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The Long-Run Performance of Global Equity Offerings

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Abstract

This study investigates the long-run return performance of non-U.S. firms that raise equity capital in U.S. markets. Overall, our sample of 333 global equity offerings with U.S. depositary receipt (ADR) tranches between 1982 and 1996 from 35 countries in Asia, Latin America, and Europe under-perform local market benchmarks of comparable firms by 8% to 15% over the three years following issuance. We show that differences in long-run returns are related to the scope and magnitude of investment barriers that induce segmentation of capital markets around the world. While companies from markets with significant investment barriers for foreigners that issue equity on major U.S. exchanges outperform their benchmarks, those from segmented markets that issue equity in the U.S. by way of Rule 144A private placements significantly underperform. We also show that inter-market competition for order flow in the post-issuance period affects the long-run return performance. Post-issuance buy-and-hold abnormal returns are most significantly and positively related to the ability of the offering to generate a larger share of U.S. trading volume.

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1. Introduction

Increasing numbers of companies are raising capital internationally by way of global equity offerings. In the U.S., the primary vehicle through which non-U.S. companies raise equity capital is the issuance of American depositary receipts (DRs), which are negotiable certificates sponsored by U.S. depositary banks that represent the company's publicly traded shares in their home market.[1] In 1999, for example, almost $22 billion was raised through new DR programs, an amount ten times that raised in 1990 (Figure 1).[2] Moreover, trading volume of exchange-listed DRs has reached 17 billion shares ($667 billion in value), more than quadruple that in 1990 (Figure 2).

[insert Figures 1 and 2 here]

This study provides an analysis of the investment performance of non-U.S. firms that raise capital in the U.S. through global equity offerings (hereafter, GEOs). Our sample includes 333 GEOs with DR tranches in the U.S. for companies from 35 countries in Asia, Latin America and Europe and spans the period from 1982 to 1996.[3] Our primary motivation to examine this question arose from the vast literature on the long-run performance of domestic equity offerings, such as initial public (IPOs) and seasoned equity offerings (SEOs) that has followed the seminal studies by Ritter (1991), Speiss and Affleck-Graves (1995) and Loughran and Ritter (1995). While these U.S.-based studies uncovered poor long-run performance following equity issues, they were complemented by wide-ranging results in Japan, Germany, France, U.K. and other countries.[4] Institutional differences in the equity issuance process around the world make comparisons across

[1] DRs are quoted, trade and pay dividends in the currency of the country in which they trade (U.S. dollars) and trade in accordance with clearing and settlement conventions of U.S. markets. The depositary bank that sponsors the DR program provides all the global custodian and safekeeping services for a fee. Each depositary receipt denotes shares that represent a specific number of underlying shares in the home market.

[2] Bank of New York's *Depositary Receipts: 1999 Year-End Market Summary* December 31, 1999.

[3] The capital raising database is compiled and maintained by the ADR Division of the Bank of New York.

[4] For example, Loughran, Ritter and Rydqvist (1994) compare short-run underpricing of IPOs for 24 countries. Kang and Stulz (1996), Cai and Wei (1997) and Hamao, Packer and Ritter (2000) study short-run underpricing and long-run underperformance of Japanese issues. See also Levis (1993) for U.K.

such research studies difficult. By contrast, our study of equity offerings with U.S. DRs has a common target investor market, which affords us an experimental design that can address this research challenge.

Another important motivation for our study stems from a unique attribute of equity capital raising in the U.S. DR market. Global companies have a choice of issuing equity in the U.S. by means of an exchange-listed program or a private placement, known as a Securities Exchange Commission Rule 144A offering. Exchange-listed programs for the New York and American Stock Exchange or NASDAQ over-the-counter market (known as Level III DRs) necessitate full registration and disclosure of financial statement information exactly as U.S. companies. By contrast, Rule 144A private placements require only nominal registration and limited disclosure, but are available only to qualified institutional buyers (QIBs) and can only trade over-the-counter using the PORTAL system. The rule was adopted in April 1990 to expand the liquidity of the private placement market and to facilitate access to U.S. markets for non-U.S. issuers that were not willing or able to undergo registration under the 1934 Securities Act.

Why is this dichotomy of capital-raising strategies important? It provides for a natural experiment to assess how direct or indirect barriers to invest overseas, such as taxes, legal and regulatory restrictions, and informational asymmetries affect how securities are priced in different markets. After all, GEOs by means of DRs in the U.S. can effectively overcome these barriers for pricing. Theoretical models by Stapleton and Subrahmanyam (1977), Errunza and Losq (1985) and Alexander, Eun and Janakirananan (1987) demonstrate how companies from segmented markets that issue equity overseas can lower their cost of capital and increase the market value of their shares. Extensive empirical evidence consistent with these predictions exists in the literature on cross-border listings (Alexander, Eun and Janakiranan, 1988; Foerster and Karolyi, 1993,

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issues, Gajewski and Ginglinger (1998) for French issues, and Gebhardt and Heiden (1998) for German issues.

1999; Miller, 1999), but none of these tests focus on long-run returns and the dichotomy between exchange-listed and Rule 144A offerings (Karolyi, 1998, surveys the cross-listing literature). Measuring long-run returns around GEOs may be an especially useful way to gauge the impact on the firm's global cost of capital because of the many other firm-specific, issue-specific and even market-wide (e.g. market liberalizations) influences that are associated with such events (Henry, 2000, Bekaert and Harvey, 2000). Our paper, therefore, tests the *market segmentation hypothesis* which proposes that the returns performance following exchange-listed and Rule 144A GEOs will be different, but only for companies from markets with more stringent direct investment barriers or from countries with indirect barriers, such as wider gaps in reporting and continuous disclosure requirements relative to U.S. standards.[5]

A third motivation for our study arises from the relationship between liquidity and post-issuance share price performance. In a GEO, when a company places a tranche of its equity issue in a new market, it necessarily divides the market for trading of the stock between the home market and the new overseas market. Migration of order flow to the new overseas market following the issue may be perceived as value-enhancing for the firm because the new market may be more liquid than the home market. However, changes in liquidity and volatility from this shift in order flow may also adversely affect the quality of the home market by "fragmenting" the market for the shares. This is a growing concern for policymakers, especially in emerging markets (Smith and Sofianos, 1997) and especially because of the attraction of the large and liquid U.S. market (Fanto and Karmel, 1997). On the other hand, if the informational linkages between the two markets are strong, multi-market-trading may inspire competition among market makers and could enhance overall liquidity in both markets. Theoretical work by Pagano (1989), Chowdhry and Nanda

[5] Our market segmentation hypothesis is most closely related to the "differential demand" model of Stulz and Wasserfallen (1995), "differential valuation" model of Domowitz, Glen and Madhavan (1997) and, especially, the recent studies by Errunza and Miller (1998) and Henry (2000).

(1991) and, more recently, Domowitz, Glen and Madhavan (1998) suggest that the effect of multi-market trading on liquidity is complex and requires balancing of the costs of order flow migration against the benefits of increased inter-market competition. Pagano (1989) develops a simple two-market model in which all traders have the same information but in which the traders try to anticipate other traders' demands and the numbers of traders in each location of trading. He identifies the conditions for a two-market "knife-edge" equilibrium in which trading in both markets is sustainable. Chowdhry and Nanda (1991), on the other hand, extend Admati and Pfleiderer's (1988) model with asymmetric information to a two-market setting and allow for informed and liquidity traders and, separately, for large and small liquidity traders, where only the former can choose trading location. They predict that one of the markets will emerge as the dominant one to which all informed and large liquidity traders gravitate, a phenomenon they call "winner take most." One of the features of GEOs distinct from purely-domestic offerings is the introduction of such inter-market competition for liquidity.[6] As a result, we test the *multi-market trading hypothesis* for GEOs by examining whether the returns performance will be different for GEOs which achieve a proportionately greater fraction of trading in the U.S. DR market (U.S. as "winner takes most") compared to those for which the trading volume and order flow migrates back to the home market.

Overall, we find that the buy-and-hold abnormal returns to investors of GEOs underperform local-market benchmarks of comparable firms in the three years following issuance. However, long-run returns to investors in firms that issue equity by way of Rule 144A private placements or that issue equity on public exchanges are significantly related to investment barriers across markets. Specifically, we show that private placement DR issues underperform their

[6] Recent empirical studies by Mittoo (1997), Hargis (1997), Smith and Sofianos (1997), Foerster and Karolyi (1998) and Domowitz et al. (1998) show that the global distribution of trading volume and order flow for cross-listed stocks vary significantly and impact trading costs, stock returns and volatility. Karolyi

benchmarks, on average, but especially those that come to the U.S. from countries with low home-market accounting standards. By contrast, those firms that attempt GEOs on major public exchanges that come from emerging or developed markets with low accounting standards tend to outperform their benchmarks. We also find post-issuance abnormal return performance is significantly and positively related to the ability of the firm to capture a proportionately larger share of U.S. trading volume. To the best of our knowledge, these findings are new and we interpret them in the context of models of international capital market segmentation and of multi-market trading and liquidity.

Section 2 describes our sample of GEOs. Section 3 presents our long-run returns performance results and we explore various explanations including the two main hypotheses for those returns in Section 4. Section 5 concludes our paper with interpretations of the findings and proposals for future research.

2. Data

Our objective is to evaluate the investment performance of non-U.S. firms that raise capital through global equity offerings with a U.S. tranche of DRs. The capital raising data are obtained directly from the Bank of New York (BoNY). BoNY is one of the leading depositary banks in the world and their ADR division has initiated development of a database of capital raising DR issues from 1982 to the present. These data include composite information on the issuing company, home country, type of offering, date of offering, offering price, capital raised, global and U.S. tranche and listing market (Rule 144A, AMEX, Nasdaq, or NYSE).[7] From the 378 capital raising events in the BoNY database, we exclude all American depositary convertible debt

(2000) investigates this issue in a clinical study of the DaimlerChrysler new global registered share program.

[7] We cross-referenced the data with *Securities Data Corporation* New Issues database. When there were discrepancies, we deferred to the BoNY database.

and warrant offerings. We also require that home market and/or ADR price and volume series are available from *Datastream International*. The final sample consists of 333 GEO common stock offerings. Descriptive statistics are presented in Table 1.

[insert Table 1 here]

Our sample has considerable industrial dispersion across 36 industry groups and geographic dispersion across 35 countries. Firms in the Banking (18), Telecommunications (23) and Utilities (26) sectors lead the sample. By region, 139 firms are from Asia, 123 from Europe, 66 from Latin America, and 5 from South Africa. The table indicates the 16 countries we categorize as "emerging markets" using The Economist's *Economic Intelligence Unit* reports and we find that emerging markets represent 56 percent of the sample (185 of 333). Table 1 also exhibits (in parenthesis) a score per country based on an index (0 to 100) from the Center for International Financial Analysis and Research (LaPorta, Lopez-de-Silanes, Shleifer and Vishny, 1998) that rates home-country accounting standards. The index measures the inclusion or omission of 90 items from income statements, balance sheets, and fund flow statements of companies in those countries. The most active year was 1994 with 105 ADRs (see also Figure 1). The majority of firms (197) chose to raise capital privately, rather than listing on an exchange (136 firms). Most exchange-listed firms chose the NYSE (99), followed by Nasdaq (33) and AMEX (3). Not surprisingly, the private offerings, which require only nominal registration and limited disclosure requirements, are dominated by emerging markets (135 of 197 offerings, or 69 percent), while the developed market firms comprise 63 percent (86 of 136 offerings) of the public offerings.

