New determinants to Chinese ADRs' long term performance

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ABSTRACT

This study investigates several new aspects that are associated with Chinese ADRs' long term performance. We find that Chinese ADRs whose underlying firm is incorporated in an offshore center like the Cayman Islands or Virgin Islands perform poorly and whose firm planned to pay dividend at the time of ADRs' IPO perform better in a three year window. We also find that the Chinese ADRs created by the Bank of New York Mellon perform fairly, while those created by J. P. Morgan or Citi Bank under-perform relative to certain benchmarks.

Keywords: Determinants; Chinese ADRs; Deal Features; Long Term Performance

INTRODUCTION

Denominated in U.S. dollars and traded in the U.S., Chinese ADR is a negotiable instrument issued by a U.S. depositary bank. It represents a specific number of underlying Chinese stocks on deposit with a custodian bank. The stocks themselves are denominated in Chinese currency Renminbi, and they can be either non-listed or listed on a formal stock exchange such as the Hong Kong Stock Exchange and the Shanghai Stock Exchange.

Hwang (2011) finds that a country's popularity among Americans affects U.S. investors' demand for securities from that country. He also indicates the fund invested in firms from countries, which Americans dislike the most, have little premium or a large discount. China, due to its difference in political system, economic structure, religion, language, and many other aspects from the U.S., has low popularity score among Americans. It ranks within the bottom two among twenty countries, only slightly better than Venezuela (Hwang, 2011). Consistent with Hwang (2011), Arquette, Brown Jr., and Burdelin (2008) find that the Chinese ADRs carry discount relative to the value of their underlying stocks. Even with this discount, the research shows that the Chinese ADRs still under perform post issuance (Zhang and King, 2010; Foerster and Karolyi, 1999).

The extant literature has contributed a great deal to our understanding of what is associated with the returns of Chinese ADRs. However, after an extensive literature review, we found several new aspects that may be important, but the literature has not specifically examined. These aspects include where the ADRs' underlying firm was incorporated, whether Chinese ADR firms had selling shareholders and intended to pay dividends at the time of ADR's IPO, and lastly which bank is the depositary bank and whether each bank per se is associated with Chinese ADRs performance directly and differently.

Based on the guidance from the extant literature, we project these aspects matter to the Chinese ADRs' long term performance. Using manually collected data, we test the projections and have several new findings. First, we find that where the ADRs' underlying firm was incorporated is related to Chinese ADRs' long term returns. The firms that are incorporated in offshore centers such as the Cayman Islands and Virgin Islands underperform significantly. Second, we find that the issuing firm's intention to pay dividends and the existence of selling shareholders at the time of the ADR's issuance are related to the ADRs' performance. ADRs whose underlying firm intends to pay dividends and for which there were no selling shareholders at the time of the ADR's issuance perform fairly. Lastly, we find that which bank is the depositary bank is also associated with ADRs' return. The Chinese ADRs established by J.P. Morgan and Citi Bank underperform relative to two benchmarks used in this study, while those established by Bank of New York Mellon perform fairly. To the best of our knowledge, this study is the first paper that formally documents these new aspects. It adds to the literature on Chinese ADRs' returns with new perspectives and should be of interest to both academia and practice.

The remainder of the paper is organized as follows: section 2 reviews literature and develops predictions. Section 3 describes the data and the empirical methods. Section 4 reports the empirical results. Section 5 concludes the study.

LITERATURE REVIEW AND PROJECTIONS

Having grown dramatically in recent years, the literature on ADRs has studied ADRs from many perspectives using different countries' ADRs. These perspectives mainly include: what is the purpose for the foreign firms to issue ADRs in the U.S. (Boubakri, Cosset, and Samet, 2010; Zhang and King, 2010); what changes are associated with the issuing firm' operating performance after ADRs' IPO (Chariton and Louca, 2009); how these ADRs perform (Schaub, 2004), what explains the ADRs' performance; how the home market and host market interact (Kutan and Zhou, 2006; Bae, Kwon, and Li, 2008; Xu and Fung, 2002; Yang, 2007; Wang, 2013; Chen, Li and Wu, 2010; Young and Li, 2011); whether the ADRs have diversification benefits to the U.S. investors (Ursel, Lin and Li, 2006). To stay focused, we only cite the more relevant studies in details to develop the projections and support the formation of empirical models.

The motives of ADRs and Chinese ADRs' returns

Boubakri, Cosset, and Samet (2010) find that firm attributes and home-country institutional variables determine a firm's choice of ADRs. Similarly, Zhang and King (2010) find the decision to cross-list or issuing ADRs may involve the legal and accounting standards of foreign markets, more stringent listing requirements and closer regulatory monitoring, significant demands for external capital, an expanded shareholder base, and foreign expertise.

