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## Original Article

# ADR characteristics and performance in international and global indexes

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**ABSTRACT** This study examines the characteristics and performance of American depository receipts (ADRs) in international indexes and the role of ADRs on foreign ordinaries as a global diversifier. We find that ADRs in Europe, Australasia and the Far East are tilted toward three common factors: giant cap, dividend yield and UK stocks. We also find that portfolio combinations of ADRs and US equities provide inefficient diversification opportunities relative to an efficient frontier analysis of the S&P500 and Global 700, the latter portfolio consisting of a diversified mix of ADRs and non-ADR-based foreign shares. Our findings on ADR characteristics are consistent with prior research, whereas our ADR performance findings are inconsistent with prior research. Caveats apply, notably for yield-seeking taxable accounts.

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**Keywords:** ADR; global (and international) indexes; characteristics; performance; efficient frontier

## INTRODUCTION

American depository receipts (ADRs) are used by investors as a practical vehicle to achieve cost-efficient exposure and diversification to stocks of companies domiciled in foreign countries. As such,

ADRs are used by index providers in the construction of international and global indexes such as EAFE (Europe, Australasia, and the Far East), the S&P Global 700 and the S&P Global 1200, respectively.<sup>1</sup> In this study, we examine the characteristics and

performance of ADRs on foreign ordinaries relative to the non-ADR component of foreign shares that populate these international and global indexes. A better understanding of ADR characteristics can be used by investors and portfolio managers to assess whether international portfolios are factor neutral or factor biased, whereas a better understanding of the return and risk characteristics of ADRs in the index construction process can be used by investors and managers to assess the performance benefit (or possible lack thereof) of using ADRs in the development of globally efficient portfolios.

## ADR BACKGROUND AND LITERATURE REVIEW

Exchanges in the United States have attracted their fair share of cross-listed firms. Cross listings in the US exchanges peaked in 1996, coinciding with the IPO boom. In spite of the weakening of this trend, brought about by the market downturn at the beginning of this decade and regulatory changes that have made listings in the United States less attractive (see Zhu and Small, 2007), cross-listed firms continue to be an important part of US exchanges. According to the World Federation of Exchange members, in May 2007, out of the 2290 firms that were listed on the NYSE, 443 (19.34 per cent) were foreign companies. In the NASDAQ market, 322 firms out of 3113 firms (10.34 per cent) were foreign companies.

As companies have become more international in their orientation, the cross-listing of firms on different international exchanges has been popular for many reasons. By listing on international exchanges, firms increase the amount and the quality of information that they provide to investors. This generally results in greater access to capital at lower cost and greater liquidity (see Chouinard and D'Souza (2004)

and Reese and Weisbach (2002) for detailed studies).

A popular way to list firms on international exchanges has been through Global Depository Receipts. Such instruments in the United States are called ADRs (see Karolyi (2005) for a comprehensive survey of new and old trends in the market for ADRs and new research initiatives in this area). J.P. Morgan first introduced them in 1927, in response to the difficulty of buying shares from other countries that trade at different prices and currency values. An ADR is a stock that trades in the United States just like regular stocks. They are issued in the United States by a bank or a brokerage firm (depository) but represent a specified number of shares in a foreign corporation. The bank purchases a large lot of shares from a foreign company, bundles the shares into groups and reissues them on one of the US exchanges.<sup>2</sup> A ratio of the ADR per home country share is set by the bank; for example, a ratio of 6:1 implies that one ADR share represents six shares in the foreign company.

The company whose shares it represents usually sponsors the ADR. There can be three levels of sponsorship.<sup>3</sup> A Level I sponsored ADR is created by the company to expand the market for its securities to the United States, but without needing to register with the SEC, or to conform to US GAAP. Institutional investors trade such an ADR in the OTC Bulletin Board or Pink Sheets trading systems. Level II and III ADRs can be listed on exchanges. Level II and Level III sponsored ADRs must register with the SEC, and financial statements must be reconciled to US GAAP, although IFRS as issued by IASB is now acceptable.<sup>4</sup> A Level III sponsorship is required if the ADR is a primary offering and is used to raise capital for the company.

From a portfolio management perspective, cross-listed foreign companies allow investors to take advantage of international diversification without having

to trade in a foreign market. The benefits of international diversification have been the focus of many important studies. In a seminal paper, Grauer and Hakansson (1987) examine the benefits of international diversification using the returns of portfolios of bonds and stocks and find that the gains from using non-US asset categories are very large. De Santis and Gerard (1997) find that expected gains from international diversification for a US investor have averaged 2.11 per cent per year and had not declined during the sample period of their study. More recently, Chiou (2006) and Driessen and Laeven (2007) examine the benefits of international diversification from the point of view of investors located in different parts of the world. Results generally indicate that the benefits from investing abroad are large. This is especially true for investors in developing countries, and those who are located in high country-risk nations.

Aggarwal *et al* (2007) find that ADRs are the preferred mode of holdings rather than the underlying stock of US-listed foreign firms if the local market of the issuer has weak investor protection, low liquidity and high transaction costs. Callaghan *et al* (1996) study the investment characteristics of ADRs. They find that ADRs have lower P/E multiples, higher dividend yields and lower market-to-book ratios than international benchmarks, as measured by the Morgan Stanley Capital International Perspective (MSCIP). In addition, there are significant differences in country and industry representations between the ADR sample and the world market portfolio. Also, ADRs provide a higher monthly return and a higher standard deviation than the MSCIP, but offer greater return per unit of risk than the index. Both the ADR sample and the MSCIP have lower betas than the S&P 500, and they conclude that ADRs should receive a significant weighting in the portfolios of internationally diversified investors. Kabir *et al* (2005) also study international

diversification using ADRs. They find diversification benefits from ADRs, especially when combined with various country indexes.