Though not reported in the table, the mean (median) market capitalization of our firm is $2.871 billion ($0.943 billion). The mean (median) amount of capital raised was $276 million ($86 million) and ranged from $1.3 million to $3.5 billion. The mean (median) size of the U.S. DR tranche is $135 million ($73 million) which represents around 7 percent of the market

capitalization of the firm on average, and which ranges from less than 0.1 percent to a maximum of 72.8 percent.

3. Long Run Return Performance of Global Equity Offerings

3.1 Holding Period Returns

Methodologically, we compute long-horizon returns in a manner similar to Ritter (1991) and others. Monthly holding period returns for each firm are calculated as total geometric returns over consecutive monthly periods 12 months prior to and 36 months subsequent to the issuance day. We obtain monthly stock prices and dividends in the home market denominated in local currency from *Datastream International*.[8] Consistent with previous studies, we exclude day 0 from monthly calculations, since many investors are not able to purchase the stock at the issue price. The monthly intervals are computed from the issuance day in fixed-length (21-day) intervals regardless of calendar month-end dates. For each month, we calculate an average mean total return across firms. We cumulate the portfolio's geometric return over the different periods of interest (from 12 months prior to issuance to as long as 36 months following issuance). This cumulative return (CR) method (presented in Tables 2 to 4 and Figure 3) implicitly assumes *monthly rebalancing*. To facilitate our cross-sectional analysis of long-run performance (presented in Tables 5 through 8), we also calculate long-run returns in an alternative manner that focuses on *buy-and-hold* returns (BHR). For each stock, we calculate its geometric total return over the entire period of interest (from 12 months before issuance to 36 months following issuance) and various shorter horizons as well.

[8] We also collect U.S. dollar-denominated prices and dividends for the ADRs trading in the U.S. but this information is only available for the subset of publicly-listed firms on the U.S. exchanges. For this sample, volume data on the total number of shares traded in the home and DR markets are also obtained. The DR volume is adjusted for the bundling ratio of the number of home-market shares per depositary receipt, as given by BoNY.

For our CR and BHR returns, we compare long-run performance against several alternative benchmarks. For example, for the local stock returns denominated in local currency, we employ a local national index return drawn from *Datastream International*. These returns are computed using index values and reinvested dividends aligned to the same fixed-length intervals around the issuance day of the GEO sample firm. This benchmark test reflects the perspective of the representative local market investor. For each month, we calculate an average mean abnormal return across firms (referred to as "AR" in the tables) and cumulative abnormal returns (denoted "CAR") are computed using the same monthly rebalancing procedure above. When calculating long-run (e.g., three-year) CAR performance with ADRs introduced within the last three years as well as those with missing data during some of the months, we assign these firms abnormal returns of zero during those months (i.e., we assume their return is equal to the market return). As robustness checks, we also compute local stock returns denominated in U.S. dollars (using aligned exchange rates, also from *Datastream International*) and compare these U.S. returns to the U.S. Datastream index over the same period. For the subset of GEOs that are public exchange-listed DR programs, we compute U.S. dollar returns using DR prices and compare this to the U.S. index over the same period. These two benchmark tests reflect the perspective of the representative U.S. investor, who can choose to invest directly in the local markets or to purchase DRs on U.S. exchanges. Finally, for the individual stock *buy-and-hold* abnormal returns in the cross-sectional tests, we compute BHAR in a parallel manner to BHR above, except that we subtract the geometric total return on the benchmark index from that of the individual stock.

There are two potential problems with using indices as benchmarks. Important recent contributions to test methodology for long run abnormal stock returns by Barber and Lyon (1996, 1997), Lyon et al. (1999) and Kothari and Warner (1997) suggest that significant biases can arise

when benchmarking solely with indices.[9] Moreover, in many cases, the firms that pursue GEOs with U.S. tranches are among the largest (in capitalization) representatives of their respective markets. As a result, they often comprise a significant component of the market indices. To ensure robust results, we therefore compute CAR and BHAR long-horizon returns using a matching-firm approach, which can alleviate both of these problems. To this end, we identify matching firms in each local market using the following criteria. The firms must not have listed in the U.S. as an ADR and must be a member of the Morgan Stanley Capital International index list to ensure liquidity and U.S. investibility. We then identified the firm that has a book-to-market ratio within 25 percent of that of the sample firm and, as a tertiary criterion, a market value as close as possible to the sample firm. If no match on market-to-book was feasible, a market-value match was used, and, if the market value of the matched firm was "too small" (less than 10 percent of the sample firm), no feasible match was declared. For our sample, successful matches were obtained for 277 GEO firms. From the U.S. investor's perspective, we compare the U.S. dollar denominated local stock return and the ADR return (for the subset for which we had ADR prices) to a comparable U.S. firm selected from the population at large that meets certain criteria. We identified a U.S. firm that is issuing equity within the same month as our sample GEO firm. The GEOs that represent initial offerings are matched with U.S. IPO firms; secondary GEO offerings are similarly matched with U.S. SEO firms. Among U.S. firms that meet this criterion, we further identify a firm that has a book-to-market ratio within 25 percent of that of our sample GEO firm and, as a tertiary sort criterion, a market capitalization closest to the GEO firm.

3.2 Pre-issuance and Post-issuance Return Performance

[9] Fama (1998) criticizes the long-run performance methodology because of benchmarking problems. See also, challenges to equal- versus value-weighting of component stocks in rebalancing returns calculations (Brav and Gompers, 1997) and correlations of returns across events (Brav, 2000). See also Mitchell and Stafford (1998), Eckbo, Masulis and Norli (2000) and, most recently, Loughran and Ritter (2000).

We begin by examining overall returns both prior to and subsequent to issuance. Table 2 presents both raw and abnormal monthly returns (assuming rebalancing) for the overall sample and with cumulative returns (CRs, CARs). Results are presented in local currency return relative to the local national market index and relative to the individual matching firm.

[insert Table 2 here]

Overall, local-market returns average 53 percent in the 12 months prior to issuance. Subsequent to the issuance, raw returns cumulate another 29 percent over the next three years. When local market index performance is accounted for in the year prior, however, cumulative abnormal returns of only 15 percent obtain, which suggests that these GEOs follow on strong local market performance. Subsequent to the issuance, cumulative abnormal returns (based on monthly rebalancing) are -15 percent over the next three years, essentially eliminating the pre-issuance gain. Our inferences are robust to the matching firm benchmark, even though it is for a smaller set of firms. The pre-issuance period CAR with matching firms totals 16 percent and the post-issuance period decline reaches almost 9 percent during the next 36 months. While there are some months that contribute to the post-issuance period decline, the largest single month negative abnormal return is –2.12 percent and the statistically significant declines are distributed across different months.

Cumulative raw and abnormal returns are in Figure 3. In these figures, we calibrate the cumulative returns relative to the initial month following issuance for the post- and pre-issuance periods. Recall that we omit the initial-day returns from all calculations – all the cumulative returns and net valuation calculations would only be increased by 1 percent, if included. The figure indicates that the cumulative abnormal returns relative to the local benchmark represented about a net valuation effect over the 48-month event period of 6 percent (16 percent pre-issuance run-up and 10 percent post-issuance decline). It is important to be cautious about overall returns since the post-issuance return period includes both IPOs and SEOs, whereas the pre-issuance period

includes only SEOs. Moreover, long-run returns for Level III public issuances are mixed with those for 144A private placements.

[insert Figure 3 here]

3.3 Comparing the Performance of Private versus Public Issues, IPOs versus SEOs

Table 3 presents separate results related to both public versus private ADRs and IPO versus SEOs for the local index and matching-firm benchmarks. Some differences appear for the two classifications. Public issues experience a pre-issuance run-up of 51 percent in raw returns and about 18 percent in excess of the index benchmark and 14 percent relative to individual matched firms. In the subsequent three years, cumulative abnormal returns decline by 16 percent relative to the local index and by 6 percent relative to the matched firm. Only that relative to the local index is significantly different from zero at the 1 percent level. The private ADRs experience a similar pre-issuance raw return run-up of 55 percent, which represents 13 percent in excess of the local benchmark and a 15 percent increase relative to their matched firms. In the subsequent three years, however, their post-issuance abnormal returns cumulatively decline by only 14 percent with the local index benchmark, a statistically significant result at the 1 percent level, and almost 10 percent relative to the matched firm benchmark, also statistically significant but at the 10 percent level. It is difficult to discern any significant differences in the patterns of abnormal returns over the issuance period. It appears that the net valuation effect of both the public and private issues is modestly negative relative to the index benchmark and positive at around 8 to 10 percent relative to the matching firms.

[insert Table 3 here]

Table 3 also shows that the post-issuance declines are not driven solely by the SEOs in the sample. The post-issuance declines over three years are almost identical at 17 percent for both IPOs and SEOs using the local index benchmark, whereas the SEOs a more dramatically negative decline (11 percent versus 6 percent) relative to the local matching firm benchmark. Figure 5

displays the time-series. Overall the net valuation effects for the IPOs (absent the pre-issuance runup) ranges from -6 to -17 percent. For the SEOs, a positive valuation effect of 15 to 16 percent relative to both benchmarks is negated by the 11 to 17 percent declines relative to the benchmarks during the post-issuance period.

3.4 Robustness Tests of Performance with U.S. Benchmarks

Table 4 presents the results of two robustness tests. The first test re-evaluates the long-run return performance of the GEOs using U.S. dollar-denominated returns and relative to U.S. benchmarks. That is, monthly returns are adjusted using exchange-rate quotes and abnormal returns are computed relative to the U.S. dollar denominated U.S. Datastream index and to a U.S. matching IPO or SEO firm. All experiments for public versus private offerings and those comparing IPOs and SEOs are performed. Panel A reports the main findings. Overall there is a currency effect. The pre-issuance run-up is only 49 percent and post-issuance raw returns performance is only 11 percent, both lower than those in Table 3, which implies that U.S. dollar appreciated on average over this 1982 to 1996 period relative to a currency basket defined by our GEO firm sample. The results also indicate that the U.S. market was a more challenging benchmark for these GEOs; in fact, the growth of the U.S. equity market was likely one of the primary attractions for these firms. Cumulative post-issuance returns declined between 29 and 43 percent depending on the benchmark used, both statistically significant at the 1 percent level. Though not reported, the difference between private and public offerings is more dramatic using U.S. benchmarks: private offerings cumulatively declined around 36 percent over 36 months whereas similar post-issuance abnormal returns of public offerings ranged between only 15 to 18 percent. These differences are statistically significant at the 1 percent level.

[insert Table 4 here]

For the subset of public, exchange-listed ADRs, DR prices are available as well as the local-currency and U.S.-dollar denominated home market returns. Our second robustness test

compares holding period raw and abnormal returns using DR prices. These returns (already in U.S. dollars) are benchmarked against the U.S. Datastream index and the U.S. matched firms. Results are presented in Panel B of Table 4. In three years subsequent to issuance, public ADRs under-perform the U.S. index by -28 percent versus only –7 percent relative to the U.S. matching firms, both of these obtain despite a significant positive raw cumulative return performance of 99 percent. Note that these calculations should be close to those of Panel A of Table 4 for the public ADR programs, but only to the extent that the local stock returns and the DR returns are equal on an exchange-rate-adjusted basis.