On Chinese ADR s' returns, the literature finds that Chinese ADRs underperform the market in the post-event window ranging from three days to three years (Zhang and King, 2010; Foerster and Karolyi, 1999). He and Yang (2012) divide Chinese ADRs into "homeless" ADRs, home-based or cross-listed ADRs. They find that the night returns of Chinese ADRs are significantly affected by their home market daily returns and the U.S. market night returns. The U.S. day returns appear to be the most significant pricing factor for the day returns of Chinese ADRs. The homeless ADRs are more affected by the U.S. market and less affected by their home market, compared to the cross-listed ADRs. Similarly, using 9 ADRs whose underlying shares are all listed on the Hong Kong Stock Exchange, Kutan and Zhou (2006) study how each market, Hong Kong, mainland China, or New York stock exchange is associated with the return and volatility of these Hong Kong based ADRs. They find that the underlying market (Hong Kong Stock Exchange), host market (New York Stock exchange), and local market (Shanghai Stock exchange) are all important determinants to the returns of Chinese ADRs. The shocks to the underlying market (the Hong Kong Stock Exchange) are significantly associated with ADRs' volatility. It should note that Kutan and Zhou (2006) use only Chinese ADRs whose underlying stocks are listed on the Hong Kong Stock Exchange. Due to this research design, they cannot compare Chinese Hong Kong based ADRs with those whose shares are listed on the Shanghai Stock Exchange or not listed at all.

Using a sample of 19 ADRs, 14 issues from Mainland China and 5 from Hong Kong from 1 January 1990 through 31 December 2002, Schaub (2010) examines the New York Stock Exchange-listed Chinese ADRs. He finds that while Chinese ADRs perform roughly the same as the S&P 500 Index, those trading during the bull market under-performed the market index by over 26% while those trading through the bear market (listed after 1 January 1998) outperformed the S&P 500 by nearly 40%. Furthermore, issues from Hong Kong under-performed the S&P Index by nearly 73% while those issued from other areas of China exceeded the index by over

29%. Their results provide evidence that both market timing and the region of the issues affect portfolio returns from Chinese ADRs.

Prior studies find that expectations on exchange rates also play a role in Chinese ADRs' returns. Arquette, Brown Jr., and Burdelin (2008) find that both ADRs and H-shares have discount relative to their underlying Chinese shares. The changes in both exchange rate expectations and investors sentiment are related to such discounts. Stefan (2011) finds that ADR and H-share discounts predict exchanges changes more accurately than the random walk and forward exchange rate, particularly with long forecast horizons.

Differences among Chinese ADRs that may be related to their performance

Although all of the Chinese ADRs have their operating fundamentals in China, they can have many specific and systematic differences. First, the extent to which their underlying firms/stocks are subject to regulations may differ. Some underlying shares are listed on a formal stock market such as the Hong Kong Stock Exchange while other shares are not. Moreover, for the firms who issue ADRs in the U.S., they can incorporate themselves in a different state or region such as Hong Kong, mainland China, or offshore centers such as the Cayman Islands or Virgin Island. Different states usually have different requirements for disclosure, corporate governance, and investor protections.

Not all Chinese ADRs are created equal (The Wall Street Journal, July 28, 2011). Chinese ADRs may have different deal features from each other. Some intend to pay dividends while others do not. In some deals, original shareholders sell off their stocks at the time of the ADRs' issuance, while in some other deals there are no such selling shareholders. Finally, the Chinese ADRs have been created and brought to the U.S. market by different depositary banks. These differences in Chinese ADRs' underlying firm, stocks, or other deal features may have predicting power on ADRs' long term performance.

Where the underlying firms are incorporated

The firms that issue ADRs are not required to be incorporated in the U.S. For the Chinese ADRs firms, they are often incorporated in Hong Kong, Mainland China, or some offshore centers such as the Cayman Islands and Virgin Islands. Even though their firms' ADRs are listed on the NYSE or NASDAQ, they are not required to comply with the same corporate governance requirements as U.S. firms. Under Section 303A of the NYSE Listed Company Manual, NYSE-listed non-U.S. companies may, in general, follow their home country corporate governance practices in lieu of some of the NYSE corporate governance requirements. The only thing required of them is to disclose the difference. As an example of a difference, the NYSE standards for domestic companies require that non-management directors meet at regularly scheduled executive sessions without management. Foreign ADR firm's non-management directors do not have to meet in executive sessions without management. There is no requirement under the laws of the Cayman Islands that non-management directors meet in executive sessions.[1]

While the offshore centers virtually have no compliance requirements, they also have a low requirement for corporate disclosure. For instance, in case of a director's resignation, the SEC rule requires it be reported within four days, while Cayman law requires director

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[1] For examples, please see online disclosures by Suntech or WSP holdings Ltd.

resignations to be reported within 30 days. Therefore, the disclosure requirements for the ADRs underlying firms are generally weak compared with those of the U.S. firms. The literature has found that weak corporate governance is associated with poor stock performance in both the U.S. and emerging markets (Gompers, Ishii, and Metrick, 2009; Klapper and Love, 2004; Morey, Gottesman, Baker and Godridge, 2009). Thus, we can expect that Chinese ADRs whose underlying firms are incorporated in offshore centers underperform.

On the other hand, being incorporated in offshore centers does have tax benefits. Under current legislation, there is no income, capital gains or corporation taxes payable in the Cayman Islands. In addition, an exempted company may obtain a guarantee for that for a stated period of up to 30 years. A company can be free of taxation notwithstanding legislative changes (The Lawyer, May 5, 2008). It is unclear whether weak corporate governance will dominantly affect Chinese ADRs' returns relative to the tax saving benefits.