Our paper extends prior research, by examining the characteristics and performance of ADRs in terms of index construction and the role of ADRs on foreign ordinaries as an international diversifier. We find that ADRs in EAFE are tilted toward three factors: giant cap, high-dividend yield and UK stocks. This finding is consistent with earlier research on ADR characteristics reported by Callaghan *et al* (1996). In contrast to prior studies, we find that over the January 1998 to June 2007 period, an ADR breakout of the S&P Global 700 (a well-known international index) outperformed the S&P500, but that the ADR portfolio underperformed the broader S&P Global 700. Moreover, we find that portfolio combinations of ADRs with the S&P500 provide inefficient diversification opportunities relative to an efficient frontier analysis of the S&P500 and the Global 700.

## CHARACTERISTICS AND PERFORMANCE OF ADRs

In the following sections, we examine the characteristics and performance of ADRs in international indexes. In the first section, we look at the characteristics of ADRs included in the EAFE index; specifically, we look at ADRs in terms of several common factors. These ADR factors or 'buckets' include country composition, sector, size (market cap), beta, price multiples and dividend yield. Following that, we examine the absolute and risk-adjusted return characteristics of ADRs in the context of an efficient frontier analysis of US and international equities (as measured by the S&P500 and S&P Global 700) versus portfolio combinations of US equities and ADRs (measured by the S&P500 and an

ADR breakout of the S&P Global 700). We also discuss caveats – notably for yield-seeking taxable accounts – and then conclude.

## CHARACTERISTICS OF ADRs IN INTERNATIONAL INDEXES

### ADR<sub>s</sub> by country buckets

Figure 1 shows a countrywide breakdown of ADR to non-ADR-based foreign stocks in the EAFE index as of 29 December 2006.<sup>5</sup> On balance, ADRs make up some 60 per cent of stocks in the EAFE index (not shown). At 81 per cent, the United Kingdom makes up the largest countrywide percentage of ADRs-to-non-ADR<sub>s</sub>. The second highest ADR-to-non-ADR ratio lies in two other Western European countries, France and the Netherlands, both at 71 per cent. Spain, Hong Kong and Germany have relatively high ADR compositions in EAFE, with ADR-to-non-ADR ratios at 69, 68 and 65 per cent, respectively. In contrast,

Singapore, at 30 per cent, has the lowest ADR-to-non-ADR ratio, whereas other countries with low ADR percentages include New Zealand, at 33 per cent, Australia and Sweden, each at 34 per cent and Belgium, at 35 per cent.

### ADR<sub>s</sub> by sector buckets

Figure 2 shows a sector-wide breakdown of ADR-to-non-ADR-based foreign ordinaries in EAFE. The usual 10 sectors are shown, including consumer discretionary, consumer staples, energy, financials, health care, industrials, information technology, materials, telecommunication services and utilities. Energy, at 92 per cent, has the highest ADR-to-non-ADR sector composition in EAFE. Telecommunication services are a close second, having an ADR-to-non-ADR ratio of 87 per cent. Information technology, at 68 per cent, is also relatively high, given that the ADR percentage in EAFE is about 60 per cent. On the other hand, industrials and consumer