3.4 Some Interpretations

These results lead to a number of preliminary observations. First, and most importantly, capital-raising ADR listings appear to follow a post-issuance pattern similar to that uncovered in both the domestic IPO and SEO literature. However, the magnitude of the underperformance is much smaller than that experienced by IPO and SEO firms in the U.S.-based studies (Ritter, 1991; Speiss and Affleck-Graves, 1995; Loughran and Ritter, 1995) or even domestic studies from other countries. GEO underperformance also contrasts the findings of Miller (1999) and Foerster and Karolyi (1999) who find that capital-raising DR listings tend to outperform those firms that list in the U.S. without raising capital. Second, public ADRs do not appear any more successful than private ADRs. These long-run results for GEOs are surprisingly in contrast to Wruck (1989), Hertzel and Smith (1991), and Hertzel et al. (1997) who find the announcement of and the long-run performance following a private placement is associated with significant positive abnormal returns. However, these results are consistent with the short-run pattern uncovered by Miller (1999) who finds a negative 1 percent abnormal return announcement effect surrounding the announcement of Rule 144A ADRs and a subsequent 4 percent decline over the next 25 days. The rest of the paper explores additional explanations for these results.

4. Explanations of Long Run Performance of Global Equity Offerings

We further investigate the post-issuance CAR performance by first examining cross-sectional differences using buy-and-hold abnormal returns (BHARs) for each of post-issuance returns horizons to 12, 24 and 36 months and the overall event horizon, and for each of the two benchmarks. The univariate tests examine various firm-specific, issue-specific and market-wide attributes and are reported in Tables 5 and 6. Multivariate tests follow in Table 7. Our objective is to test the market segmentation and multimarket trading hypotheses, while controlling for other variables that may influence long-horizon returns.

4.1 Univariate Tests of Return Performance by Firm Attributes

In Table 5, post-issuance buy-and-hold abnormal returns are -12 percent over the 36 months for the local index benchmark and –8 percent for the matching firm benchmark, and only the former estimate is significantly different from zero. In fact, each of the BHARs relative to the local index benchmark from 12 to 36 months are statistically significantly different from zero, a result which may reflect the lower precision afforded the matched firm sample which is smaller by one-third. The longer the return horizon the greater the volatility of the BHARs with standard deviations in excess of 100 percent and with extreme quantile ranges over 300 percent. The cross-section of returns is skewed positively in a significant way as noted by the median of -19 percent.

[insert Table 5 here]

The second panel of Table 5 compares the performance by type of offering and shows, unlike the CARs in Table 3, a statistically significant difference between the performance of private and public GEOs. The public, exchange-listed offerings experience BHARs as low as -26 percent after three years following issuance compared to only -3 percent for private placement offerings. By our Wald tests (χ^2), these estimates are statistically significantly different at the 1 percent level of significance. Further tests based on medians (not reported) showed that the significant positive skewness in BHARs draws significantly from the private GEO subsample. In

fact, this statistical artifact of long-horizon returns, as originally identified in Lyon, Barber and Tsai (1997), explains why the degree of underperformance observed in private offering CARs from the portfolio-rebalancing approach in Table 3 may have been overstated.

Regional differences and those associated with market type do not appear to be important. BHARs for Asian offerings are weaker than those for Latin America and Europe, but none of these differences across returns horizons or benchmarks is statistically significant by the Wald test (χ^2) reported below each category. Separating the returns by private and public issues shows that the key driver for the poor performance in Latin America is the 35 public programs, examples of which include Tubos de Acero de Mexico, Chilgener of Chile, and IRSA Inversiones of Argentina. For the Asian issues, by contrast, the private 144A DRs resulted in significantly lower returns. As above, this evidence indicates that the distinction by public and private programs hides more important attributes that relate to long-term performance. Long-run return performance results by home country are not reported in tables for sake of brevity, but our findings indicate 19 of 35 countries report negative BHARs after three years. Interestingly, these 19 countries are concentrated in emerging markets, such as India, Mexico, and Colombia. In the next panel of Table 5, in fact, we present results by developed and emerging markets following our classification system in Table 1. Overall, GEOs from developed markets outperform emerging markets using all return horizons and benchmarks, though only the results to 24-months in the post-issuance period are statistically different by the χ^2 tests. As a supplementary test to that of the emerging versus developed market classification, we employed the accounting standards index of the Center for International Financial Analysis and Research (LaPorta et al., 1998) by grouping countries into quartiles from those with the lowest (Argentina, Venezuela, Turkey) to those with the highest accounting standards (Sweden, U.K., Singapore). The results in this panel of Table 5 show

surprisingly that those with the extreme standards perform significantly better than those in the middle two quartiles, a finding consistent across all horizons and benchmarks.

We also investigate whether "hot" ADR markets impact on post-issuance performance in the next panel of Table 5. We group the 39 firms in the sample that listed prior to 1990, then examine subsequent ADRs by year through 1996. Firms that listed prior to 1990 exhibit BHARs that are negative. For the 1990s, no consistent result obtains by year across horizons/benchmarks except perhaps for the 105 firms that listed during the "hottest" (to date) GEO market in 1994. Those firms experienced average abnormal returns of -22 percent (by local index) and –17 percent (by matched firm), in each case significantly different from zero. At the same time, other hot GEO years (1995, 1996) did not experience such dramatic underperformance and the pre-1990 period, which predates private offerings altogether, seemed to generate surprisingly similar poor performance. Our results are only moderately consistent with Ritter's (1991) observation that the long-run IPO under-performance may be dominated by a few years in a sample, consistent with "windows of opportunity" for the firm.

The final two panels of Table 5 reports BHAR results by IPO versus SEO and separately for those associated with government privatizations. Of the 333 ADRs, 74 represented IPOs while 219 represented SEOs. After 36 months, SEOs (with a –16 percent return by the local index and –19 percent by the matching firm benchmarks) have under-performed. The BHAR returns for IPOs, by contrast, were much higher and statistically significant at the 1 percent level relative to the matched firms. This finding contrasts again with portfolio-rebalancing results in Table 2 and likely reflects the skewed nature of these long-horizon returns. From the overall sample, 68 ADRs were the result of some form of government privatization. Of these privatizations, a subset of 33 ADRs represent initial offerings, and 35 ADRs represent secondary offerings. Results are presented in the final panel of Table 5. For the overall privatization sample, 12- to 36-month post-issuance BHARs relative to local benchmarks are neutral compared to corporate GEOs (-13 percent for local index,

-10 percent matching firms), but the differences are typically not significant. Note that these modest return declines are very similar to those for the overall sample, and are clearly not the large positive abnormal returns that were uncovered by Megginson et al. (2000). When the privatization sample is divided into initial and secondary offerings, significantly negative BHARs obtain only for the secondary offerings. Moreover, for the overall investment period, these returns are negative for SEO privatizations even after accounting for the pre-issuance run-ups. Finding inferior performance for secondary privatization offerings is consistent with Megginson et al. (2000).

We also examined cross-sectional differences in BHARs based on a number of other variables that other studies have shown to be relevant for long-horizon returns following equity issuances. These variables include market capitalization and market-to-book ratios, amount of capital raised (in absolute dollars and as a fraction of capitalization) and initial day returns. We also controlled for the exchange listing location (NYSE, Amex or Nasdaq) for the public issues and the depositary bank representing the issuer. Finally, we introduced several new risk measures to control for the magnitude of the long-horizon returns, including local and U.S. market betas and firm-specific risk. All three measures are drawn from two-index market model regressions applied to monthly raw returns (local currency denomination) using the local and U.S. Datastream indices and the returns available per firm in the post-issuance period. Remarkably few of these univariate tests were significant, though they are employed as control variables in the multivariate regressions in Section 4.3 below. These additional univariate test results are available from the authors upon request.

4.2 Univariate Tests of Return Performance by Post-Issuance Liquidity

We investigate the relationship between trading volume and performance for public ADRs (post-issuance U.S. trading data are not available for private placements). We compare the post-issuance volume in the local market in the 36-month post-issuance period (cumulated by year) with the trading volume on the U.S. exchange. We are motivated to study the potential liquidity factors

because of theories on multi-market trading and liquidity (Pagano, 1989; Chowdhry and Nanda, 1991) and related empirical work of Domowitz et al. (1998), Hargis (1997), Smith and Sofianos (1997) and Foerster and Karolyi (1998). To calibrate the volume measures across large and small firms, we transform the volume data into turnover measures using the number of shares outstanding at the date of issue for local market volume. For the DRs, we compute the ratio of the volume data in shares (per receipt certificate) to the number of home market shares that comprise the U.S. tranche of the capital raising. The latter measures are adjusted for bundling of home market shares in the DRs.

Results are presented in Table 6. The median post-issuance local volume (not reported) is around 70 million shares over the first year and grows to 189 million by the third year, while the median U.S. volume is much smaller, around 2 million shares in the first year rising to 4 million by the third year. This decay in the proportion of DR volume over time is substantial in the first two months after issuance but steadies thereafter (see also, Smith and Sofianos, 1997). We adjust for the float in each market by converting volume to turnover measures using shares available at the time of the issue. Panel A shows that the monthly ADR turnover is dramatically higher at about 30 percent versus about 8 percent in the home market. Differences in the median estimates are less dramatically different and suggest strong positive skewness in these measures.

[insert Table 6 here]

We examine the differences in BHARs across all three post-issuance return horizons and both benchmarks for a two-way contingency table of local and DR turnover. That is, we assign firms into four cells according to whether they are above or below median measures of local and DR turnover. Some important patterns emerge. BHARs are significantly higher and often positive in cells allocated to high DR turnover. The negative cumulative returns fall into the low DR turnover category. The distinction between low and high home market turnover is not substantially different within the low ADR turnover cells, but higher local market turnover appears to become

important in the high ADR turnover categories. This suggests that both DR market liquidity and local market liquidity are significantly positively related to long-run returns performance. In none of the horizons or benchmarks, however, do the chi-squared statistics in the contingency table reject the null of a uniform distribution. It is important to recognize that these data apply only to the subset of observations for which home and DR turnover measures are available, which includes only public DRs and, therefore, limits the power of the tests.

4.3 Multivariate Tests of Long Run Performance: Market Segmentation Tests

We examine our market segmentation and multi-market trading hypotheses by way of cross-sectional regressions of post-issuance abnormal return performance that control for other unrelated firm-specific, issue-specific and market-wide factors. We run two sets of regressions of BHARs: (a) those associated with the full-sample of GEOs which focus on market segmentation tests, and (b) those associated with the public ADRs only for which we have post-issuance market trading volume data and which focus on the multimarket trading hypothesis. Each of the regression models are estimated using robust procedures, with chi-squared tests and t-statistics computed using Newey and West (1987) standard errors adjusted for heteroscedasticity and robust to inherent non-normalities (such as skewness) in the long-run returns. All regressions include log market capitalization (SIZE, in U.S. dollars), market-to-book (M/B), local and U.S. betas (BETAL and BETAU, respectively) estimated from the two-index market model and its associated residual standard deviation (SIGMA) as proxies for risk.