The feature of underlying shares and ADRs' other features

Some Chinese ADRs have their underlying shares listed on the Hong Kong Stock Exchange or the Shanghai Stock Exchange. For others, their underlying shares are not listed on any stock exchanges. For the ADRs whose underlying shares are listed on an exchange, in particular, the Hong Kong Stock Exchange, their firms need to comply with the exchange's rules, which include both initial listing and ongoing maintenance rules. These requirements provide further investor protections by increasing the firm's transparency, board independence, and many other aspects (The Hong Kong Stock Exchange, listing rules, Chapter 3).[2]

For the issuer's corporate governance, the Hong Kong Exchange requires the directors of the issuer to satisfy the required levels of skill, care and diligence. It clearly states that every director of a listed issuer must have the character, experience and integrity and is able to demonstrate a standard of competence commensurate with his/her position as a director of a listed issuer (3.08); every board of directors of a listed issuer must include at least three independent non-executive directors (3.10); an issuer must appoint independent non-executive directors representing at least one-third of the board (The Hong Kong Stock Exchange, listing rules, 3.10A).

With these listing rules in place, the Chinese ADRs with their underlying shares listed in the Hong Kong Exchange should have better transparency and governance system than those ADRs that do not have stocks listed in formal exchanges. We expect these firms to have more solid and stronger fundamentals. Thus, their ADRs should perform fairly or better in the long run.

Among the many other features of Chinese ADRs, we are particularly interested in two. One feature is that whether there were selling shareholders who sold off their stocks at the time of an ADR's IPO. These shareholders are often the founders of the firm or other major original shareholders. Although their selling shares through the ADR process can be driven by many reasons such as liquidity, diversification, or private information on the long-term performance of their firms, our projection is that negative private information may be dominant. The original shareholders can easily achieve purposes like liquidity by other means such as taking out loans. If future performance of the underlying firms is strong, there will be no strong reasons for these original shareholders who, as insiders, know the firm better to cash out. Of course, if the market already prices these selling behaviors fairly, we will not observe negative performance of the

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[2] The Shanghai Stock Exchange also has listing rules but they are not as strict as the Hong Kong Exchange's. Its rules are not that much market-oriented either compared with Hong Kong's rules.

ADRs in the long term. However, since the literature well documents that stock underperforms after net insider selling (Kahle, 2000; Clarke, Dunbar, and Hahle, 2001), we expect the Chinese ADRs will perform poorly if there are original selling shareholders at the time of ADRs' IPO.

Another deal feature is the statement the underlying firms made on dividend payments at the time of issuing ADRs. In the prospectus, some firms are very clear that they will not pay dividends, while others state that they may or intend to pay dividends. Although in an efficient market, if a firm does not pay dividends, the capital gains will increase when firms operate well.

However, due to large information asymmetry existing in the Chinese ADR market because of less frequent disclosures, the lack of commitments on dividends leaves investors to trade on segmented or scarce information instead of rather certain fundamentals. As a result, we project that these ADRs will not perform well in the long term.

The depositary banks

As a key partner for the issuer, depositary banks play dominant roles both in establishing an ADR program and in managing it on an ongoing basis. The role of the depositary bank in program establishment includes advising on ADR facility structure, and coordinating with lawyers and investment bankers to ensure that all implementation steps are completed. On an ongoing basis, the depositary banks also provide account management to issuers in exchange of fees. To a great extent, the depository bank is involved as much as the issuing firm.

Even though all depositary banks handle the same basic functions, the quality of each ADR can be different. Since depositaries establish ADRs on an ongoing basis to earn fees, the performance of their older ADRs should affect their success of issuing new ADRs. Then the reputation of depositary should matter in determining their survival and development in the ADRs market.

Bank of New York Mellon, J. P. Morgan, Citi Bank and Deutsche Bank are four major depositary banks for Chinese ADRs. Using preceding 5-year average market share based on market cap, volume or the number of issuers as a measure of reputation, Loureiro (2010) finds that the reputation of the depositary bank matters. He found a positive and significant relation between depositary bank reputation and average abnormal returns estimated for the week of listing. He showed that the reputation for Bank of New York Mellon increases as the year passes by. On this basis, we expect that the ADRs established by different banks may perform differently in a long run. In particular, the ADRs established by Bank of New York Mellon may perform fairly or above the benchmark.[3]

METHODOLOGY

Sample

The definition of Chinese ADRs varies depending on sources. Some providers see firms incorporated in China (including Mainland and Hong Kong) as Chinese firms and define their ADRs as Chinese ADRs. Some providers see a firm whose fundamental business is in China as a Chinese firm, regardless where this firm is incorporated, Mainland China, Hong Kong, or

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[3] It should note that Loureiro (2010) did not examine whether each bank per se is directly associated with ADRs' returns, not even in short time windows. He does include the banks in the model to control for banks' fixed effect and receive insignificant coefficients. His study provides us a base for the projection on reputation.

offshore centers such as the Cayman Islands and Virgin Islands. In this study, we adopt this approach: as long as a firm has the major fundamental business in China, its ADR is considered a Chinese ADR. Our major data sources are Bank of New York Mellon and J. P. Morgan. Since these two sources give a lot of information on different aspects of ADRs, we chose the ADRs overlapping the two sources as the sample. By doing so, we also avoid the possible self-reporting bias associated with a single bank. The sample includes 119 Chinese ADRs with the effective year running from 1993 to 2012.