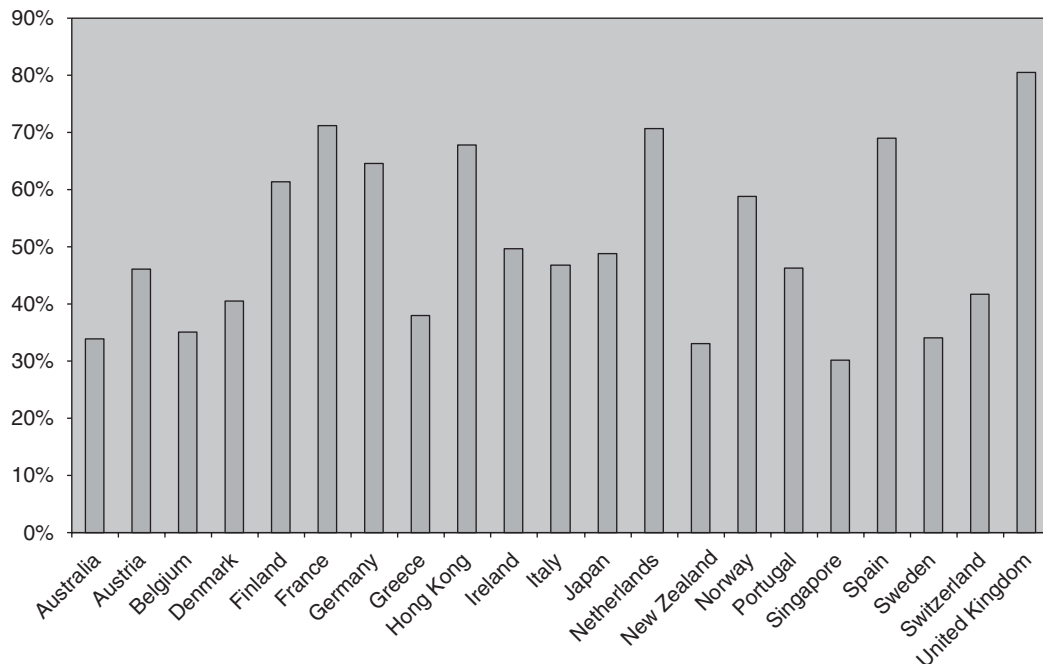
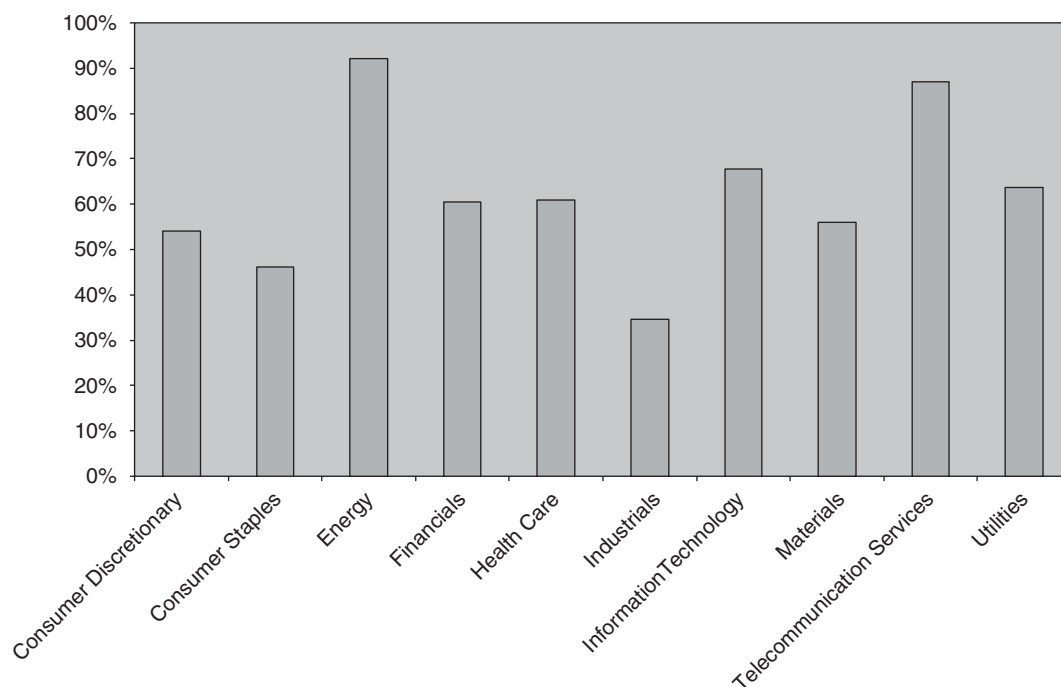


Figure 1: Percentage composition of ADRs (versus non-ADR) by country buckets in EAFE.



**Figure 2:** Percentage composition of ADRs (versus non-ADRs) by sector buckets in EAFE.

staples, at 35 and 46 per cent, have the lowest ADR-to-non-ADR sector ratios in EAFE. Consumer discretionary and materials, at 54 and 56 per cent, rank next, whereas financials and health care have ADR-to-non-ADR ratios typical of EAFE (at 60 per cent). Regarding value versus growth sectors, it appears that the ADR composition of EAFE is equity style neutral, with energy representing a value-style sector, and telecommunication services and information technology representing growth styles.

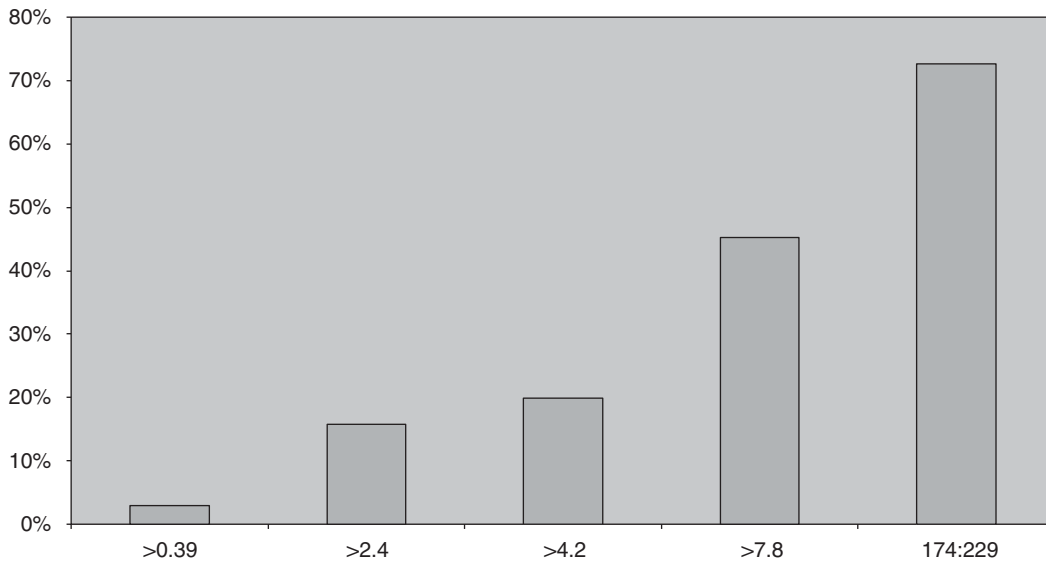
### ADRs by size buckets

Figure 3 shows the ADR-to-non-ADR ratios in EAFE by size quintiles (again, as of 29 December 2006). The five market-cap ranges include Q1 for large-cap-to-giant-cap stocks at US\$17.4 to \$229 billion, Q2 for large-cap stocks with market caps exceeding \$7.8 billion (up to \$17.4 billion), Q3 for mid-cap-to-large-cap stocks with market caps exceeding \$4.2 billion, Q4 with