The market segmentation tests focus on firm specific attributes and includes dummy variables for developed/emerging market countries (EMERG), for IPO versus SEO (IPO), issuance year (I94, if GEO takes place in “hot issue” year, 1994), whether it is a privatization (PRV) (initial or secondary) and whether it is a private or public offering (PRIVAT) and the exchange location, if public (NASDAQ). We also include variables associated with the accounting standards index

(IAS) and the magnitude of the issue (as a fraction of market capitalization, RUSCAP) and the initial day return (RETINIT).[10]

GEO firms benefit from access to globally-integrated markets and those that take advantage of this access from segmented emerging markets in which the investment barriers are greater are expected to realize more dramatic benefits in terms of a lower global cost of capital. This is the key prediction of the market segmentation hypothesis and our objective is to measure its impact in terms of long-run return performance following equity issuance. The information gap for firms in segmented markets due to differences in disclosure requirements between the home market and the U.S. can represent the most important investment barrier. Since all public, exchange-listed GEOs are required to reconcile with U.S. GAAP and agree to SEC disclosure rules, we expect investors in those from emerging markets or markets with significant segmenting barriers (lower accounting standards) are more likely to reward those firms with relatively higher post-issuance returns. By contrast, those firms from emerging markets or those with higher segmenting barriers that choose private placement Rule 144A offerings will experience relatively lower post-issuance returns. We construct interactive variables consisting of PRIVAT and EMERG or IAS to capture these important predictions of the market segmentation hypothesis.

Panel A of Table 7 presents the results. The first regression model is applied to each of the four investment horizons and includes the risk variables, various firm-specific variables and the two market-wide measures, EMERG and IAS. The key finding is that the PRIVAT dummy variable is consistently positive and statistically significantly different from zero (at the 1 percent level) for all horizons but the 12-month horizon. This confirms the univariate findings in Table 5 that private DR issues outperform public DR issues on average even after controlling for other

[10] To save space, our results are reported only using the local market, matching firms as benchmarks. The results using local market indices, as well as using the U.S. dollar-denominated returns with U.S. index and matching firm benchmarks, are similar and are all available from the authors upon request.

factors. Interestingly, the intercept coefficient is also positive, though never significant, which suggests that public DR issues also experience positive long-run returns once we control for risk factors, like SIZE, M/B, local and U.S. betas and SIGMA, each of which take on a negative coefficient. We also find that the IPO dummy is significant, positive and increasing with return horizons. Finally, by themselves, the EMERG and IAS variables are never significant. The adjusted R^2 are typically quite low ranging from 1 to 4 percent.

[insert Table 7 here]

In the second and third regression models of Panel A, we allow for EMERG and IAS to interact with the PRIVAT dummy to determine whether the superior returns to private DR issues is sensitive to the scope and magnitude of investment barriers. Remarkably consistent findings on the interactions obtain for all investment horizons. The coefficient on the PRIVAT dummy changes sign from positive to negative (statistically significant at the 1 percent level), is large and is increasing in absolute terms with return horizon. At the same time, the constant, or unconditional returns on public DR issues, becomes statistically significantly positive and also increases with horizon. For the PRIVAT dummy, the key interaction is with IAS, which takes on a statistically significantly positive coefficient, and at a lower degree of precision with EMERG, which is also positive. These interactive estimates imply that private DRs on average experience negative long-run returns, but that these outcomes are concentrated in those firms that come from countries with relatively low accounting standards (with IAS scores in the range of 65 or lower). Investors penalize those private issuers in this class from developed markets (Austria, Germany, Italy and Japan) as much as those from emerging markets (Argentina, Brazil, Chile, India, Turkey and Venezuela). For the public DR issues, the interactions are revealed in the EMERG and IAS coefficients, and only the latter coefficients are statistically significant across all investment horizons. The negative coefficient on IAS implies that while public DR issues achieve positive long-run returns overall, those firms from markets with relatively lower accounting standards

outperform their respective home-market benchmarks. In other words, investors reward favorably those firms which have made the greatest "leap" in choosing to harmonize and disclose regularly their financial statement information with the more rigorous U.S. accounting standards. It is important to note that issue-specific variables in the third regression model, like RUSCAP (ratio of dollar value of U.S. offering to market value) and RETINIT (initial day return), are never significant, which is surprising given the findings in Ritter (1991) and Loughran and Ritter (1995). Finally, the adjusted R^2 increase by double or even fourfold relative to those of the regression model without interaction variables, which suggests that these investment barrier effects are economically as well as statistically significant.

4.4 Multivariate Tests of Long Run Performance: Multimarket Trading and Liquidity Tests

Panel B of Table 7 presents our tests of the multimarket trading and liquidity hypothesis of Pagano (1989), Chowdhry and Nanda (1991) and Domowitz et al. (1998). Our analysis must necessarily reduce to the subsample of public DR issues, as it is only for that set of firms that we are able to obtain trading volume information in both the home market and the DR market. Our regression tests extend those in Panel A except that we exclude the PRIVAT dummy and include the local market and DR market turnover measures as described in Table 6, which we denote as TRNLO and TRNDR, respectively. Our interest, however, is in how the long-run returns performance of these issues is sensitive to the interaction between the trading activity in the local and DR markets, in addition to the overall activity in both markets. The multi-market trading hypothesis of Chowdry and Nanda (1991), unlike the "knife edge" equilibrium of Pagano (1989), predicts that either the home market or U.S. DR market will dominate in attracting order flow and trading volume. Smith and Sofianos (1997), in fact, have shown that there is a wide range of outcomes among NYSE-listed DRs from less than 0.1 percent of global trading activity in the DR market to 95 percent for some DR issues. Given that access to the U.S. market is a common objective for all GEOs, those that achieve a higher DR turnover relative to the number of shares

that comprise the U.S. tranche should achieve a higher relative post-issuance returns performance. To this end, we construct, in addition to TRNLO and TRNDR, an additional variable, VOL%, that measures the proportion of total trading activity in the DR market (using trading volume data aligned to each investment horizon), which our hypothesis would predict to have a positive coefficient. Though not reported in Table 6, VOL% averages 35 percent (median of 25 percent) for the 104 public DR firms with available data and ranges from less than one percent to 94 percent, confirming the dramatic range of Smith and Sofianos (1997).

The first regression model shows that the unconditional returns to public DR issues is positive, though usually not statistically different from zero, once adjustment is made using the risk attributes (SIZE, M/B, local and U.S. beta, and SIGMA, as in Panel A). We also include the TRNLO, TRNDR and VOL% variables. The coefficients on the raw turnover measures are usually positive, but never significant. By contrast, the VOL% coefficient is positive, statistically significant at least at the 10 percent level in all but one return horizon, and decreasing in magnitude with horizon. This implies that investors reward with higher post-issuance returns those public DR issues that are successful in attracting a significant proportion of global trading activity to the U.S. market, but only to 12 or 24 months. The adjusted R^2, ranging from 1 to 8 percent, are substantially higher than those of Panel A, but these tests are only for a subsample of firms and incorporate contemporaneous measures of performance, an issue we will address shortly.

The second regression model in Panel B includes all firm-specific, issue-specific and market-wide variables from Panel A and shows that the liquidity effects are robust to their inclusion. We find that EMERG and IAS, like in Panel A, have statistically significantly negative coefficients and render the same interpretations as before. Other interesting interactions seem to take place, however. The TRNLO coefficient is now significantly positive across all investment horizons (though not significant for the overall holding period), but this may stem from the strong negative coefficients that now appear on RUSCAP and RETINIT, unlike Panel A. It is possible,

for example, that those issues that are actively traded in their home market may be those that have less of an incentive to float a large U.S. tranche, a decision which investors reward with positive post-issuance returns. It is important to note that a number of studies have shown that volume, trading activity and return volatility are positively related (see survey by Karpoff, 1987; and, more recently, Andersen, 1996), which may be responsible for the insignificant coefficients on the TRNLO and, especially, the TRNDR variables. For example, the negative coefficient on SIGMA might be rationalized as a behavioral proxy for investor sentiment (Odean, 1999; Barber and Odean, 2000) and the negative, though insignificant, coefficient on TRNDR may be subsumed by this contaminating effect. In fact, however, the weakness of the TRNDR variable itself is robust to the exclusion of RUSCAP, SIGMA and other factors in the expanded regressions of Panel B.

Two robustness checks were performed. First, one concern about the trading volume and turnover measures is that they are *ex post* (which explains the high R^2 in Panel B). While we do not propose to delineate any cause-and-effect between long-run returns performance and liquidity, we did perform a secondary test. Smith and Sofianos (1997) show that initial trading activity in the DR market (even within the first month) for GEOs is the most important. As a result, we hypothesized whether the initial distribution of trading volume in the first year had any predictive power for the returns performance *ex ante* over the second and third year following issuance. We recalculated the cumulative long-run returns from month 13 to month 36 and regressed these returns on the same variables, except in each case TRNDR and TRNLO was computed for the first 12 months only. While the test results were overall weaker, the DR liquidity variable was again significantly and positively related to long-run returns. Second, in an attempt to capture the joint dynamics of monthly post-issuance returns and trading activity, we estimated pooled cross-sectional and time series regression models of monthly buy-and-hold abnormal returns by firm on TRNLO, TRNDR, VOL%. Table 8 presents the results for abnormal returns using the local matching firm benchmark, although results for all benchmarks are available. Overall, we find that

TRNLO is significantly, positively related to abnormal returns, while TRNDR is insignificant, even without interactions with VOL% or other firm-specific or issue-specific variables. VOL%, in the third model, is statistically significant and positive, similar to the findings in Table 7. Finally, we include lagged observations of BHAR, TRNLO and TRNDR to allow for any autocorrelation structure in those variables. Interestingly, in the last three models of Table 8, the VOL% is positive but weaker, but this appears to result from the strong positive relationship with lagged TRNDR, another important finding of an *ex ante* relationship between trading activity in the DR market and subsequent abnormal returns.

[insert Table 8 here]

5. Conclusions and Implications

This study provides an investigation of the long-run return performance of non-U.S. firms that raise equity capital in the U.S. Overall, our sample of 333 global equity offerings using DRs from 35 countries in Asia, Latin America, and Europe under-perform local market benchmarks of comparable firms by 8 percent to 15 percent over the three years following issuance. Our main contributions are twofold. First, we show that differences in long-run returns are related to the scope and magnitude of investment barriers that induce segmentation of capital markets around the world. Specifically, we find that while private-placement DR issuers typically underperform their respective benchmarks on average, investors tend to penalize those among them that come to the U.S. from countries with lower home-market accounting standards. By contrast, firms that issue equity on major public exchanges in the U.S. modestly outperform their benchmarks, but those among them that come from emerging markets with low accounting standards significantly outperform their benchmarks. Second, we also find post-issuance abnormal return performance depends in an important way on the new competitive, multi-market trading environment for the firm's stock in the post-issuance period. Specifically, we find that post-issuance returns are

significantly and positively related to the ability of the firm to capture a proportionately larger share of U.S. trading volume.

What are the main implications of these new findings? These liquidity effects for GEOs are broadly consistent with theories and empirical evidence of multi-market trading by Chowdhry and Nanda (1991), Domowitz et al. (1997, 1998) and Foerster and Karolyi (1998). Of course, readers should be cautioned that our results do not imply a "cause-and-effect" for liquidity factors and long run returns, but rather an association. It remains to be determined whether strong post-issuance performance drives U.S. trading volume, or whether increased U.S. liquidity facilitates better performance. Research that controls for turnover and volatility for returns, that is better able to focus on the structure of different trading environments or that brings to bear better data (e.g. transactions data in different markets) may be able to disentangle this problem further.