For each Chinese ADR, besides the variables provided by Bank of New York Mellon and J. P. Morgan, we also manually collected some variables from the 424B forms for the ADR's IPO filing, and both NYSE and NASDAQ's website. These variables include whether the ADR's underlying stock is listed in a formal stock exchange like the Hong Kong Stock Exchange, whether there is a selling shareholder selling stocks during the ADRs' IPO process, and whether the underlying firm intends to pay dividends after the issuance.

Calculating performance for an individual ADR

For each Chinese ADR, we computed its performance using two different approaches. First, we conducted a simple market comparison by examining the difference between the compounded monthly returns over 12, 24 and 36 months minus the compounded market returns over the same time period.

$$\text{ExRet\_D} = \prod_{d=1}^{D}(1+r_{i,d}) - \prod_{d=1}^{D}(1+r_{m,d}) \tag{1}$$

We define $r_{i,d}$ as the monthly return for ADR i on month d, and $r_{m,d}$ as the monthly return for the value-weighted CRSP composites on month d. Thus, ExRet_D is the ADR's excess return over time window D months, which can be 12, 24, or 36 months. It is calculated as the compounded monthly returns net of compounded monthly returns of the composite. Using this measure, a negative value indicates an ADR's underperformance relative to the composite. To reduce the survival bias, for the month in which the ADR was terminated, we used the liquidation return as the last month of the ADR's return. The ADR's excess returns were computed over 12-, 24-, or 36- months, or until the time that the ADR was terminated, whichever is shorter.

The simple market comparison method described above does not control for other typical risk factors; thus our second method of determining an ADR's performance is based upon the factor model. In this model, we not only include market, Small minus Big, High minus Low, Momentum factors, but also include the returns of ADR's home country market index and the value change of its underlying stock's currency relative to U.S. dollars (under indirect quote, foreign currency/U.S. dollar). Extant literature shows that both the home country stock market (He and Yang, 2012; Jutan and Zhou, 2006; Chen, Li and Wu, 2010; Kim, Szakmary and Mathur, 2000) and exchange rate (Brown Jr., and Burdelin, 2008; Stefan, 2011) have an impact on ADRs' returns. For the factor model, we specifically ran the following regression.

$r_{i,d} - r_{f,d} = \alpha_i + \beta_1(r_{m,d} - r_{f,d}) + \beta_2 SMB_d + \beta_3 HML_d + \beta_4 MOM_d + \beta_5 Homeret_d + \beta_6 Homeexrate_d + \varepsilon_{i,d}$ (2)

Again, $r_{i,d}$ is the monthly return for ADR i on month d and $r_{m,d}$ as the monthly return for the value-weighted CRSP composite. $r_{f,d}$ is the monthly risk-free rate of return. *SMB* and *HML* represent the Fama-French (1993) size and book-to-market factors. *MOM* is the Carhart (1997)

momentum factor.[4] α_i represents the monthly abnormal return for ADR *i*. *Homeret* is the monthly return on home country stock index. It can be the Hong Kong Heng Seng index if the ADR's underlying stock is denominated in Hong Kong dollars or Shanghai Stock Exchange composite if the ADR's underlying stock is in Chinese Renminbi. *Homeexrate* is the monthly value change of the U.S. dollar in either Hong Kong Dollar or Chinese Renminbi, depending on what currency the underlying stock is in.

If alpha (α_i) is positive and significant, the ADR experiences superior performance during the time period. Conversely, a negative and significant alpha (α_i) indicates the ADR's underperformance during the time period, which can be 12 months, 24 months, or 36 months starting its first trading day on the CRSP tape. Sig*Alpha_D* has a value of 1 if the alpha (α_i) from model (2) is positive and significant at least at the 10% level for D months, -1 if the alpha is negative and significant at least at the 10% level, or 0 for all other cases. D is the number of months, which can be 12, 24, or 36, or the number of months until the ADR is terminated, whichever is shorter.

It should be noted that although the classical asset pricing theory holds that a single security is a part of investors' well diversified portfolio and only the systematic factors matter, some literature has argued that for a single security, its idiosyncratic risk also matters in demanding returns (Vozlyublennaia, 2012; Pukthuanthong-Le and Visaltanachoti, 2009). We accept the potential fitness of using the factor model on a single security, while also recognizing its potential weakness. However, we believe, using multiple measures of ADR's performance can alleviate this issue. Furthermore, the results are consistent across different measures of performance. The results from equation (2) are also similar to those from the four-factor model without adding stock return for the home market and currency value changes. The results are also similar to those from the Capital Asset Pricing Model (CAPM).

RESULTS

Summary descriptive statistics

Table 1 reports the summary statistics of the sample. The average ADR's excess returns relative to value-weighted CRSP composite index over 12-, 24-, and 36-month are -0.193, -0.318, and -0.236, respectively. All of them are significant at the 1% level, indicating that these Chinese ADRs under-perform the value-weighted CRSP composite. When controlling for the factors, the abnormal returns (alphas) are negatively significant over 12-, 24-, and 36-month, as shown by variables SigAlpha_12, SigAlpha_24, and SigAlpha_36. SigAlpha_12 has a value of 1 if the intercept (Alpha) from the factor model over the first 12 months of ADRs' establishment is positive and significant at least at the 10% level, -1 if the intercept from the factor model is negative and significant at least at the 10% level, and 0 otherwise. The negative means of SigAlpha_12, SigAlpha_24, and SigAlpha_36 indicate that there are more ADRs with negative significant alphas than those with positive significant alphas. This holds for all time windows, 12 months, 24 months, or 36 months. The negative excess returns (ExRet_Ds) and negative SigAlphas_Ds all indicate that these Chinese ADRs, on average, underperform. These results are consistent with many other studies on the long-term performance of ADRs (Zhang and King,

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[4] All factors are pulled from Kenneth R. French's on-line data library.