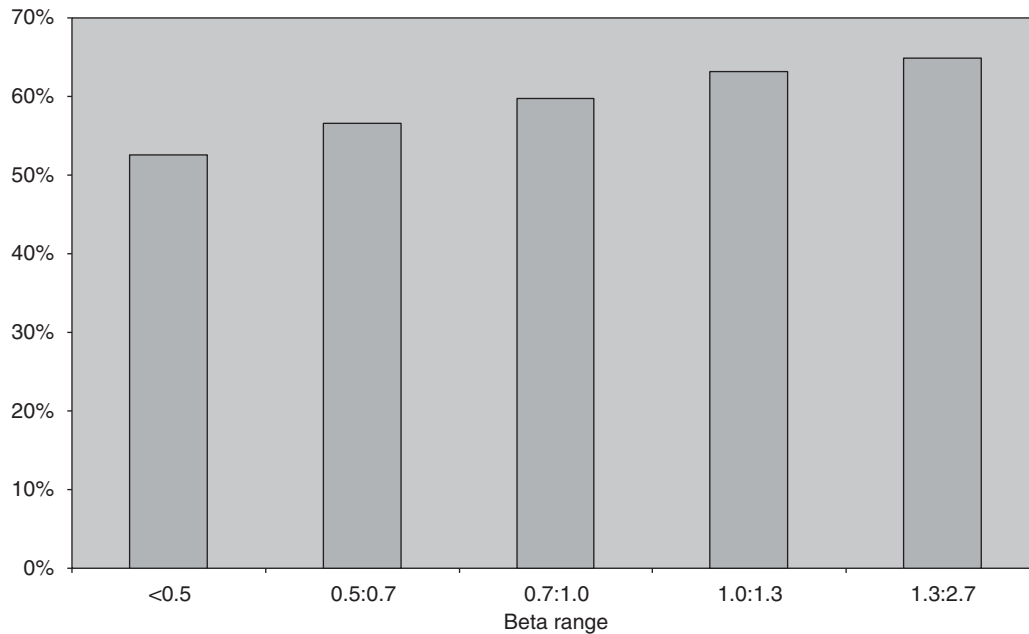
mid-caps having market caps greater than \$2.4 billion and Q5 for small-to-mid-cap stocks with market caps exceeding \$0.39 billion up to \$2.4 billion. As shown, the ADR-to-non-ADR ratios by size quintile are clearly tilted toward large-to-giant-cap stocks. Specifically, ADRs make up some 73 per cent of stocks in EAFE-Q1, with market caps exceeding \$17.4 billion. In EAFE-Q2, for large caps, ADRs make up some 45 per cent of stocks, whereas in EAFE-Q3, for mid-to-large caps, ADRs make up 20 per cent. In EAFE-Q4, the mid-cap arena, ADRs make up 16 per cent of EAFE stocks, whereas in EAFE-Q5, the small-cap bucket, the ADR-to-non-ADR ratio is only 3 per cent.

### ADRs by beta buckets

Figure 4 shows the ADR-to-non-ADR ratios in EAFE by beta quintiles. These quintiles consist of stocks with betas less than 0.5 (Q1), 0.5–0.7, 0.7–1.0 (market beta),



**Figure 3:** Percentage composition of ADRs (versus non-ADRs) by size buckets in EAFE (\$-billions of market cap).



**Figure 4:** Percentage composition of ADRs (versus non-ADRs) by beta buckets in EAFE.

1.0–1.3, and stock betas higher than 1.3 (Q5). Conventional wisdom suggests that stocks with betas higher than 1.0 – such as information technology stocks – represent ‘growth’ stocks, whereas stocks with betas less than unity – such as health-care

stocks – are typical of ‘value’ stocks. Stocks with betas of unity have average market risk. As of 29 December 2006, EAFE seems factor neutral with respect to the beta composition of ADR to non-ADR-based foreign shares. For example, the ADR-to-non-ADR ratios

by beta in Q4 and Q5 are 65 and 63 per cent, whereas the compositions of ADR betas in Q2 and Q3 are at or near 60 per cent (60 per cent for Q3 and 57 per cent for Q2). Figure 4 shows a slight tilt toward relatively high ADR betas, with Q5 having an ADR-to-non-ADR ratio of 65 per cent, whereas Q1 with low ADR betas (less than 0.5) makes up only 53 per cent of EAFE stocks in this relative risk bucket.

