underwriter Reputation

Reputation of the underwriter is an important factor in the underwriting process and can determine the size of the syndicate and its participants. The traditional measure for determining the reputation of underwriters is the Carter-Manaster rank, developed by Richard Carter and Steven Manaster in 1990. Their measure bases its ranking on the ordering within IPO tombstones.⁵ Our reputation measure is similarly based on the ordering of individual underwriters, i.e., it is based on the role that an underwriter plays, across all syndicates in which an underwriter participates in a given country.

As noted above, the members in a syndicate are listed in their order of importance in the deal based on the role they perform, e.g., the book runners are always listed first. We find that the first-listed manager may have a different named role within each deal, but within each deal, they always decrease in order of importance. In the IPOs in Brazil, Russia, India, and China from 2000 to 2009, no syndicate had more than five manager descriptions, and we therefore use a scale of 1 to 5 to rank the importance of underwriters participating in each deal. A reputation score of 5 was assigned to the first-listed manager for that syndicate. We then progressed down the list of managers assigning a reputation score as follows: The next manager on the list received the same score if the manager had the same role. If the next manager on the list had a different role, however, they received a reputation score of one point less than the score of the current manager. All managers, therefore, received a reputation value ranging from one to five. Our

⁵ Richard Carter and Steven Manaster, "Initial Public Offerings and Underwriter Reputation," *The Journal of Finance* 45, No. 4 (1990)

reputation measure for an underwriter is constructed based on the raw reputation scores across all deals. We added the individual deal scores (minimum 0, maximum 5) and divided by the number of deals that underwriter had been involved in from 2000 to 2009. This results in an average reputation score for the underwriter and represents how often the underwriter secured a top position in the syndicate.

Past findings show that reputation is a critical factor in the selection of underwriters, and so our study of this variable should help to assess the extent to which reputation leads to choice as an underwriter in any syndicate in BRIC financial markets.

2.2 Network Variables

It is plausible that underwriters form networks and have a tendency to work with the same individuals across different deals. To measure this, we used two network variables, the Bonacich power and the betweenness variables, based on the relationships formed within each syndicate.

2.2.1 Bonacich Power

The Bonacich power variable, created by Phillip Bonacich, is based on the idea that “actors who have more connections are more likely to be powerful because they can directly affect the actions of other actors.”⁶ The Bonacich power variable also takes into account the strength of the actors surrounding any given actor, as power is affected by the connections of each of the actors. To measure this, the procedure to determine the Bonacich Power index uses an attenuation factor that makes an underwriter more powerful if they are connected to more and to strong underwriters. We use the attenuation factor, i.e., Beta, of 0.5 in constructing the Bonacich power variable.

2.2.2 Betweenness

We also use a second network measure, *betweenness*, which is based not on the number of connections but rather on the “extent that the actor falls on the geodesic paths between other pairs of actors.”⁷ This measure denotes the dependency of other actors on any one given actor in order to connect them to one another. As a network measure, betweenness is important because it measures the extent to which syndicate participants depend on a group of institutions for

6 Hanneman, Robert A., Introduction to social network methods, (Riverside, CA: University of California, 2005), Ch.10

7 *ibid.*, Hanneman, Ch. 10

the formation of syndicates with others. Thus, the networks can be dominated by a few players who have a certain level of power over other participants, or the network can be more diffuse. Highly connected underwriters can, for example, serve as gatekeepers between groups of underwriters in the early stages of economic development in a country, but the networks may be more diffuse as the country's equity markets evolve.

2.2.3 International and Regional

For each underwriter, we also identify the sphere of operations as being as *international* ("I") or *regional* ("R"). We first determine the home country of each underwriter, which we define as the country in which they are incorporated based on data from company websites and *BusinessWeek* profiles. Underwriters are then classified as international if their home country is not one of the BRIC countries and are otherwise considered to be regional. No information was available for seven banks in our sample; we classified them as regional by default. A total of 51 banks were considered international (e.g., Goldman Sachs, UBS, and ABN Amro), and 574 banks were considered regional.

3. Hypotheses

This study examines two aspects of underwriter syndicates in the BRIC countries—the size of the syndicate and the probability that an underwriter is chosen to be a member of the syndicate.