2010; Ejara and Ghosh, 2004; Luo, Fang and Esqueda (2012).[5] See Table 1 (Appendix) for summary statistics.

In the sample, there are about 10.1% of Chinese ADRs whose underlying firms are incorporated in Mainland China (*Underlyingstate_cndummy* has a mean of 0.101), there are about 4.2% whose firms are incorporated in Hong Kong, and the remaining 85.7% are incorporated in the offshore centers of either the Cayman Islands or Virgin Islands. There are about 58.0% of Chinese ADRs listed and traded on the NYSE, and the rest are traded on the NASDAQ market. The mean of *Underlyinghkshare* is 0.118 indicating that there are about 11.8% of the sample firms whose underlying stocks are listed and traded on the Hong Kong Stock Exchange. *BNY_dummy* has a mean of 0.311, indicating that there are about 31.1% of Chinese ADRs that were established by the Bank of New York Bank Mellon. About 25.2% were established by Citi, 12.6% by the Deutsche Bank, and 31.1% by J. P. Morgan. *Capital_raised_dummy* has a mean of 0.933, representing that 93.3% of the sample firms are raising capital. The average of *Sellingshareholder_dummy* is 0.593, meaning that for 59.3% of the sample, there were selling shareholders selling underlying stocks when their firm issued the ADRs. The *Dividend_dummy* has a mean of 0.204, indicating that there is about 20.4% of ADRs whose underlying firms state that the firms may or intend to pay dividends in the future after the ADRs' issuance.

Chart 1 Appendix) shows the relationships between the number of new Chinese ADRs per year and the level of S&P 500 index at the end of the year. The overall trend is positive (the correlation coefficient is 0.349). The number of new Chinese ADRs increases as the year passes by. However, the number dropped during the mortgage crisis. The accounting scandals that occurred with some Chinese ADRs may also be associated with the decrease in the number of Chinese ADRs in year 2011 (WSJ, June 3, 2011, SEC probes China auditors).

Where the underlying firms are incorporated and ADR's performance

Table 2 (Appendix) reports whether where the underlying firm of the Chinese ADR was incorporated is associated with ADR's performance. The excess return relative to the valve-weighted CRSP composite over 12-, 24-, and 36-month is the dependent variable for the first three models. The coefficients for *underlyngstate_kydummy* are negative and significant at the 1% level across all three time windows. The coefficients on two other dummy variables are not significant. For the last three models, depending on whether the alpha from the factor model is significant at the 10% level or better, the dependent variable may take a value of -1, 0, or 1. It has a value of -1 for a negatively significant alpha, 0 for a non-significant alpha, or 1 for a positively significant alpha. Regardless of the different measures of the ADR's performance, the results are consistent across all the models. They show that the ADRs whose underlying firms are incorporated in offshore centers such as the Cayman Islands and Virgin Islands underperform significantly. ADRs whose underlying firms are incorporated in Mainland China or Hong Kong perform fairly. The results are consistent with the projection that for offshore firms, their weak governance system supersedes the tax benefits in relation to the ADRs' performance.

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[5] For a short term within one year, Gallaghan, Kleiman and Sahu (1999) found ADRs yield positive market-adjusted return.

The feature of underlying share and ADRs

Table 3 (Appendix) reports some deal features that may be related to the ADR's return. As in Table 2, the excess return relative to the valve-weighted CRSP composite over 12-, 24-, and 36-month is the dependent variable for the first three models. The significant nature of their alphas from the factor model is the dependent variable for the last three models.

From Table 3, we can see results in common across two measures of performance and over some time window. For instance, the ADRs whose underlying firm states it may or intend to pay dividends, perform better in the 36 month time window by two measures. Similarly, Chinese ADRs whose underlying stocks are listed on the Hong Kong Stock Exchange also perform better for the 36 month time window. This is consistent across two different performance measures as well. These results show that the ADR's deal features disclosed at the ADR's issuing time do have some predicting power on the ADR's performance.

The depositary banks and their ADRs' performance

Table 4 (Appendix) reports whether which bank is the depositary bank is associated with ADR's return. The excess return relative to the valve-weighted CRSP composite over 12-, 24-, and 36-month is the dependent variable for the first three models. The coefficients for Citi and J. P. Morgan are negative and significant at the 5% level or better across all three time windows.

For the last three models, depending on whether the alpha from the factor model is significant at the 10% level or better, the dependent variable may take a value of -1, 0, or 1. This is in correspondence to a significant and negative alpha, non-significant alpha, and significant and positive alpha, respectively. The last three models show that Citi, Deutsche Bank, and J. P. Morgan are all associated with ADRs returns negatively and significant at least at the 10% level. If we combine all of the models, we can see that the ADRs established by Citi and J. P. Morgan under-perform while the ADRs by Bank of New York Mellon perform fairly. These findings are consistent with Loureiro (2010) who shows that Bank of New York Mellon has a good reputation with ADRs.