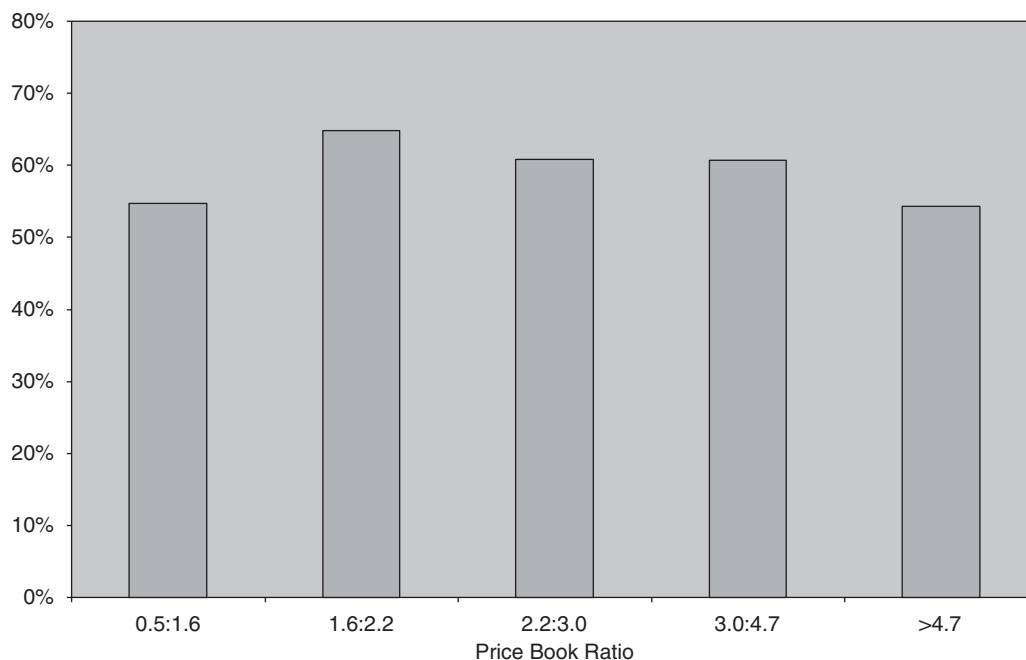
### ADRs by price-to-book buckets

Figure 5 shows the ADR-to-non-ADR ratios in EAFE by price-to-book quintiles. Price-to-book quintiles consist of stocks in the following buckets: Q1 at 0.5–1.6 for relatively low price/book stocks, Q2 at 1.6–2.2 for moderate price/book stocks, Q3 at 2.2–3.0 for average price/book stocks (or middle of the road stocks), Q4 at 3.0–4.7 for somewhat high price/book stocks and Q5 for high price/book stocks (price-to-book ratio greater than 4.7). At 65 per cent, the ADR-to-non-ADR ratio by price-to-book quintiles is highest in Q2, the moderately

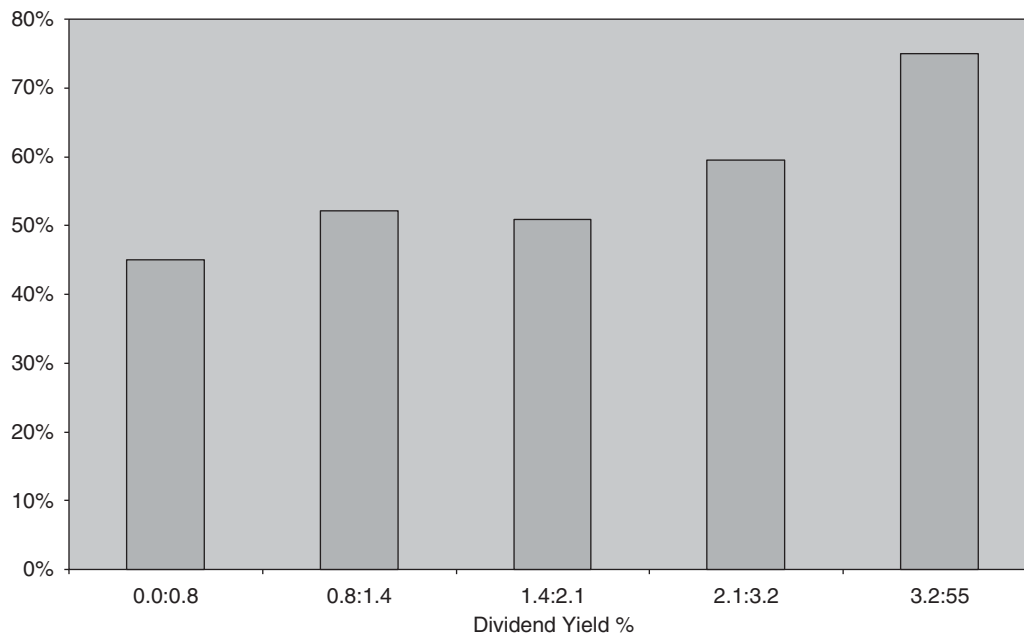
low price-to-book ratio quintile as of 29 December 2006. There does not appear to be a tilt either to stocks with unusually low price/book ratios or to high price/book ratios, as the ADR compositions in EAFE for these quintiles are 55 and 54 per cent, respectively. Moreover, the ADR-to-non-ADR ratios for stocks in the average-to-moderately high price-to-book buckets, Q3 and Q4, are near 60 per cent. Given that stocks with low price-to-book ratios are typical of ‘value’ stocks, it appears that the concentration of value-oriented ADRs in Q2, at 65 per cent, represents a more conservative form of value-style investing (such as high-dividend-yield ADRs shown next), as compared with the unusually low price/book ADRs in Q1, at 55 per cent, which likely represent the stocks of risky, troubled companies.