3.1 Syndicate Size

Firms planning to go public have to overcome a severe asymmetric information problem with investors. Firms rely on the underwriting syndicate to help bridge the gap and a critical task for underwriting syndicates is to facilitate the gathering and production of information. Previous studies, e.g., Corwin and Schultz and Ejara, argue that information production is "part art and part science."⁸ They view the underwriter syndicate as a collection of agents engaged in information production on behalf of firms going public, and examine the role of syndicate size. Fees are shared among syndicate members, and so each new member must contribute to the information-production process in

8 Shane A. Corwin & Paul Schultz, "The Role of IPO Underwriting Syndicates: Pricing, Information Production, and Underwriter Competition," AFA 2004 San Diego Meetings (2003): 5, <http://ssrn.com/abstract=389723>

order to justify its place in the syndicate. The dataset of Corwin and Schultz consists of approximately 1,700 American IPOs from 1997 to 2002. Ejara's study examines American Depository Receipts from 1990 to 2001. Our study builds on their work by looking at syndicate size in the BRIC countries during a more recent period.

Our study uses an approach similar to that of earlier research in analyzing the determinants of syndicate size. We regress syndicate size on deal characteristics, which proxy for the scope of information production required, and reputational rank and network variables for the underwriters, which proxy for the ability of the underwriter. Our hypothesis is that more complex deals require a larger syndicate, and the impact of deal size and complexity is expected to be positive. Information production by more reputed underwriters and those that are more networked is expected to be more efficient, and we expect syndicate size to be negatively related to underwriter reputation and network variables.

The expected impact of our independent variables on syndicate size is as follows: IPO proceeds represent the size and complexity of the deal and, as suggested by previous research, will positively impact syndicate size.⁹ The network variables represent the underwriter's centrality and propensity to participate in networks and the effect on syndicate size should be positively related to Bonacich power and betweenness. The reputation variable of the underwriter measures the quality of the underwriting syndicate and is externally observable by issuers and other underwriters. Reputation is expected to be negatively related to syndicate size, as more reputable underwriters require fewer partners to bring the deal to a successful conclusion. The regional dummy variable was predicted to have a positive impact, as these are smaller underwriters, and syndicates may require more members if some are regional. The home country dummy variable, on the other hand, could have a negative impact, as these underwriters were better able to produce information on an IPO in their country. The resulting impact of these two dummy variables would help determine the impact of geographical proximity and the significance of the breadth of operations in uncertain but quickly emerging financial markets.

3.2 Syndicate Selection Process

Firms have to choose the firm that will underwrite the offering and manage the IPO, and the selection of the syndicate members is

⁹ *ibid.* Ejara, 54

fundamental to the underwriting process. The first step is for the issuing firm to choose the book runners, or lead underwriters; there is competition among the underwriters for this top position. The book runner selects other underwriters to participate in the syndicate, with input from the issuing firm. Underwriters best equipped at gathering information are more essential to the syndicate and play a larger role. Several strategic considerations, including relationships between underwriters, affect this selection process. This study examines the effect of factors that are expected to affect the underwriter selection process. The factors included in the analysis are: network measures, underwriter reputation, geographical proximity, breadth of services, and the prior involvement of the underwriter in the given market. The expected impact of these variables on the probability an underwriter is selected is shown below.

Bonacich power and betweenness, the two network measures that

Factor	Direction
Prior Year's Bonacich Power	+
Prior Year's Betweenness	+
Prior Year's Reputation	+
Number of Deals in Prior Year	+
Home Country Designation	+
Regional Designation	-

provide a value of centrality and relative importance in the network, will likely both lead to a higher chance of being selected as a syndicate member, as these underwriters are more essential to the network and are often depended on for their connections and strength. Reputation has been shown to be critical in the underwriting process, especially in developed markets, and thus it is likely that this trend will hold true in the BRIC nations, where information asymmetry is generally greater. Past involvement, based on the underwriter's total number of deals in which they were involved in the prior year, should also improve the chances of being selected, as underwriters are able to show past success in their marketing to the issuing firm and will be more well-known in the financial world. Home country underwriters tend to have better connections in local markets and are also generally better able to allocate shares, as they operate in the same nation as the issuer. Due

to their greater knowledge of the market, these underwriters should have an advantage in the selection process. Regional banks tend to be smaller underwriters, as compared to international underwriters (i.e., Goldman Sachs, Morgan Stanley, etc.). If the breadth of experience and reputation is important in the selection of underwriters, there should be less chance of regional underwriters being involved in any given deal.

4. Methodology

This study uses a panel regression approach to understand the determinants of underwriter syndicate size and the probability that an underwriter is selected to be part of a syndicate.

