The Liquidity Premium

Michael J. Chafkin, Vice President, Citi Issuer Services

The Liquidity Premium

By: Michael J. Chafkin, Vice President
Citi Issuer Services

Introduction:
A recent academic study showed that cross-listed firms benefit from, on average, a sustainable valuation premium of 14 percent over companies that do not cross-list.[1] For companies that list on a major U.S. exchange, such as the NYSE or NASDAQ, the premium was more than twice as large, averaging 33 percent.

The findings of Citi's "The Liquidity Premium" study show that firms with *liquid* cross-listed depositary receipts (DRs) can enhance their valuation premiums even further through a *liquidity premium*. Citi also found that the liquidity premium can apply to companies with liquid American Depositary Receipts (ADRs) that are direct listed on a U.S. exchange and do not have an underlying listing in their local market.

Findings and Methodology:
Citi found that, on average, companies with liquid DRs, whether cross-listed or direct-listed, had higher valuations, as measured by their price-to-book-value ratios (P/BVs), than those with less liquid DRs.

The DRs were divided into two groups: cross-listed (in the U.S. or London, plus the issuer's home market), and direct-U.S. listed (U.S. only). The two groups were ranked by their liquidity within each group, as measured by average daily 2006 U.S. dollar value of DR trading,[2] and divided into quartiles from most liquid to least liquid.

Citi compared valuations, as measured by the trailing twelve-month price-to-book-value ratio (P/BV), of 519 non-U.S. companies with 493 cross-listed DRs. (The 493 cross-listed companies included 360 ADRs listed on U.S. exchanges: 277 on the NYSE, 81 on NASDAQ, and 2 on AMEX; plus 133 GDRs listed on the London Stock Exchange (LSE)). In addition, 28 direct-listed ADRs on U.S. exchanges (27 on NASDAQ, and 1 on the NYSE) were measured. To minimize the effect of outliers, Citi eliminated all companies with dividend yields over 10 percent and P/BVs above 20. Then, all companies that were more than three standard deviations above the mean (99th percentile) were eliminated. After eliminating outliers, 521 DRs remained in the database. P/BV data was obtained from Bloomberg as of 8/29/2006.

For companies with cross-listed DRs, valuations in the most liquid quartile were 43 percent higher than those in the least liquid quartile (2.98 versus 2.08), as shown in Figure 1 below. For direct-listed ADRs the difference was 224 percent (6.35 versus 1.96) as shown in Figure 2 below.

[1] Craig Doidge, G. Andrew Karolyi, & Renee M. Stulz, *Has New York become less competitive in global markets? Evaluating foreign listing choices over time* (Dice Center working paper, April 23, 2007), *available at*: http://www.cob.ohio-state.edu/fin/dice/papers/2007/2007-9.htm. The study covered the period from 1997 through 2005.

[2] U.S.-listed ADRs: May 2006 YTD; London-listed GDRs: January 2005 – May 2006.

Figure 1

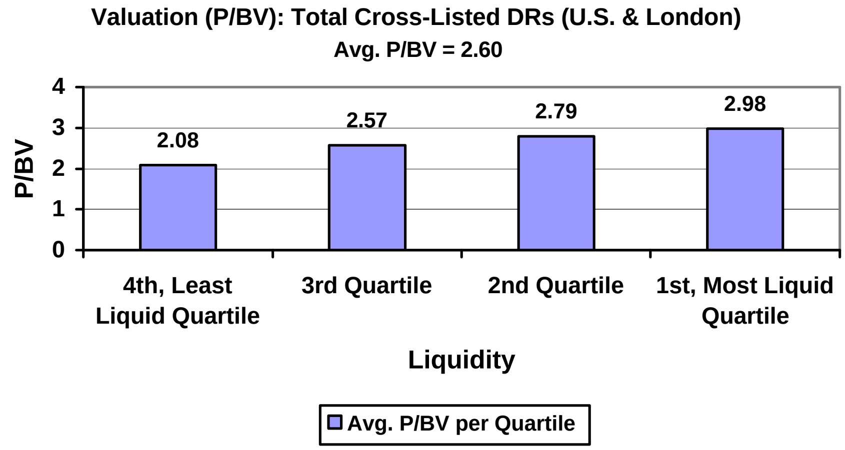
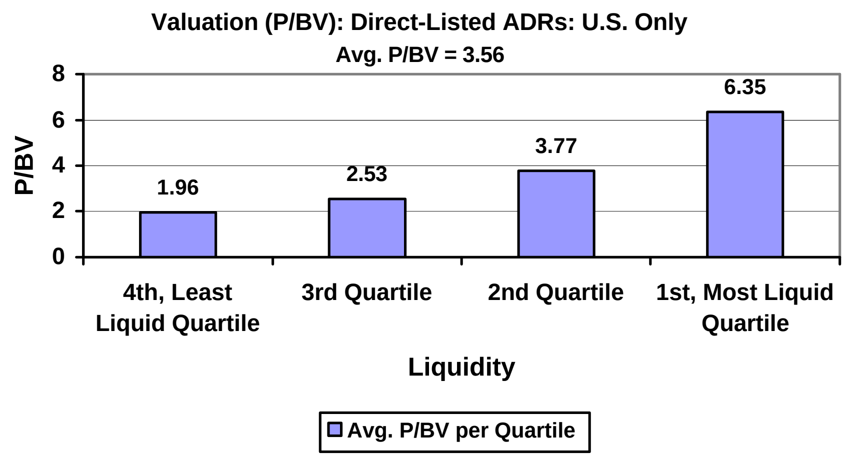


Figure 2



As shown in Figures 3 and 4 below, non-U.S. companies that have cross-listed ADRs trading in the U.S. market have, on average, 8 percent higher valuations than companies whose GDRs trade in London (2.73 versus 2.52).