### ADRs by dividend yield buckets

In turn, Figure 6 shows the ADR-to-non-ADR ratios in EAFE by dividend yield



**Figure 5:** Percentage composition of ADRs (versus non-ADRs) by price-to-book buckets in EAFE.



**Figure 6:** Percentage composition of ADRs (versus non-ADRs) by dividend yield buckets in EAFE.

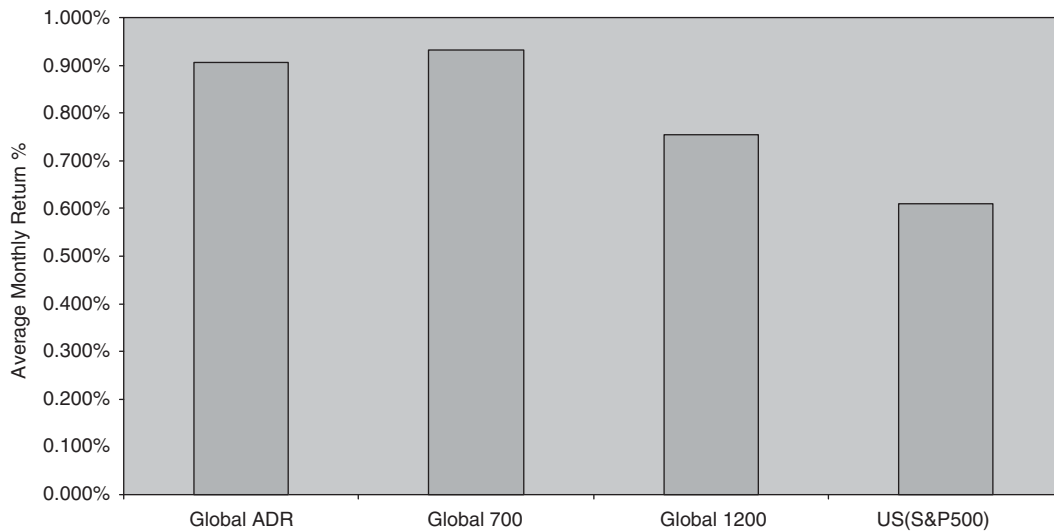
quintiles. The yield quintiles consist of stocks in the following buckets: Q1 at 0.0–0.8 per cent for zero-to-low-dividend yield stocks, Q2 at 0.8–1.4 per cent for moderately low-dividend yield stocks, Q3 at 1.4–2.1 per cent for average (again, middle-of-the-road stocks) dividend yield stocks, Q4 at 2.1–3.2 per cent for moderately high-yield stocks and Q5 for high-yield stocks with dividend yields greater than 3.2 per cent. ADRs in EAFE are clearly tilted toward high-dividend yield stocks. This is evidenced in Q5, the high-yield quintile, where the ADR-to-non-ADR ratio is 75 per cent. Alternatively, in Q1 and Q2, spanning zero-to-moderately-low-dividend yield stocks, the ADR-to-non-ADR ratios are only 45 and 52 per cent, respectively. In Q3, the ADR composition by dividend yield is 51 per cent. Summarising these findings, the empirical evidence on ADR characteristics reported in Figures 1–6 suggests that ADRs in EAFE are tilted toward three common factors: giant-cap, dividend yield and UK (or, at least, Western European) stocks.

## PERFORMANCE OF ADRs IN GLOBAL INDEXES

This section investigates the performance of ADRs versus other international and global opportunities for the period January 1998 to June 2007.<sup>6</sup> We look at the return and risk characteristics of ADRs in the S&P Global 700 index versus other well-known portfolios. These comparative portfolios include the S&P Global 1200 (S&P500 and Global 700), the S&P Global 700 (G1200 *ex* S&P500) and the S&P500 index. We discuss the performance and risk aspects of ADRs as a stand-alone portfolio, and we assess the performance benefit (or possible lack thereof) of using ADRs in the development of globally efficient portfolios. Our performance and risk assessment is from the perspective of a US investor.

### ADRs by absolute return

Figure 7 shows the average monthly return on ADRs versus other well-known portfolios (indexes) during the nine and



**Figure 7:** Performance of ADRs versus broader indexes for the January 1998 to June 2007 period.

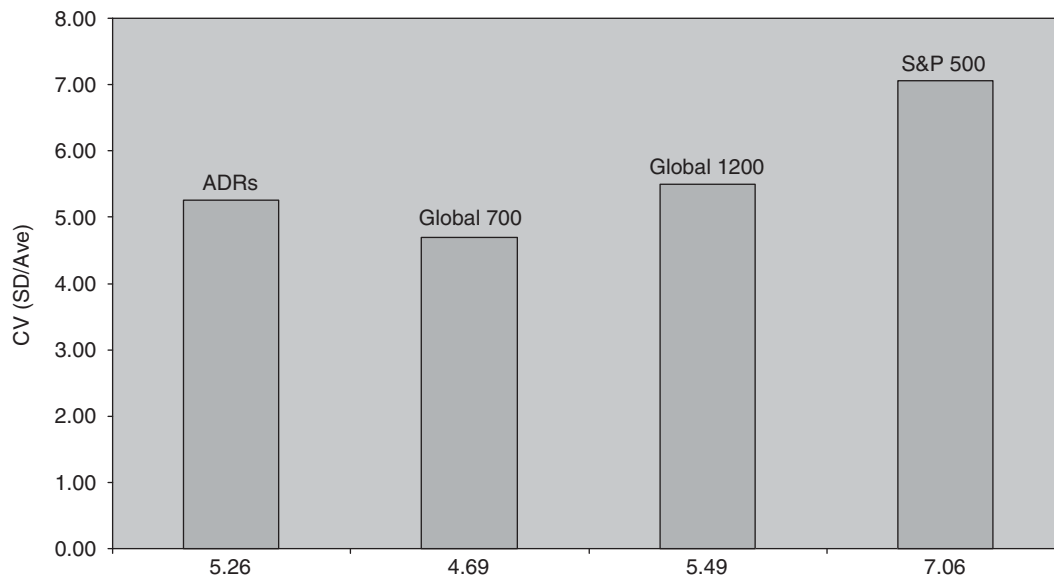
one-half year sample period. The figure shows that the ADR portfolio underperformed (slightly) the more diversified Global 700 portfolio. The average monthly returns on the two international portfolios were 0.907 and 0.933 per cent, respectively. Not surprisingly, and in light of prior studies which emphasise the benefit of global diversification, the Global 1200 portfolio underperformed both of these international indexes, as the Global 1200 consists of a diversified mix of Global 700 and the S&P500. In turn, the Global 1200 had an average monthly return of 0.754 per cent, whereas the S&P500 had a return of 0.610 per cent.