CONCLUSION

Chinese ADRs have attracted attention due to their fundamentals linked with China. Although they are under the same flag of Chinese ADRs, these ADRs have many different aspects. Their underlying firms may be incorporated in different regulatory locations, which have different level of requirements for corporate governance and corporate disclosure. Some ADRs have underlying stocks that are listed and traded on a formal stock exchange; for other Chinese ADRs, their underlying stocks are not publicly traded at all. Here, the degree to comply with the exchange rules is again different. Furthermore, during the ADRs' IPO process, for some ADRs, there are selling shareholders selling stocks; for some ADRs, their underlying firms claim they do not plan to pay dividends at all while others claim that they may do so.

All of these features may be associated with ADRs' performance, but the extant literature does not study them. In this study, we examine these aspects and find that where the underlying firm is incorporated, whether it intends to pay dividend and has selling shareholders, and which bank established the ADR all matter. We find that the ADRs whose underlying firm is incorporated at offshore centers such as the Cayman Islands and Virgin Islands perform poorly,

ADRs with selling shareholders perform poorly for certain time window with a benchmark, and ADRs whose underlying firms promise to pay dividends perform fairly or better. The ADRs created by the Bank of New York Mellon perform fairly, while others created by J. P. Morgan or Citi under-perform relative to certain benchmarks. This study increases our knowledge of the determinants to Chinese ADR returns.

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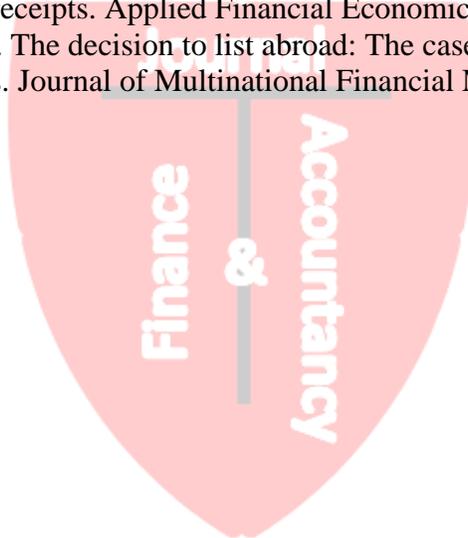
APPENDIX

Table 1: Summary Descriptive Statistics

Table 1 reports the summary statistics of the sample. ExRet_D is the ADR's excess return over time window of D months, which can be 12, 24, or 36 months. It is calculated as the compounded ADR's monthly returns net of compounded monthly returns of the value-weighted CRSP composite over the different time windows. SigAlpha_D has a value of 1 if the intercept (Alpha) from the factor model over the first D months of ADRs' establishment is positive and significant at the 10% level or better, -1 if the intercept from the factor model is negative and significant at the 10% level or better, and 0 otherwise. Underlyingstate_cndummy is a dummy variable which takes a value of 1 if the ADR's underlying firm is incorporated in Mainland China, and 0 other wise. Underlyingstate_hkdummy is a dummy variable which takes a value of 1 if the ADR's underlying firm is incorporated in Hong Kong, and 0 otherwise. Underlyingstate_kydummy is a dummy variable, which takes a value of 1 if the ADR's Underlying firm is incorporated in the Cayman Islands, or Virgin Islands, or other offshore center, and 0 other wise. NYSE_dummy is a dummy variable if the ADR is listed in NYSE, and 0 otherwise. Underlyinghkshare is a dummy variable taking a value of 1 if the ADR's underlying stock is listed in the Hong Kong Stock Exchange, and 0 otherwise. BNY_dummy is a dummy variable taking value of 1 if the ADR was established by the Bank of New York Mellon, and 0 otherwise. CITI_dummy is a dummy variable taking value of 1 if the ADR was established by Citi Bank, and 0 otherwise. DB_dummy is a dummy variable taking value of 1 if the ADR was established by the Deutsche Bank, and 0 otherwise. JPM_dummy is a dummy variable taking value of 1 if the ADR was established by J. P. Morgan, and 0 otherwise. Capital_dummy is a dummy variable taking value of 1 if the ADR was issued to raise capital by the underlying firm, and 0 otherwise. Sellingshareholder_dummy is a dummy variable taking value of 1 if at the time of ADR's issuance, there were selling shareholders who sold off stocks. Dividend_dummy is a dummy variable taking value of 1 if at the time of ADR's issuance, the underlying firm stated it would, may, or intends to pay dividends, and 0 otherwise. T-values are in the parentheses. ***, **, and * indicate the 1%, 5% and 10% significant level, respectively.

Variable	N	Mean	Median	Maximum	Minimum
ExRet_12	119	-0.193*** (-3.647)	-0.343	2.554	-1.059
ExRet_24	119	-0.318*** (-4.91)	-0.454	3.872	-1.440
ExRet_36	119	-0.236*** (-2.748)	-0.490	3.197	-1.574
SigAlpha_12	119	-0.210*** (-3.85)	0.000	1.000	-1.000
SigAlpha_24	119	-0.168*** (-3.72)	0.000	1.000	-1.000
SigAlpha_36	119	-0.168*** (-3.85)	0.000	1.000	-1.000
Underlyingstate_cndummy	119	0.101	0.000	1.000	0.000