4.1 Syndicate Size

Syndicate size is a discrete variable, and this study uses a discrete count regression model for the analysis. The alternatives are Poisson regression and a negative binomial regression.¹⁰ The mean and variance of the dependent variable are different in our data, and we therefore use negative binomial regressions. We also use both pooled and two-way panel regressions in our analysis. The impact of deal and underwriter characteristics can vary by country. Prior research has found that syndicate size trends downward over time,¹¹ and we find similar trends in our data in the BRIC countries. We therefore also use year-fixed effects in our regression. The two-way panel regression controls for differences across countries and years. Our model is, therefore,

$$y = \xi\alpha + \beta X + \gamma Z + \epsilon$$

where y is syndicate size and is the dependent variable, X represents the independent variables, and Z represents time and nation fixed effects.

4.2 Syndicate Selection Process

For each IPO, the dependent variable is a selection dummy variable that is equal to 1 if the underwriter is selected to be part of the syndicate and 0 otherwise. The dependent variable for analysis is thus a limited

¹⁰ *ibid.* Corwin & Schultz, 10

¹¹ *ibid.* Ejara, 54

dependent variable and, following prior research, e.g., Corwin and Schultz, a PROBIT regression model is used to understand the factors that determine the probability that an underwriter is selected to be part of the syndicate. The regressions are a panel regression, controlling for variation across nations and across time. We note that the errors could be correlated across deals in which the same underwriter participates, and errors are therefore clustered by the underwriter index.

The independent variables were the factors listed above, namely, prior year's Bonacich power, prior year's betweenness, prior year's reputation, number of deals in prior year, home country dummy, and regional dummy. For robustness, the models used the percent of the syndicate based in home country, the percent of the syndicate that is regional, and size of IPO proceeds, which are deal-specific variables. The number of deals in the country in the current year, which proxies for the level of activity in each country, was also used.

After testing the data across all four nations, the data was tested for each country individually. The same model, variables, and controls were used in each of these tests. For robustness, regressions were also run for each country individually to examine whether model characteristics varied by country.

5. Results

This section presents the results of the regressions for syndicate size and the probability of underwriter selection as a function of independent variables.

5.1 Syndicate Size

The results of the negative binomial regression on syndicate size appear in Table 1. The first two columns of Table 1 present the results when using data from all countries, with the first column presenting results for a pooled regression and the second column presenting results for a panel regression. Columns 3 through 6 present results for each of the BRIC countries.

The results reported in the table support the hypothesis that IPO proceeds, Bonacich power, betweenness, underwriter reputation, geographic proximity, and the breadth of services influence the size of the underwriting syndicate. Looking at the pooled and panel regressions using the data from all countries, IPO proceeds had a significant impact on the syndicate size and, as predicted, larger deals increase the size of the syndicate. The impact of deal size is positive

in the four individual countries as well. Bonacich Power significantly increases the syndicate size in the pooled and panel regressions, but is only significant for China when examining countries individually. The latter is likely due to the ability of a well-connected underwriter to bring other underwriters into the fold. The negative sign on betweenness in Brazil is a puzzle; perhaps the prestige of being a “gatekeeper” may allow the syndicate to be more discriminating and thus produce information with higher efficiency. Reputation minimizes the need for more underwriters with great significance, which may be a testament to underwriters’ quality of information production. The sign goes the other way in Brazil. Geographic proximity also showed great significance in decreasing the size of the syndicate, likely because home country underwriters would be able to produce higher quality information to market domestically. The case of India is different; the coefficient on the home country dummy is positive. The smaller scope of an underwriter’s services, as proxied by the regional dummy, increases the syndicate size. The presence of regional underwriters requires a larger number of underwriters to participate in the syndicate.

Table 2: Study of factors affecting underwriter selection into syndicate, using PROBIT regressions

	PROBIT Model Coefficients					
	Panel	Pooled	Brazil	Russia	India	China
Past Year’s Bonacich Power	0.003 (0.200)	0.000 (0.310)	-0.016 (-0.670)	0.061 (1.610)	0.019** (2.720)	-0.001 (-1.070)
Past Year’s Betweenness	2.692*** (5.460)	3.438*** (5.200)	3.883*** (4.940)	-2.232 (-0.770)	1.298** (2.560)	0.963* (2.410)
Past Year’s Reputation	0.149*** (22.440)	0.153*** (22.810)	0.154*** (4.880)	0.054 (1.480)	0.115*** (7.220)	0.121*** (17.570)
Past Year’s Deals	0.024*** (7.060)	0.015*** (6.280)	-0.003 (-0.370)	0.145* (1.850)	0.050*** (6.230)	0.059*** (23.380)
Home Country Dummy	0.209*** (5.630)	0.251*** (6.610)	0.589*** (4.340)	0.508*** (3.320)	0.389*** (7.280)	0.127*** (4.210)
Regional Dummy	-0.219*** (-4.970)	-0.255*** (-5.190)	-0.776*** (-5.210)	-0.493*** (-4.480)	-0.360*** (-6.700)	-0.168*** (-4.440)
N	538646	538646	8296	2580	42896	484874
Pseudo R2	0.1730	0.1621	0.1882	0.1857	0.1808	0.1803