On a portfolio risk scale, it is interesting to note that the standard deviation of return on ADRs, at 4.77 per cent, is higher than the comparable risk measure on the Global 700, at 4.38 per cent. On the downside, for risk comparison, ADRs had the lowest monthly return, at -16.97 per cent, compared with the lowest monthly return observed on Global 700, at -12.33 per cent. On the upside, the maximum monthly return on ADRs, at 11.55 per cent, was slightly higher than the Global 700, at 11.34 per cent. These portfolio return and risk findings suggest that

ADRs provide investors with somewhat lower absolute return and higher risk. This suggests that the reported ADR tilt (Figures 1, 3 and 6) in global index construction toward giant-cap, high-dividend yield and UK stocks does not provide US investors (as a distinct ADR portfolio opportunity) with sufficiently high enough reward to justify the extra risk.

### ADRs as stand-alone portfolio

We now show how ADRs measure up as a 'stand-alone' portfolio. In this context, Figure 8 shows the coefficient of variation (CV) for the four diversified portfolio opportunities, again the S&P ADRs, Global 700, Global 1200 and the S&P 500. At 5.26, the figure shows that the ADR portfolio has a higher CV (risk/reward ratio) than the more diversified Global 700, at 4.69. This happens not only because the average reward (average monthly return) on the Global 700 is higher than the average return on ADRs, but also because the risk (measured by return standard deviation) on the former portfolio is lower. Alternatively, the Global 700 portfolio has a higher reward-to-risk ratio ( $1/CV$ ) than the corresponding ADR portfolio.



**Figure 8:** Coefficient of variation: ADRs versus diversified indexes for the January 1998 to June 2007 period.

Figure 8 does suggest that international diversification *per se* is prudent for US investors because, at 7.06, the S&P500 has the highest risk-per-reward ratio among the four portfolio opportunities. The question that remains is whether a US investor is better off with a diversified portfolio of US equities and ADRs, or with a diversified portfolio of US equities and an unconstrained international portfolio such as the Global 700.

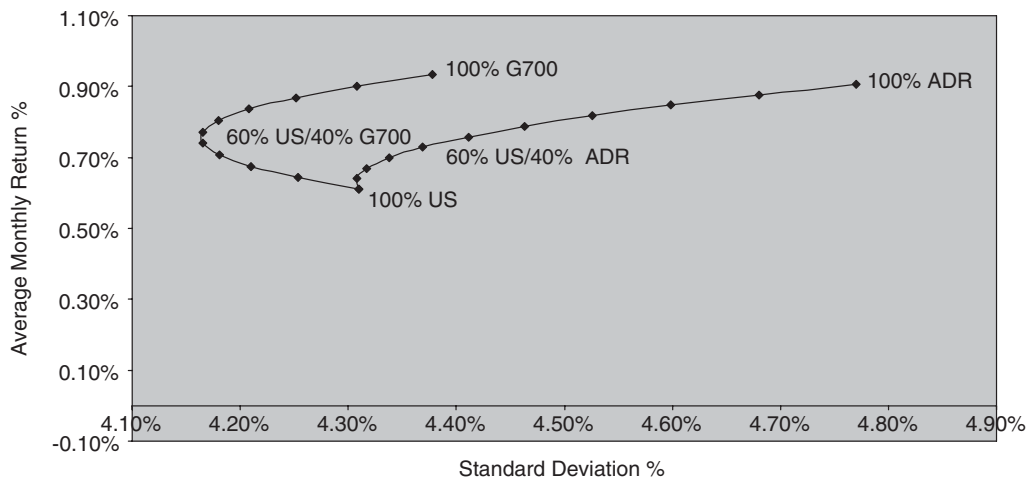
### ADRs as international diversifier

Figure 9 shows a display of two global-based efficient frontiers. We use these frontiers to address the more fundamental question of whether ADRs provide efficient or inefficient diversification for US investors.<sup>7</sup> One of the frontiers shows a diversified mix of US equities (S&P500) and the Global 700 (Global 1200 *ex* S&P500), whereas the other frontier shows a diversified mix of US equities and ADRs (again, the ADR breakout of the S&P Global 700). On a comparative basis, the efficient frontier analysis shows that international diversification with ADRs provides

(comparatively) inefficient diversification for US investors. This is because the risk-adjusted portfolio returns are everywhere better with portfolio combinations of the S&P500 and Global 700. Not surprisingly, this happens because the return correlation between the S&P500 and Global 700, at 0.84, is lower than the rate of return correlation between the S&P500 and ADRs, at 0.89. Moreover, given our reporting on ADR characteristics, it would appear that ADRs are an inefficient diversifier for US investors because of the tilt toward giant-cap, high-yield stocks of the United Kingdom.

### ADR CAVEATS

It is worth noting some caveats that may impact the relevance of our efficient frontier findings (Figure 9). These ADR caveats are statistical and economic in nature. From a statistical perspective, it is noteworthy that while the performance and risk benefits of investing in the S&P500 and the Global 700 are everywhere better than those from portfolio combinations of the S&P500 and the ADR breakout, the magnitude of the performance and risk differentials seems



**Figure 9:** Efficient frontier analysis: US and Global 700 versus US and Global ADR for the January 1998 to June 2007 period.

small. At a 60/40 asset mix, the average monthly return benefit of including the Global 700 over the ADR breakout is only about 1 basis point (bp) per month (0.74 versus 0.73 per cent). In turn, the reduction in portfolio risk with the Global 700 as the international diversifier is only about 20bp per month (4.17 versus 4.37 per cent).