Our results may represent an even greater challenge for theories of international capital market segmentation. Firms that overcome the negative effects of foreign investment barriers by issuing equity globally should experience a net positive valuation effect in the long-run, if not in the short run. Earlier studies (Foerster and Karolyi, 1999; Miller, 1999) offer positive short-run share price reactions but they are typically small, both economically and statistically. These weak results have presented a challenge to those that would associate these positive short-run share price changes to a lower global cost of capital. Our long-run evidence indicates that these effects are not reliably larger nor always positive. In fact, our evidence shows that direct and indirect barriers, like information effects, play a role for a lower cost of capital, but it is likely not the whole story. A fruitful angle may be to understand non-market aspects of the globalization process, such as the additional corporate governance challenges for firms with globally-diverse shareholders. Stulz (1999) suggests that the new and complex agency and information asymmetry

problems that globalization brings may create negative effects that mitigate those that arise from lower investment barriers and superior liquidity. Regardless, our findings have important implications for global investors who seek to diversify abroad using DRs, for the companies that face many choices in global capital raising and for the intermediaries (underwriters, depositary banks and exchanges) that compete in the GEO marketplace.

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Table 1. Descriptive Statistics for Capital-Raising ADR Firms on U.S. Exchanges, 1982-1996. Sample of 333 firms initiating American Depositary Receipt programs in the U.S. with associated dates, information about type and sponsor institution of the ADR program, and size of new issue are obtained directly from ADR division of the Bank of New York. Sample of firms screened for data on home-market daily stock price, local stock index values and for home-market exchange rate for 12 months before and 36 months after issuance date, all obtained from Datastream International. The number of private placement Rule 144A (Pvt) and public, exchange-listed (Pub) programs is reported by country. Emerging market countries are indicated by a "*." An index value measuring accounting standard (AS) per country based on companies annual reports and their inclusion and exclusion of 90 items is given in parentheses (Source: Center for International Financial Analysis and Research, LaPorta, Lopez-de-Silanes, Shleifer and Vishny, 1998).

Industry:	**Tot**	**Country[a] (AS)**	**Pub**	**Pvt**	**Tot**	**Depositary:**	**Tot**
Agribusiness	1	Argentina* (45)	9	5	14	Bank of New York	130
Airlines	3	Australia (75)	9	5	14	Bankers Trust	14
Auto	15	Austria (54)	0	2	2	Citibank	135
Banking	18	Brazil* (54)	0	1	1	Morgan Guaranty	50
Publish/Broadcast	8	Chile* (52)	13	2	15	Morgan Stanley	3
Building Materials	8	China* (NA)	3	6	9	Other	1
Chemicals	17	Colombia* (50)	0	2	2	*Total*	*333*
Conglomerate	14	Denmark (62)	2	1	3		
Consumer Electronics	12	Finland (77)	2	5	7	**Issuance Year:**	
Construction	9	France (69)	8	6	14	1982	2
Cosmetics/Personal Care	2	Germany (62)	2	4	6	1983	1
Data processing	2	Hong Kong (69)	3	1	4	1984	2
Drug & Health Care	7	India* (57)	0	54	54	1985	0
Electrical Equipment	15	Indonesia* (NA)	2	1	3	1986	4
Food Retailing	1	Ireland (69)	1	0	1	1987	10
Food / Beverage	8	Italy (62)	4	5	9	1988	4
Hotel & Leisure	6	Japan (65)	4	2	6	1989	6
Household Goods	6	Korea* (62)	4	21	25	1990	11
Insurance	2	Luxembourg (NA)	0	1	1	1991	21
Machinery & Engineering	6	Mexico* (60)	18	13	31	1992	26
Merchandising	4	Netherlands (64)	11	3	14	1993	39
Non-Ferrous Metals	2	New Zealand (70)	1	0	1	1994	105
Office Equipment	3	Norway (74)	6	3	9	1995	47
Oil & Gas	13	Philippines* (65)	0	7	7	1996[b]	55
Other	17	Poland* (NA)	0	1	1	*Total*	*333*
Other Financial	2	Singapore* (78)	0	1	1		
Other Mining	2	South Africa (70)	0	5	5	**Region:**	
Paper & Forest Products	6	Spain (64)	7	0	7	Africa	5
Precious Metals	1	Sweden (83)	3	3	6	Asia	139
Printing & Packaging	3	Switzerland (68)	0	1	1	Europe	123
Real Estate	4	Taiwan* (65)	1	15	16	Latin America	66
Services	4	Thailand* (64)	0	1	1	*Total*	*333*
Steel	16	Turkey* (51)	0	2	2		
Telecommunications	23	U. K. (78)	25	15	40	**Exchange:**	
Textiles & Apparel	12	Venezuela* (40)	0	3	3	AMEX	3
Transportation/Storage	8	*Total*	*136*	*197*	*333*	Nasdaq	33
Utilities	26					NYSE	99
Unidentified	27					*Total*	*136*
Total	*333*						

[a] Asterisk (*) indicates countries categorized as "emerging markets."

[b] Includes capital-raising ADRs through June of 1996.

Table 2. Pre- and Post-Issuance Return Performance. Returns for each ADR firm are calculated as compounded total returns (with dividends) over consecutive months around the issuance day (initial day returns are excluded). Average monthly returns (R) and cumulative returns (CR) with dividends across various subperiods are means based on the number of firms available for a particular month. Abnormal returns (AR) and the associated cumulative abnormal returns (CAR) are calculated as the difference between the local stock return and the total return on the (i) local market Datastream index or (ii) a matching individual local firm. T-statistic for the raw and abnormal returns are computed as $R_t \cdot \sqrt{n_t} / sd_t$ where R_t is the average return for month t (AR_t for abnormal return), n_t is the number of observations in month t, and sd_t is the cross-sectional standard deviation of (abnormal) returns for month t. T-statistics for the cumulative average return in month t, CR_t, is computed as $CR_t \cdot \sqrt{n_t} / csd_t$ where csd_t is computed as $csd_t = [t \cdot var + 2 \cdot (t - 1) \cdot cov]^{1/2}$, where var is the average (over either the pre-issuance or post-issuance period) cross-sectional variance, and cov is the first-order autocovariance of the R_t series. Significance is designated by "***" at 1%, "**" at 5% and "*" at 10%. "Firms" indicates the number of (matching) firms available in a particular month.

				Local Index Benchmark		Matching Firm Benchmark		
Month	Firms	Raw (R)	Cumulative (CR)	Abnormal (AR)	Cumulative (CAR)	Matching Firms	Abnormal (AR)	Cumulative (CAR)
-12	208	2.48% ***	2.48% ***	0.53%	0.53%	155	-1.06%	-1.05%
-11	206	3.78% ***	6.36% ***	1.81% **	2.34% **	157	1.96% *	0.89%
-10	207	3.17% ***	9.73% ***	0.90%	3.26% ***	157	0.60%	1.49%
-9	209	4.36% ***	14.51% ***	2.48% ***	5.82% ***	157	1.85%	3.38%
-8	212	3.60% ***	18.63% ***	1.73% ***	7.64% ***	159	1.67%	5.10% **
-7	212	4.02% ***	23.40% ***	1.07%	8.79% ***	159	1.79% *	6.99% ***
-6	212	5.53% ***	30.22% ***	2.32% ***	11.32% ***	159	3.14% ***	10.35% ***
-5	213	3.26% ***	34.47% ***	1.08%	12.52% ***	160	1.96% **	12.51% ***
-4	214	4.03% ***	39.88% ***	1.07%	13.72% ***	160	1.47%	14.17% ***
-3	214	2.68% ***	43.63% ***	-0.24%	13.44% ***	161	-0.23%	13.90% ***
-2	216	5.76% ***	51.90% ***	2.45% ***	16.22% ***	161	4.54% ***	19.07% ***
-1	211	0.76%	53.05% ***	-0.89%	15.19% ***	153	-2.78%	15.75% ***
1	310	0.34%	0.34%	-1.13% **	-1.13% *	220	-1.25%	-1.25% *
2	316	2.04% ***	2.38% ***	1.02% *	-0.11%	221	0.87%	-0.38%
3	318	0.55%	2.95% ***	-0.48%	-0.59%	220	0.91%	0.52%
4	319	0.47%	3.43% ***	0.25%	-0.35%	221	0.55%	1.07%
5	319	1.01%	4.48% ***	-0.31%	-0.65%	221	0.61%	1.69%
6	319	-0.10%	4.37% ***	-1.07% **	-1.72%	221	-1.28% **	0.39%
7	320	0.33%	4.72% ***	-0.53%	-2.24%	223	0.45%	0.84%
8	320	0.47%	5.21% ***	0.09%	-2.16%	223	-0.68%	0.15%
9	321	-0.02%	5.19% ***	-0.76%	-2.90%	223	-1.15%	-1.00%
10	321	0.46%	5.67% ***	-0.39%	-3.28% *	223	0.74%	-0.27%
11	323	0.59%	6.29% ***	-0.56%	-3.83% **	223	-0.92%	-1.18%
12	323	1.05% *	7.40% ***	-0.25%	-4.07% **	224	0.61%	-0.58%
13	323	0.49%	7.93% ***	-0.63%	-4.67% **	224	-0.90%	-1.47%
14	319	1.24% *	9.26% ***	0.06%	-4.62% **	224	-0.36%	-1.82%
15	320	0.13%	9.41% ***	-0.09%	-4.71% **	224	-0.54%	-2.35%
16	320	0.69%	10.17% ***	0.17%	-4.54% *	225	-0.34%	-2.68%
17	320	0.84%	11.09% ***	-0.40%	-4.93% **	225	0.92%	-1.78%
18	320	0.72%	11.89% ***	-1.19% ***	-6.06% ***	225	-0.28%	-2.05%
19	320	0.41%	12.36% ***	-1.75% ***	-7.70% ***	225	-1.17%	-3.20%
20	320	1.85% ***	14.43% ***	0.21%	-7.51% ***	225	-0.80%	-3.97%
21	320	1.67% ***	16.34% ***	-0.31%	-7.79% ***	225	-0.09%	-4.06%
22	319	0.52%	16.95% ***	-1.39% **	-9.07% ***	225	-1.08%	-5.10%
23	313	1.48% **	18.69% ***	0.02%	-9.05% ***	225	0.14%	-4.96%
24	303	1.82% ***	20.85% ***	0.19%	-8.88% ***	225	0.02%	-4.94%
25	294	0.75%	21.76% ***	0.00%	-8.88% ***	225	-1.75% ***	-6.60% *
26	286	0.49%	22.35% ***	-0.51%	-9.34% ***	225	-0.58%	-7.14% *
27	279	0.62%	23.12% ***	-0.60%	-9.88% ***	225	-2.12% ***	-9.11% **
28	273	0.80%	24.10% ***	-0.55%	-10.37% ***	225	0.40%	-8.74% **
29	268	-0.26%	23.77% ***	-1.28% **	-11.52% ***	225	-0.84%	-9.51% **
30	268	0.65%	24.58% ***	-0.26%	-11.76% ***	225	-0.41%	-9.88% **
31	264	0.31%	24.97% ***	-1.09%	-12.72% ***	225	-0.35%	-10.20% **
32	256	0.09%	25.09% ***	-1.40%	-13.94% ***	225	-0.55%	-10.70% **
33	250	1.09%	26.46% ***	0.10%	-13.85% ***	225	-0.14%	-10.83% **
34	249	0.95%	27.66% ***	0.13%	-13.74% ***	225	0.16%	-10.68% **
35	245	0.79%	28.67% ***	-0.75%	-14.39% ***	225	1.57%	-9.28% *
36	226	0.37%	29.15% ***	-0.69%	-14.99% ***	217	0.58%	-8.76% *

Table 3. Comparison of Pre- and Post-Issuance Return Performance of Public versus Private Issues and Initial versus Secondary Global Offerings. Returns for each ADR firm are calculated as compounded total returns (with dividends) over consecutive months around the issuance day (initial day returns are excluded). Cumulative abnormal returns across various subperiods are calculated as the mean (based on the number of firms available) differences between the local stock return and the total return on the (i) local market Datastream index or (ii) a matching individual local firm. The sample of 333 firms is divided into 136 public (Level III) ADRs and 197 private (Rule 144A) ADRs and separately into 74 initial public (IPOs) and 219 seasoned global equity offerings (SEOs). T-statistics are calculated as described in Table 2. Significance is designated by "***" at 1%, "**" at 5% and "*" at 10%. "Firms" ("Match Firms") indicates the number of (local matching) firms available in a particular month.