***, **, and * indicate significance at 1%, 5%, and 10% level, respectively.

The results shown in Table 2 confirm the importance of relationships, reputation, experience, geographic proximity, and breadth of services. Betweenness is positive and significant in the combined and individual country regressions, except for Russia. Bonacich power only had a significant effect in India. This may be due to the nature of the financial markets in India as well as the cultural values of the nation. Regional and home country designations had negative and positive influences, respectively, on the probability of underwriter selection in all nations. As predicted, firms with greater reputation and experience tended to be more likely to be involved in any given deal. As expected, reputed underwriters tend to be known for their ability to produce quality information consistently and thus are invited or selected to join the IPO process more frequently. Underwriters located in the same nation as the issuing firm tended to have greater chances of being included in the syndicate as their information is more relevant to the location and they are better able to market shares locally. Regional underwriters are smaller players with less breadth and less information; therefore, they are not invited to join syndicates as frequently. Overall, factors that represent an underwriter's ability to produce information are an important determinant for including the underwriter in the syndicate in the BRIC nations.

6. Conclusion

The success of an IPO rests on resolving the asymmetry of information between the firm and investors. Firms rely on the underwriter syndicate to produce the information needed by investors to help them develop the data they need to value the IPO. This study examines the role of factors that relate to the need for information production and the ability of the underwriter to produce information in determining the size and composition of the underwriting syndicate in developing countries.

Our results show that IPO size, underwriter reputation, underwriting experience, geographic proximity, and social network impact syndicate size and the probability that the underwriter is included in the syndicate. Larger IPOs are more complex, and syndicate size is larger, reflecting the need for more firms to manage the deal. Social network variables, especially betweenness, are important for both syndicate size and the probability an underwriter is included in the deal. Firms better positioned within their network are

more likely to build larger syndicates and be included in a syndicate. Underwriter quality, measured by their reputation based on their roles in prior deals, also offers an external sign that issuers can use to pick underwriters that are better able to relieve information asymmetry and successfully manage the IPO. We find that more reputed underwriters are able to accomplish the underwriting process in smaller groups and are more likely to be included in a syndicate. Past experience, often displayed in league tables used in client presentations, also seems to be very important and may explain why regional underwriters and home country underwriters are taking time to build their reputation and improve their chances of being selected into a syndicate. Local underwriters, despite seeing some declines in percentage terms, seem to be participating in syndicates more often, perhaps due to their knowledge of home markets. Underwriters in the same country as the IPO issuer are more selective in choosing with whom they work, perhaps because there is knowledge and technology transfer from larger players to emerging market underwriters. Many underwriters are regional and smaller in size, but regional underwriters are becoming more important in their respective networks.

There are important similarities and differences in the impact of the variables between countries when we run individual country regressions. Large IPOs require larger syndicates across all countries. The impact of underwriter reputation and social network variables, however, is largely present only in China and Brazil, and syndicate size in Russia and India do not depend on the social network variables. While the determinants of syndicate size and probability of inclusion in a syndicate are largely similar across all the BRIC countries, some significant differences remain. The probability of an underwriter being included in a deal is similar across all Brazil, India, and China, and the social network variables are important in all BRIC countries except Russia.

Overall, this research shows that factors that are important in the size and composition of underwriter syndicates for IPOs in the BRIC countries reflect the importance of information production. To be selected and included in a syndicate, underwriters must find ways to prove their ability to produce information not only to the issuers and investors, but also to other underwriters. The internal and external signs of strength as an underwriter lead to greater success in the future, along with greater fees and overall earnings. Firms in these nations should strive to promote their ability to relieve information asymmetry and form strong connections and reputations. As this

continues to happen, our prediction is that local players will continue to consolidate, become more able to bear risk, and gain greater influence in the markets. International players will continue to have great influence and likely move toward less-developed markets to seek greater profits. Future research projects will focus on examining changes in underwriter network structure over time and how firms develop strength in these markets.

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