From an economic perspective, it is important to note that qualified dividends and capital gains received on US-listed foreign stocks and ADR-based shares are currently subject to a reduced 15 per cent US tax rate (just like US stocks), whereas the payouts from non-ADR-based foreign companies are subject to higher local tax and withholding rates, at say 28 per cent.<sup>8</sup> Other things the same, the reduced US tax rate on ADR-sponsored shares of foreign companies would cause yield-seeking investors in taxable accounts to prefer a more concentrated portfolio of ADRs than might otherwise be the case for a globally diversified strategy. Preferential tax and withholding treatment on US-listed foreign shares is good reason why ADRs on the stocks of large, dividend-paying companies tend to populate the international indexes. It is also likely that foreign companies used in

the index construction, notably large-cap UK companies, derive a significant portion of their revenue from exports to the United States.

On the other hand, it has been pointed out to us that there is a growing trend by foreign companies to de-list their ADRs on US financial exchanges. Apparently, these companies are tired of the costly financial and regulatory requirements of the US SEC, even though, as we noted before, compliance by foreign companies with IFRS (in lieu of US GAAP) is now acceptable for the cross-listing of shares on US financial exchanges. If the de-listing trend gains momentum, one could argue that the reduced supply of ADR-sponsored firms would limit the investor's appetite to hold a more concentrated global portfolio. Moreover, it has been pointed out that a temporal arbitrage exists between the ADRs on ordinary shares and the performance of those foreign shares. While the ADR performance caveats that we outline above will likely impact the portfolio efficiency results that we reported in Figure 9, the net impact of these performance caveats on our gross finding of ADR portfolio inefficiency is unclear at this time.

## SUMMARY

This study looks at the characteristics and performance of ADRs on foreign stocks in international and global indexes. As of 29 December 2006, we find that the ADR composition of EAFE is tilted on a country basis to the stocks of the United Kingdom (or, at least, Western Europe on a regional basis). Consistent with prior research, the ADR tilt in EAFE is non-factor neutral with respect to size and dividend yield, as the international index is biased toward giant-cap and high-dividend yield companies. Taken together, it appears that the ADR percentage of EAFE is biased toward giant-cap, high-dividend yield stocks of the United Kingdom.

We also find that ADRs on foreign ordinaries provide inefficient diversification opportunities for US investors. In this context, portfolio tradeoffs of return and risk are everywhere better with portfolio combinations of the S&P500 and the S&P Global 700, as compared with portfolios of the S&P500 and the ADR breakout of the Global 700. While these performance and risk findings are robust over the January 1998 to June 2007 period, we realise that empirical analysis over a longer time period is warranted, especially in light of prior research, which points to ADR portfolio efficiency. Finally, we temper our ADR performance findings with several caveats, notably for yield-seeking taxable accounts, because of the preferential tax and withholding treatment of dividends received on US foreign-listed stocks.

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used in this study were provided by Delaware Investments, a subscriber to MSCI BARRA via Factset.

## NOTES

1. International indexes such as EAFE and S&P Global 700 consist of foreign stocks (and ADR-based derivatives thereon), whereas global (world) indexes such as S&P Global 1200 include a mix of US and non-US stocks, generally as a proportion of global market cap.
2. ADRs on foreign shares are listed on the NYSE, ASE and NASDAQ.
3. An ADR can be unsponsored; a US bank buys shares of a foreign corporation, does not register them with the US SEC and deposits them at a custodian bank. However, such ADRs are increasingly uncommon and cannot be listed on the major American stock exchanges because they do not comply with listing requirements. In addition, there are Rule 144A Depositary Receipts, which are special ADRs that can only be sold to Qualified Institutional Buyers as a private placement.
4. On 15 November 2007, the US Securities and Exchange Commission announced new rules for the listing of foreign shares on US exchanges. As such, foreign companies that prepare their financial statements according to International Financial Reporting Standards (IFRS) as accepted by the International Accounting Standards Board (IASB) no longer have to prepare or reconcile their financial statements to US GAAP.
5. In our displays (figures) of ADR characteristics, the percentage of ADR and non-ADR-based foreign stocks in EAFE add to '100' by factor buckets. For example, in Figure 1, ADRs on UK stocks make up 81 per cent of UK stocks covered in the EAFE index. For convenience, we refer to this factor-bucket-percentage as the ADR-to-non-ADR ratio.
6. In this section, we use an ADR breakout of the S&P Global 700 index. An ADR breakout of EAFE would be preferred for transition with our prior section on ADR characteristics. However, we (and Delaware Investors) were unable to find a readily available series of monthly returns on an ADR breakout of the EAFE index.
7. The issue of whether ADRs provide efficient or inefficient diversification should be framed relative to another international index. Also, if the ADR portfolio were a subset of a broader index, then modern portfolio theory would argue that the subset (ADR-based or otherwise) will have sub-optimal portfolio characteristics. For example, a broader index consisting of ADRs and non-ADR-based foreign ordinaries should have everywhere higher risk-adjusted portfolio returns. We demonstrate this MPT prediction with asset mixes of the S&P500 and Global 700 versus mixes of the S&P500 and an ADR breakout of the Global 700 in our analysis that follows.
8. Exceptions and conditions apply; also our comments on dividend and capital gain taxation should not be interpreted as providing tax or investment advice.

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