	Firms	Cumulative Raw Returns	Cumulative Abnormal (Local Index Benchmark)	Matched Firms	Cumulative Abnormal (Matched Firm Benchmark)
All Issuances					
Pre-Issuance CAR (-12,-1)	211	53.05% ***	15.19% ***	153	15.75% ***
Post-Issuance CAR(+1,+12)	323	7.40% ***	-4.07% **	224	-0.58%
Post-Issuance CAR(+1,+24)	303	20.85% ***	-8.88% ***	225	-4.94%
Post-Issuance CAR(+1,+36)	226	29.15% ***	-14.99% ***	217	-8.76% *
Overall CAR (-12,+36)	226	97.66% ***	-2.07%	217	5.62%
Public Issues (Level III)					
Pre-Issuance CAR (-12,-1)	86	50.55% ***	17.84% ***	62	14.29% ***
Post-Issuance CAR(+1,+12)	134	15.34% ***	-3.69%	98	0.60%
Post-Issuance CAR(+1,+24)	125	30.41% ***	-11.70% ***	92	-3.71%
Post-Issuance CAR(+1,+36)	91	46.11% ***	-16.08% ***	87	-5.84%
Overall CAR (-12,+36)	91	119.98% ***	-1.11%	67	7.62%
Private Issues (Rule 144A)					
Pre-Issuance CAR (-12,-1)	125	54.74% ***	13.35% ***	91	15.36% ***
Post-Issuance CAR(+1,+12)	189	2.05%	-4.35% *	126	-0.90%
Post-Issuance CAR(+1,+24)	178	14.99% ***	-6.89% *	133	-4.63%
Post-Issuance CAR(+1,+36)	135	18.85% ***	-14.32% ***	130	-9.91% *
Overall CAR (-12,+36)	135	83.91% ***	-2.88%	92	10.09%
IPOs					
Pre-Issuance CAR (-12,-1)	N.A.	N.A.	N.A.	N.A.	N.A.
Post-Issuance CAR(+1,+12)	92	24.65% ***	0.66%	62	0.97%
Post-Issuance CAR(+1,+24)	85	46.44% ***	-11.02%	73	-2.41%
Post-Issuance CAR(+1,+36)	64	70.11% ***	-17.19%	66	-5.77%
Overall CAR (-12,+36)	64	70.11% ***	-17.19%	66	-5.77%
SEOs					
Pre-Issuance CAR (-12,-1)	211	53.05% ***	15.19% ***	153	15.75% ***
Post-Issuance CAR(+1,+12)	231	3.12%	-5.90% ***	162	-2.72%
Post-Issuance CAR(+1,+24)	218	10.42% ***	-10.76% ***	152	-8.07% *
Post-Issuance CAR(+1,+36)	162	14.27% ***	-17.20% ***	151	-10.97% *
Overall CAR (-12,+36)	162	74.89% ***	-4.62%	118	3.05%

Table 4. Robustness Tests of Post-issuance Return Performance using U.S. Dollar Denominated Returns, Alternative Benchmarks and ADR Prices. Returns for each ADR firm are calculated as compounded total returns (with dividends) over consecutive months around the issuance day (initial day returns are excluded). Cumulative returns across various subperiods are means based on the number of firms available for a particular month. Cumulative abnormal returns across various subperiods are calculated as the mean (based on the number of firms available) differences between the U.S.-dollar denominated local stock return (based on the month-end exchange rate) and the total returns on (i) the U.S. Datastream index or (ii) a matching individual U.S. firm. The U.S. firm is matched on initial or seasoned offering within same issue month, with book-to-market ratio within 25% of the ADR firm (Datastream book values and offer price) and closest market capitalization. Panel B computes the same statistics for a subset of 136 public (Level III) ADRs with U.S. ADR price and volume data. T-statistics are calculated as described in Table 2. Significance is designated by "***" at 1%, "**" at 5% and "*" at 10%. "Firms" ("Match Firms") indicates the number of (U.S. matching) firms available in a particular month.

	Firms	Cumulative Raw U.S. dollar Returns	Cumulative Abnormal U.S. dollar Returns (U.S. Index Benchmark)	Matched U.S. Firms	Cumulative Abnormal U.S. dollar Returns (U.S. Matched Firms)
Panel A. U.S. Dollar Returns					
Pre-Issuance CAR (-12,-1)	211	48.94% ***	28.22% ***		
Post-Issuance CAR(+1,+12)	323	3.62%	-14.48% ***	323	-6.40% ***
Post-Issuance CAR(+1,+24)	303	9.58% ***	-28.65% ***	295	-16.95% ***
Post-Issuance CAR(+1,+36)	226	10.75% **	-43.17% ***	220	-29.32% ***
Overall CAR (-12,+36)	226	64.96% ***	-27.13% ***	220	-29.32% ***
Panel B. ADR Prices					
Pre-Issuance CAR (-12,-1)	37	41.55% ***	18.52% ***		
Post-Issuance CAR(+1,+12)	124	16.31% ***	-4.25%	124	7.47%
Post-Issuance CAR(+1,+24)	117	29.92% ***	-15.61% ***	115	-0.90%
Post-Issuance CAR(+1,+36)	87	40.63% ***	-27.53% ***	84	-7.17%
Overall CAR (-12,+36)	87	99.07% ***	-14.11% *	84	-7.17%

Table 5. Post-issuance Return Performance by Region, Issuance Year, Privatization, IPO/SEO AND Offering Type. Monthly returns for each firm are calculated as compounded total returns (with dividends) over consecutive months subsequent to the issuance day (initial day returns are excluded). Cumulative buy-and-hold abnormal returns are calculated as the difference between the cumulative local stock return and the cumulative total return on (i) the local market Datastream index ("Local Index") and (ii) a matching individual local firm. The overall period runs from months –12 to +36 relatie to the issuance. Robust t-statistics are computed using heteroscedasticity-consistent standard errors using Newey and West (1987) procedures. At the bottom of each section and panel, χ^2-tests are computed for differences across type of offering, by regions, years, with degrees of freedom computed as N – 1, where N is the number of categories. χ^2-tests across regions include 5 companies from Africa. Significance is designated by "***" at 1%, "**" at 5% and "*" at 10%.

	12-Month Holding Period		24-Month Holding Period		36-Month Holding Period		Overall Holding Period	
	Local Index Benchmark	Matched Firm Benchmark	Local Index Benchmark	Matched Firm Benchmark	Local Index Benchmark	Matched Firm Benchmark	Local Index Benchmark	Matched Firm Benchmark
Overall (333)								
Mean	-4.52% **	-2.66%	-7.86% *	-6.43%	-12.14% ***	-7.91%	-4.85%	0.904%
Standard Deviation	15.29%	13.32%	55.80%	43.21%	68.86%	69.34%	122.32%	110.13%
Skewness	1.0583 ***	0.9290 ***	1.1590 ***	0.9656 ***	0.7985 ***	0.9766 ***	1.1063 ***	1.0492 ***
5% Quantile	-65.87%	-60.38%	-119.18%	-112.42%	-138.90%	-134.17%	-174.33%	-144.42%
25% Quantile	-26.70%	-25.79%	-48.27%	-44.31%	-58.41%	-56.29%	-72.93%	-69.64%
Median	-7.15%	-5.52%	-12.97%	-13.25%	-19.73%	-19.05%	-19.10%	-15.53%
75% Quantile	9.70%	11.91%	18.79%	22.20%	19.24%	23.01%	42.99%	43.09%
95% Quantile	72.73%	68.86%	136.49%	149.58%	177.11%	187.42%	218.78%	219.57%
By Offering Type								
Public (136)	-5.04%	-3.83%	-16.17%	-16.61% *	-25.94% *	-21.75% *	-16.93% *	-9.01%
Private (197)	-4.17%	-1.81%	-2.19%	0.95%	-2.72%	2.13%	3.38%	8.10%
χ^2	0.038	0.168	2.859 *	4.029 **	6.315 ***	4.643 **	2.653 *	1.456
By Region								
Asia (139)	-6.15%	-6.31%	-9.66%	-6.26%	-19.15% *	-12.03% *	-10.30%	-6.71%
Europe (123)	-4.05%	-2.29%	-4.97%	-3.90%	-5.51%	-5.81%	0.54%	3.24%
Latin America (66)	-1.92%	3.46%	-9.31%	-11.67%	-9.32%	-4.28%	-3.09%	10.64%
χ^2	0.489	2.126	0.273	0.429	2.029	0.414	0.699	0.957
By Market Type								
Emerging (185)	-6.09%	-3.93%	-16.73% *	-13.64% *	-19.58% **	-9.98%	-13.26%	0.85%
Developed (148)	-3.28%	-1.50%	-0.83%	0.16%	-6.24%	-6.02%	1.81%	0.95%
χ^2	0.409	0.251	3.767 **	2.571 *	2.089	0.129	1.479	0.036

Table 5. (continued) Post-issuance Return Performance by Region, Issuance Year, Privatization, IPO/SEO AND Offering Type.