Underlyingstate_hkdummy	119	0.042	0.000	1.000	0.000
Underlyingstate_kydummy	119	0.857	1.000	1.000	0.000
NYSE_dummy	119	0.580	1.000	1.000	0.000
Underlyinghkshare	119	0.118	0.000	1.000	0.000
BNY_dummy	119	0.311	0.000	1.000	0.000
CITI_dummy	119	0.252	0.000	1.000	0.000
DB_dummy	119	0.126	0.000	1.000	0.000
JPM_dummy	119	0.311	0.000	1.000	0.000
Capital_dummy	119	0.933	1.000	1.000	0.000
Sellingshareholder_dummy	108	0.593	1.000	1.000	0.000
Dividend_dummy	108	0.204	0.000	1.000	0.000
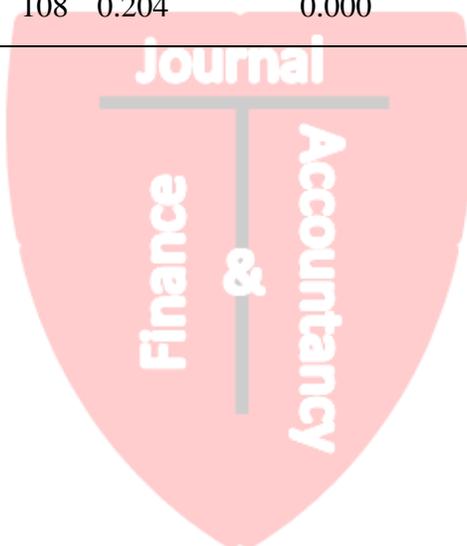
Chart 1: Time Trend

The level of S&P 500 and the number of new ADR issuances
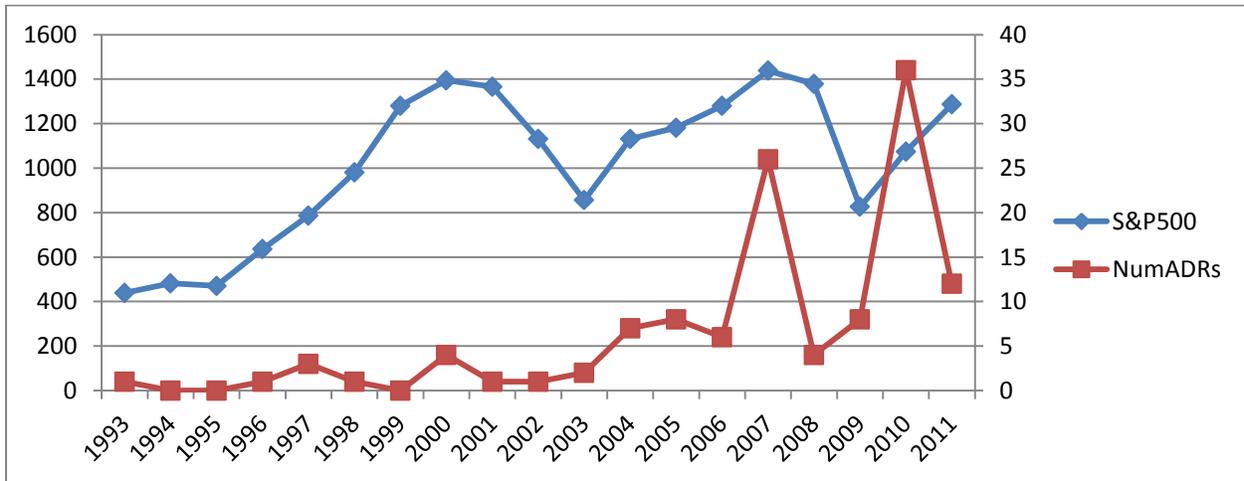
Year	Adj. Close Price	N
1993	438.78	1
1994	481.61	0
1995	470.42	0
1996	636.02	1
1997	786.16	3
1998	980.28	1
1999	1279.64	0
2000	1394.46	4
2001	1366.01	2
2002	1130.2	1
2003	855.7	2
2004	1131.13	7
2005	1181.27	8
2006	1280.08	6
2007	1438.24	25
2008	1378.55	3
2009	825.88	8
2010	1073.87	35
2011	1286.12	12
Sum		119

Tables 2: States in which the ADRs firms were incorporated

Table 2 reports where the ADR's underlying firm was incorporated is associated with ADR's performance. For models from (1) to (3), the excess returns over 12-, 24-, and 36- month time windows are the dependent variables. For models from (4) to (6), whether the intercept (alpha) from the multiple factor models over 12-, 24- and 36- month time windows is positively significant, negative significant or non-significant at all is the dependent variable. Underlyingstate_cndummy is a dummy variable, which takes a value of 1 if the ADR's underlying firm is incorporated in Mainland China, and 0 other wise. Underlyingstate_hkdummy is a dummy variable which takes a value of 1 if the ADR's underlying firm is incorporated in Hong Kong, and 0 other wise. Underlyingstate_kydummy is a dummy variable which takes a value of 1 if the ADR's underlying firm is incorporated in the Cayman Islands, or Virgin Islands, or other offshore center, and 0 otherwise. T-values are in the parentheses. ***, **, and * indicate the 1%, 5% and 10% significant level, respectively.