	12-Month Holding Period		24-Month Holding Period		36-Month Holding Period		Overall Holding Period	
	Local Index Benchmark	Matched Firm Benchmark	Local Index Benchmark	Matched Firm Benchmark	Local Index Benchmark	Matched Firm Benchmark	Local Index Benchmark	Matched Firm Benchmark
By Accounting Rating								
Q1 (Lowest)	5.22%	6.44%	-0.78%	15.56%	1.63%	8.88%	-6.91%	27.32% **
Q2	-7.63%	-7.88%	-17.89% *	-17.23% *	-18.89% *	-12.69%	-2.74%	-5.67%
Q3	-5.70%	-1.37%	-7.65%	-6.33%	-15.89% *	-18.84% *	-11.69% *	-18.25% *
Q4 (Highest)	-2.76%	-0.66%	-1.76%	0.64%	-4.10%	0.93%	6.01%	14.45%
χ^2	1.965	2.926	2.786	5.045 *	2.109	2.980	1.444	5.260 *
By Year								
Pre - 1990 (39)	-4.30%	-7.27%	-10.16%	-11.61%	-21.99% *	-16.41%	-26.10% **	-17.74%
1990 (11)	-0.60%	-4.24%	9.08%	0.67%	36.76% **	-5.94%	50.16% **	30.70% *
1991 (21)	-16.75% *	18.22% **	-11.56%	32.54% **	-8.14%	31.76% **	-30.22%	25.52%
1992 (26)	-6.60%	-8.25%	-13.05%	-9.98%	-19.24% *	-12.43%	-1.99%	-1.50%
1993 (39)	5.42%	1.86%	4.89%	-8.24%	-12.80%	-8.78%	8.06% *	6.34%
1994 (105)	-7.88%	-5.82%	-18.25% *	-14.29% *	-21.92% *	-16.91% *	-21.51% *	-12.03%
1995 (47)	-3.85%	-0.49%	-4.50%	7.63%	-9.12%	8.93%	4.25%	-18.76%
1996 (55)	-1.34%	-1.83%	1.14%	-6.63%	0.39%	-6.17%	15.54%	10.89%
χ^2	8.416	4.614	16.287 **	6.871	18.949 ***	4.818	32.174 ***	18.319 ***
IPO vs SEO								
IPO (74)	-0.01%	8.28%	0.29%	13.86% *	-1.45%	20.83% **	N.A.	N.A.
SEO (219)	-6.37%	-6.89%	-11.18%	-14.28% *	-16.50% *	-19.02% *		
χ^2	1.482	6.806 ***	1.196	6.315 ***	1.621	8.040 ***	N.A.	N.A.
By Privatization								
Corporate GEOs (165)	-4.38%	-2.64%	-8.23%	-9.24%	-13.24%	-10.34% *	-2.42%	2.11%
Privatizations (68)	-4.99%	-2.74%	-6.64%	3.69%	-8.48%	0.85%	-12.92%	-3.45%
SEO Privatizations (35)	-9.02%	-2.09%	-16.01%	-3.75%	-27.87%	-4.82%	-32.98% *	-6.09%
IPO Privatizations (33)	-4.58%	-2.83%	-5.69%	3.69%	-6.52%	1.64%	-10.88%	-3.08%
χ^2	0.961	0.022	1.145	1.611	4.489 *	1.108	3.326	0.153

Table 6. Post-issuance Return Performance by Local and ADR Trading Volume. Monthly returns for each firm are calculated as compounded total returns over consecutive months subsequent to the issuance day (initial day returns are excluded). The sample includes public (Level III) ADRs only for which U.S. volume data is available. Cumulative buy-and-hold abnormal returns are calculated as the difference between the cumulative local stock return and the cumulative total return on (i) the local market Datastream index ("Local Index") and (ii) a matching individual local firm. Robust t-statistics are computed using heteroscedasticity-consistent standard errors using Newey and West (1987) procedures. At the bottom of each section, χ^2-tests are computed for differences across four turnover cells. Trading volume over 12-, 24- or 36-month periods are measured in terms of turnover relative to the number of shares outstanding (on issuance day) for local market volume or relative to the number of DRs outstanding (on issuance day) for DR volume. DR volumes are adjusted for bundling of home market shares. High or low turnover categories are measured relative to their respective medians. Significance is designated by "***" at 1%, "**" at 5% and "*" at 10%.

	12-Month Return Horizon		24-Month Return Horizon		36-Month Return Horizon	
Panel A. Summary Statistics on Local and ADR Turnover						
	Local Turnover	ADR Turnover	Local Turnover	ADR Turnover	Local Turnover	ADR Turnover
Mean	0.0746 ***	0.3184 ***	0.0758 ***	0.2952 ***	0.0923 ***	0.3511 ***
Standard Deviation	0.0995	0.5076	0.0721	0.4054	0.1597	0.7298
5% Quantile	0.0003	0.0057	0.0005	0.0047	0.0005	0.0047
25% Quantile	0.0041	0.0922	0.0045	0.0950	0.0059	0.0984
Median	0.0141	0.0922	0.0158	0.0950	0.0160	0.0984
75% Quantile	0.0333	0.2559	0.0377	0.2567	0.0382	0.2590
95% Quantile	0.2581	0.8743	0.1881	0.7814	0.1873	0.7583
NOBS	104	104	106	106	108	108
Panel B. Tests of Differences in Return Performance by Local and ADR Turnover						
Local Index Benchmark	Low ADR	High ADR	Low ADR	High ADR	Low ADR	High ADR
Low Local	-2.63%	4.09%	-21.63%	-8.80%	-23.22% *	-26.55% *
High Local	-4.21%	-1.33%	-12.24%	-2.92%	-33.46% *	-5.77%
χ^2	0.4720		1.3870		1.7117	
Matched Firm Benchmark	Low ADR	High ADR	Low ADR	High ADR	Low ADR	High ADR
Low Local	-0.76%	3.99%	-23.23% *	-13.96%	-24.29% *	-26.78% *
High Local	-7.59%	2.32%	-12.74%	4.25%	-37.71% *	12.52%
χ^2	0.9638		2.1669		4.2814	

Table 7. Cross-sectional Regressions of Post-issuance Return Performance. Cumulative buy-and-hold abnormal returns are calculated as the difference between the cumulative total local stock return and the cumulative total return on a matching individual local firm (results are only reported for matching individual local firm benchmark). Robust t-statistics are computed using heteroscedasticity-consistent standard errors using Newey and West (1987) procedures. These buy-and-hold abnormal returns are regressed on: PRIVAT, a dummy variable equal to one if firm i is a private, 144A offering and zero otherwise; EMERG is a dummy variable equal to one if firm i is from an emerging market country and zero otherwise; IAS, an index of accounting standards by country from LaPorta et al. (1998), see Table 1; NASDAQ is a dummy variable equal to one if firm i lists on the NASDAQ and zero otherwise; IPO is a dummy variable equal to one if firm i is an IPO and zero otherwise; PRV is a dummy variable equal to 1 if firm i is a privatization and zero otherwise; I94 is a dummy variable that equals one for all issues occurring in 1994 and zero otherwise; BETAL (BETAU) is the beta of the firm's total return on the local market (U.S.) Datastream index from a two-index market model regression, and SIGMA is associated residual standard deviation; SIZE is the market value of equity of the firm around issuance; MKT/BK is the ratio of the book-to-market value of equity around issuance; RUSCAP is the ratio of the dollar value of the U.S. offering to the market value of equity; RETINIT is the initial day DR return; TRNLO (TRNDR) is the ratio of the cumulative home market (DR) share trading volume in the 12-, 24-, or 36-months post-issuance periods relative to its capitalization (U.S. DR tranche).VOL% is the proportion of total trading volume in both markets represented by U.S. ADR volume. Robust t-statistics (adjusted for conditional heteroscedasticity) are presented in parentheses. Significance is denoted by "**"at 5% and "*" at 10%.

Panel A. Market Segmentation Tests

	Constant	PRIVAT	EMERG	IAS	EMERG* PRIVAT	IAS * PRIVAT	IPO	I94	NASDAQ	PRV	PRV* IPO	RUSCAP	RETINIT	SIZE	M/B	BETAL	BETAU	SIGMA	R-SQR	NOBS
12-Month Holding Period Returns																				
1	0.132	0.029	-0.014	-0.002			0.167**	-0.056	-0.007	-0.101	0.011			0.002	-0.001	0.061	-0.001	-1.200	0.79%	226
2	0.802**	-1.275**	-0.173	-0.011**	0.273	0.018**	0.177**	-0.049	-0.010	-0.090	-0.008			0.003	-0.001	0.042	0.005	-1.009	1.41%	226
3	0.801**	-1.274**	-0.173	-0.011**	0.273*	0.018**	0.178**	-0.049	-0.011	-0.090	-0.008	0.004	0.001	0.003	-0.001	0.042	0.005	-1.012	0.45%	226
24-Month Holding Period Returns																				
1	0.061	0.288**	-0.145	-0.003			0.238**	-0.103	0.203	-0.066	0.086			-0.001	-0.001	0.016	0.022	-1.474	3.99%	226
2	1.528**	-2.539**	-0.524**	-0.023**	0.640**	0.039**	0.263**	-0.089	0.182	-0.044	0.044			0.001	-0.001	-0.027	0.036	-1.041	6.48%	226
3	1.563**	-2.521**	-0.532**	-0.023**	0.646**	0.039**	0.276**	-0.088	0.178	-0.044	0.042	0.025	-0.138	0.001	-0.001	-0.033	0.040	-1.143	5.88%	226
36-Month Holding Period Returns																				
1	0.333	0.362**	0.131	-0.067			0.314**	-0.145	0.252	-0.227	0.196			0.004	-0.002*	-0.369**	0.099	0.183	2.01%	226
2	1.989**	-2.834**	-0.558*	-0.029**	0.721*	0.045**	0.343**	-0.129	0.239	-0.200	0.147			0.006	-0.002*	-0.418**	0.114	0.672	9.82%	226
3	2.127**	-2.869**	-0.566*	-0.031**	0.775*	0.045**	0.356**	-0.129	0.249	-0.186	0.139	-0.384	-0.262	0.005	-0.002*	-0.442**	0.117	0.946	9.86%	226
Overall Holding Period Returns (Months –12 to +36)																				
1	0.592	0.319**	0.051	-0.006			0.224	-0.241*	0.341	-0.338	0.129			0.001	-0.002	-0.301	0.212*	-2.854	2.01%	226
2	2.213*	-2.970*	-0.185	-0.029*	0.476	0.048**	0.238	-0.229*	0.394	-0.305	0.088			0.005	-0.002	-0.343	0.222	-2.448	3.35%	226
3	2.439**	-3.037*	-0.196	-0.032**	0.567	0.048**	0.257	-0.228	0.410	-0.281	0.074	-0.669	-0.407	0.003	-0.002	-0.381*	0.225*	-1.941	3.90%	226

Table 7. (continued) Cross-sectional Regressions of Post-issuance Return Performance.

Panel B. Multi-Market Trading Tests

	Constant	EMERG	IAS	IPO	I94	NASDAQ	PRV	PRV*IPO	RUSCAP	RETINIT	TRNLO	TRNDR	VOL%	SIZE	M/B	BETAL	BETAU	SIGMA	R-SQR	NOBS
12-Month Holding Period Returns																				
1	0.253*										0.439	-0.019	0.405**	0.003**	-0.002**	0.288**	-0.127	-1.143	7.99%	79
2	1.024**	-0.535**	-0.018**	0.146	-0.063	-0.200	-0.214*	-0.031	-0.688	-0.415	2.167*	-0.063	0.760**	0.009**	-0.001	0.267**	-0.123	-0.889	15.05%	79
24-Month Holding Period Returns																				
1	0.259										3.151	0.029	0.364*	0.007	-0.005**	0.232	-0.019	-3.741*	5.13%	81
2	2.168**	-1.093**	-0.035**	0.126	0.131	-0.004	-0.301	-0.029	-1.952*	-1.220**	5.974**	-0.066	1.062**	0.017**	-0.004**	0.163	0.040	-2.505	29.04%	81
36-Month Holding Period Returns																				
1	0.051										2.287	0.096	0.268	0.001	-0.006**	-0.158	0.144	-3.440	5.49%	83
2	3.364**	-1.128**	-0.050**	0.251	0.296*	0.045	-0.596**	0.133	-2.642**	-1.752**	6.399**	-0.041	0.931*	0.015	-0.005**	-0.090	0.168	-3.337	29.38%	83
Overall Holding Period Returns (Months –12 to +36)																				
1	0.100										1.483	0.159	0.455*	-0.007	-0.006**	0.142	-0.014	-3.648	1.17%	83
2	3.282**	-0.941*	-0.048**	0.039	0.084	0.204	-0.574	0.047	-2.247	-2.186**	5.036	-0.009	0.939*	0.010	-0.005**	0.192	0.082	-3.917	18.38%	83

Table 8. Pooled Cross-sectional/Time Series Regressions of Post-Issuance Returns on Local and ADR Volume. Monthly buy-and-hold abnormal returns are calculated as the difference between the cumulative total local stock return and the cumulative total return on a matching individual local firm. Only local market individual matching firm results are reported here. The sample includes public (Level III) ADRs only for which U.S. volume data is available. Each month buy-and-hold abnormal returns (BHAR) are regressed on contemporaneous and/or lagged measures of local market (TRNLO) and U.S. ADR turnover (TRNDR) and the proportion of total trading volume in both markets represented by U.S. ADR volume (VOL%). Trading volume each month is measured in terms of turnover relative to the number of shares outstanding (on issuance day) for local market volume or relative to the number of DRs outstanding (on issuance day) for DR volume. DR volumes are adjusted for bundling of home market shares. Table 6 provides summary statistics on turnover. Robust t-statistics are computed using heteroscedasticity-consistent standard errors using Newey and West (1987) procedures. Significance is designated by "***" at 1%, "**" at 5% and "*" at 10%.

	Constant	TRNLO	TRNDR	VOL%	Lag(BHAR)	Lag(TRNLO)	Lag(TRNDR)	R-SQR	NOBS
1	-0.0079 ***	0.0949 ***	0.4222					1.17%	3147
2	0.0058			0.0103 *				0.07%	3147
3	0.0096	0.1075 ***	0.0389	0.0216 ***				1.40%	3147
4	-0.0075 ***	0.2387 ***	-0.8499 *		-0.0175	-0.1765 ***	1.5501 ***	3.08%	3147
5	-0.0025			0.0038	-0.0202	0.0094	0.7445 ***	0.32%	3147
6	0.0045	0.2439 ***	-1.0458 **	0.0149 *	-0.0190	-0.1721 ***	1.4646 ***	3.18%	3147

Figure 1. Total Capital Raised in Public and Private ADR Offerings, 1990-1999. Public, exchange listed (Level III) DR programs are reported separately from private, Rule 144A offerings. Data is compiled from *Depositary Receipts (ADRs and GDRs): 1999 Year-End Market Summary*, Bank of New York, Depositary Receipts Division, Worldwide Securities Processing Services, December 31, 1999.

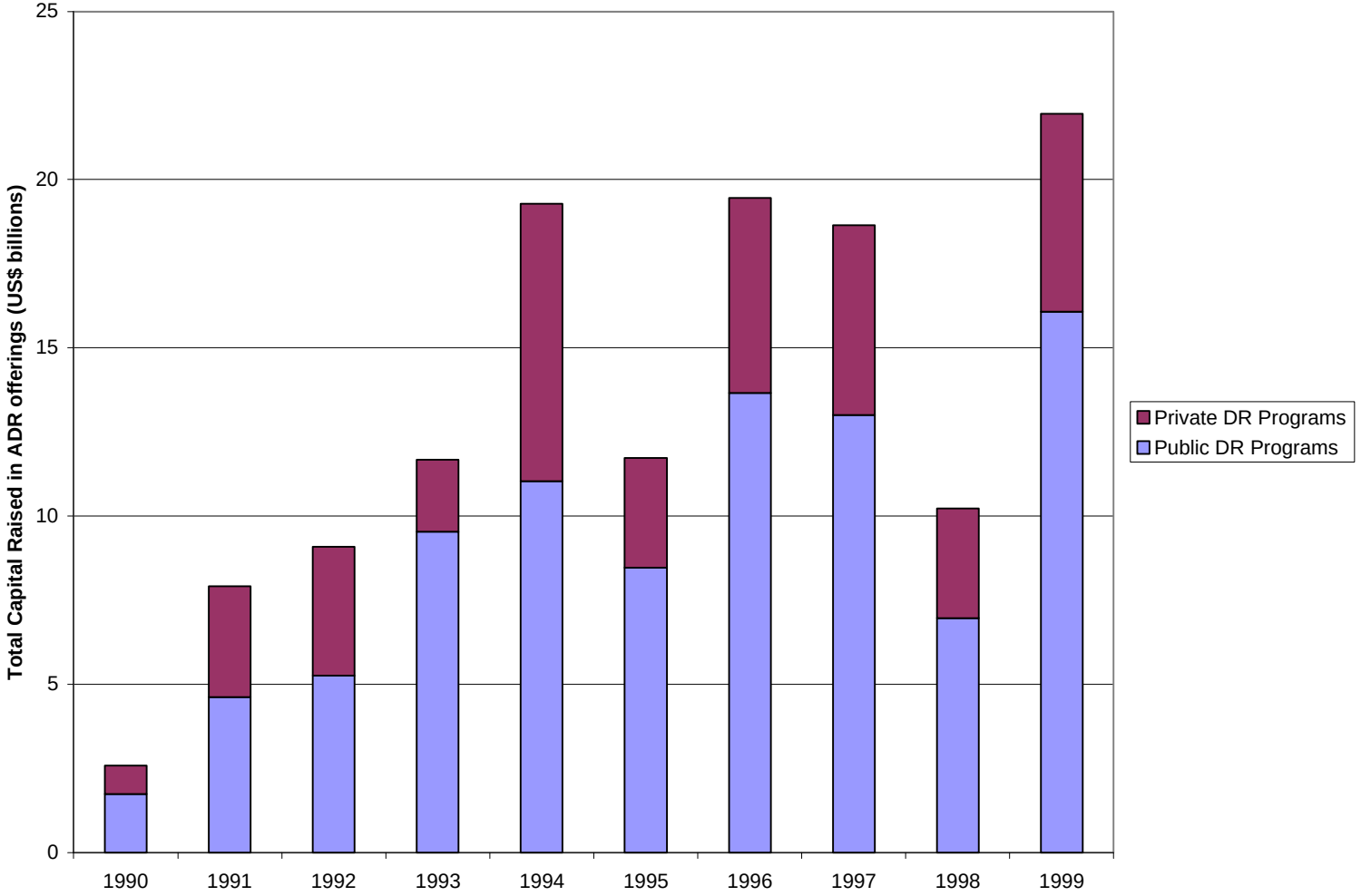

Figure 2. Share and Dollar Trading Volume in Public ADR Issues, 1995-1999. Trading volume is compiled for DRs listed on the three major U.S. exchanges only for 457 listed programs. This figure ignores trading in 901 private, Rule 144A issues. Data is compiled from *Depositary Receipts (ADRs and GDRs): 1999 Year-End Market Summary*, Bank of New York, Depositary Receipts Division, Worldwide Securities Processing Services, December 31, 1999.

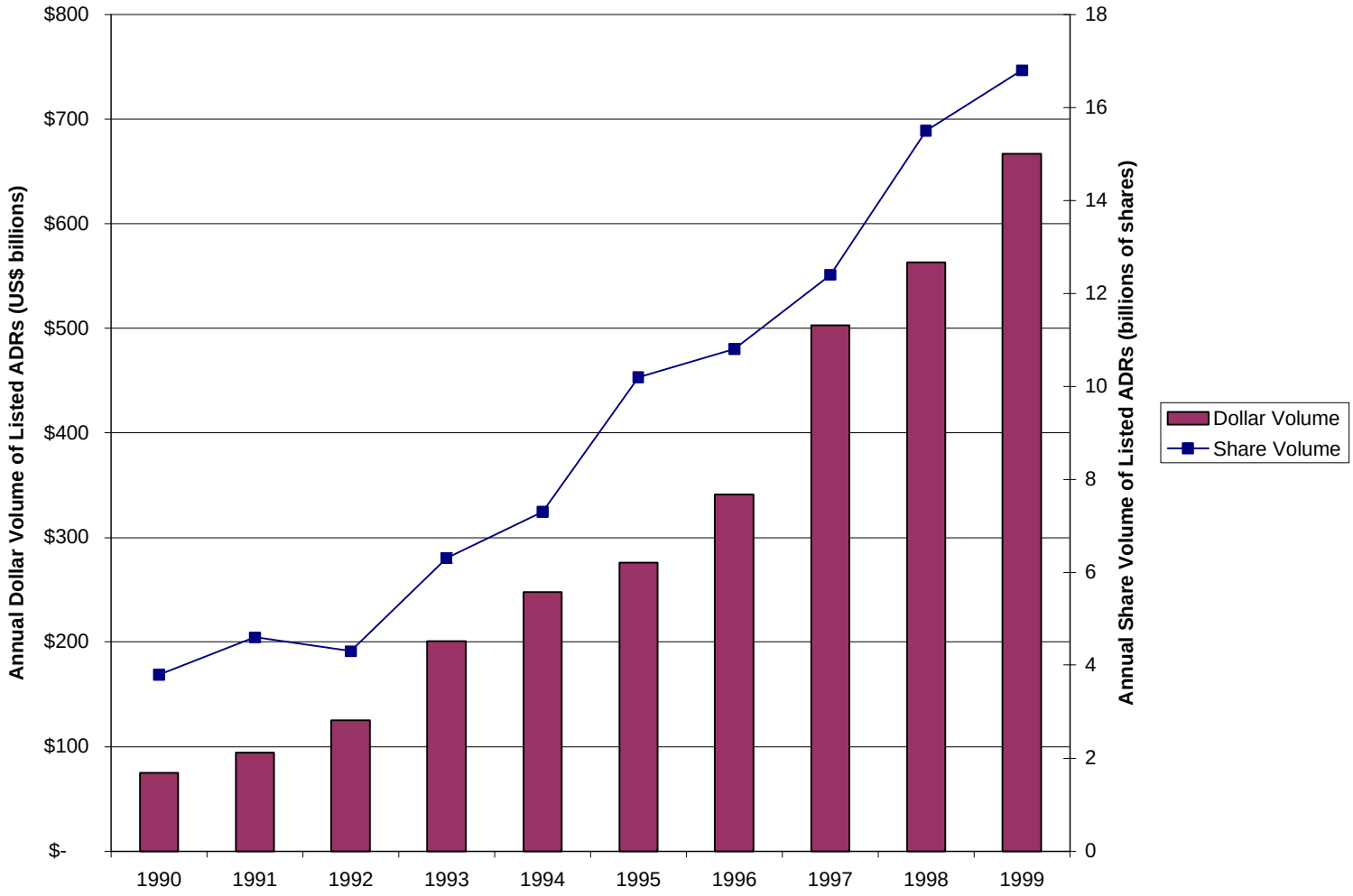

Figure 3. Pre- and Post-Issuance Return Performance. Returns for each ADR firm are calculated as compounded total returns (with dividends) over consecutive months around the issuance day (initial day returns are excluded). Average monthly returns and cumulative returns with dividends are averages across the number of firms available for a particular month. Abnormal returns (AR) and the associated cumulative abnormal returns are calculated as the difference between the local stock return and the total return on the (i) local market Datastream index or (ii) a matching individual local firm.