Variables	Relative to VWCRSP composite Dep: ExRet_D			Enhanced Factor Model Dep: SigAlpha_D		
	12	24	36	12	24	36
	(1)	(2)	(3)	(4)	(5)	(6)
Underlyingstate_cndummy	-0.230	-0.177	0.278	0.250	0.000	0.000
	(-1.40)	(-0.87)	(1.06)	(-1.45)	(0.00)	(0.00)
Underlyingstate_hkdummy	-0.200	0.019	0.476	0.000	0.218	0.200
	(0.77)	(0.06)	(1.17)	(0.00)	(0.92)	(0.95)
Underlyingstate_kydummy	-0.187***	-0.351***	-0.331***	-0.216***	-0.206***	-0.205***
	(-3.26)	(-5.02)	(-3.66)	(-3.64)	(-4.27)	(-4.44)
N	119	119	119	119	119	119
Adj.r-sq	0.079	0.162	0.099	0.094	0.120	0.128

Table 3: Some deal features and ADRs' performance

Table 3 reports whether some deal features are associated with ADR's performance. For models from (1) to (3), the excess returns over 12-, 24-, and 36- month time windows are the dependent variables. For models from (4) to (6), whether the intercept (alpha) from the multiple factor models over 12-, 24- and 36- month time windows is positively significant, negative significant or non-significant at all is the dependent variable. NYSE_dummy is a dummy variable if the ADR is listed in NYSE, and 0 otherwise. Capital_dummy is a dummy variable taking value of 1 if the ADR was issued to raise capital by the underlying firm, and 0 otherwise. Sellingshareholder_dummy is a dummy variable taking value of 1 if at the time of ADR's issuance, there were selling shareholders who sold off stocks. Dividend_dummy is a dummy variable taking value of 1 if at the time of ADR's issuance, the underlying firm stated it would, may, or intends to pay dividend, and 0 otherwise. Underlyinghkshare is a dummy variable taking a value of 1 if the ADR's underlying stock is listed in the Hong Kong Stock Exchange, and 0 otherwise. T-values are in the parentheses. ***, **, and * indicate the 1%, 5% and 10% significant level, respectively.

Variable	Relative to VWCRSP composite Dep: ExRet_D			Enhanced Factor Model Dep: SigAlpha_D		
	12	24	36	12	24	36
	(1)	(2)	(3)	(4)	(5)	(6)
NYSE_dummy	-0.081	-0.108	-0.256	-0.266**	-0.213**	-0.188*
	(-0.67)	(-0.81)	(-1.54)	(-2.32)	(-2.16)	(-1.94)
Capital_dummy	-0.129	-0.381***	-0.384**	0.096	-0.071	-0.148
	(-1.06)	(-2.82)	(-2.27)	(0.82)	(-0.70)	(-1.51)
Sellingsharehol der_dummy	-0.018	0.099	0.190	-0.339***	-0.069	0.0238
	(-0.15)	(0.73)	(1.11)	(-2.89)	(-0.69)	(0.24)
Dividend _dummy	-0.001	0.158	0.557***	0.153	0.115	0.207*
	(-0.01)	(0.97)	(2.71)	(1.09)	(0.95)	(1.74)
Underlying hkshare	-0.043	0.304	1.233**	0.181	0.563*	0.523*
	(-0.12)	(0.76)	(2.40)	(0.52)	(1.89)	(1.79)
N	108	108	108	108	108	108
Adj. R-sq	0.049	0.190	0.157	0.171	0.149	0.152

Table 4: Depositary banks and ADRs' performance

Table 4 reports whether who is the ADR's depositary bank is associated with ADR's performance. For models from (1) to (3), the excess returns over 12-, 24-, and 36- month time windows are the dependent variables. For models from (4) to (6), whether the intercept (alpha) from the multiple factor models over 12-, 24- and 36- month time windows is positively significant, negative significant or non-significant at all is the dependent variable. BNY_dummy is a dummy variable taking value of 1 if the ADR was established by the Bank of New York Mellon, and 0 otherwise. Citi_dummy is a dummy variable taking value of 1 if the ADR was established by Citi Bank, and 0 otherwise. Db_dummy is a dummy variable taking value of 1 if the ADR was established by the Deutsche Bank, and 0 otherwise. JPM_dummy is a dummy variable taking value of 1 if the ADR was established by the J. P. Morgan, and 0 otherwise. T-values are in the parentheses. ***, **, and * indicate the 1%, 5% and 10% significant level, respectively.

Variables	Relative to VWCRSP composite Dep: ExRet_D			Enhanced Factor Model Dep: SigAlpha_D		
	12	24	36	12	24	36
	(1)	(2)	(3)	(4)	(5)	(6)
BNY_dummy	-0.088	-0.195*	-0.012	-0.135	-0.054	0.000
	(-0.93)	(-1.68)	(-0.08)	(-1.37)	(-0.67)	(0.000)
CITI_dummy	-0.224**	-0.347**	-0.363**	-0.200*	-0.267***	-0.233***
	(-2.12)	(-2.69)	(-2.13)	(-1.83)	(-2.99)	(-2.74)
DB_dummy	-0.192	-0.248	-0.135	-0.267*	-0.333***	-0.333***
	(-1.28)	(-1.36)	(-0.56)	(-1.72)	(-2.64)	(-2.77)
JPM_dummy	-0.272***	-0.445***	-0.396***	-0.270***	-0.135*	-0.216***
	(-2.86)	(-3.83)	(-2.59)	(-2.74)	(-1.68)	(-2.82)
N	119	119	119	119	119	119
Adj. R-sq	0.086	0.159	0.060	0.089	0.114	0.138