The higher average P/BV valuations for companies that cross-list in the U.S. may be explained by increased investor recognition of these firms. Non-U.S. companies that list their ADRs on a U.S. exchange must comply with stricter U.S. market regulations including U.S. Generally Accepted Accounting Principles (U.S. GAAP), Securities and Exchange Commission registration, and the Sarbanes-Oxley Act of 2002, while those that list their GDRs in London have to comply with less stringent regulations.

Figure 3

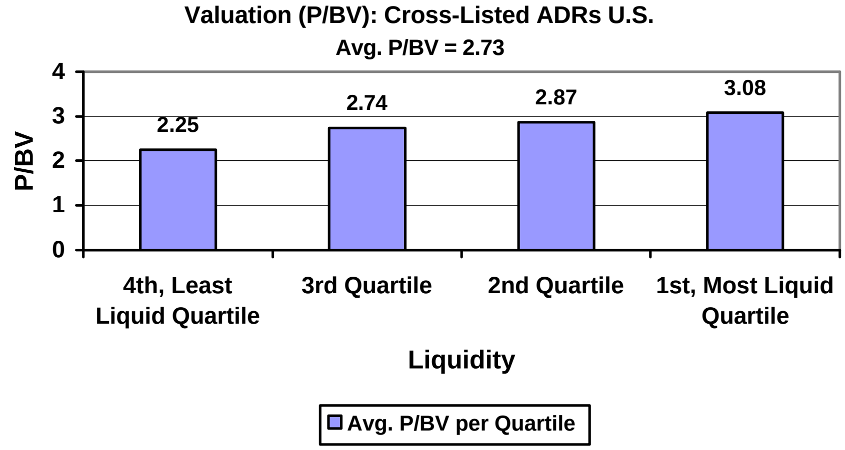
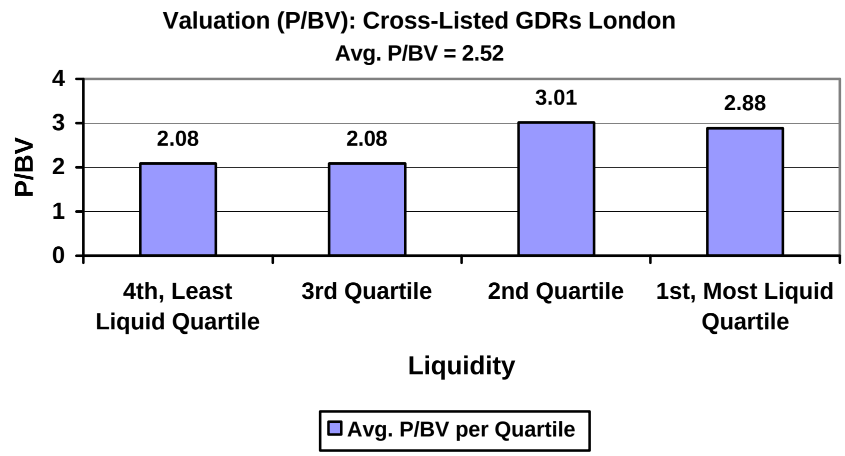


Figure 4



Hypothesis Testing:

Company valuations vary by industry sector and market. By analyzing data by sector and country, Citi tested the hypothesis that there is a strong, positive relationship between liquidity and valuation. Citi found that companies with more liquid DRs from the same industry sector had, on average, higher valuations (P/BV) than those with less liquid DRs. As shown in Table 1 below, across all regions, companies with cross-listed DRs from the same industry sector had, on average, higher valuations (P/BVs) in 80 percent of the sectors, with an average liquidity premium based on P/BV of 24 percent.

Table 1 - Valuations (P/BV) by Industry Sector
Total Cross-Listed DRs (U.S. and London)
80% of sectors had positive liquidity premiums based on P/BV

Sector	Count	More Liquid Quartiles 1& 2	Count	Less Liquid Quartiles 3 & 4	Difference	Liquidity Premium
Information Technology	39	2.68	47	1.86	0.82	44%
Health Care	12	3.95	21	3.19	0.76	24%
Consumer Discretionary	15	2.62	27	2.74	-0.12	-4%
Consumer Staples	15	3.31	21	2.44	0.87	36%
Materials	35	3.14	32	1.89	1.25	66%
Energy	21	2.92	9	1.79	1.13	63%

Financials	45	2.49	25	2.43	0.06	2%
Utilities	13	2.07	9	2.65	-0.58	-22%
Telecom Services	33	2.72	27	2.41	0.31	13%
Industrials	15	4.00	25	2.29	1.71	75%
Total	243	2.88	243	2.32	0.56	**24%**

Source: Bloomberg, Citi Analysis

As shown in Table 2 below, companies with direct-listed ADRs from the same industry sector had, on average, higher valuations (P/BVs) in all sectors where there was at least one ADR in each liquidity group. The average liquidity premium based on P/BV was 145 percent.

Table 2 - Valuations (P/BV) by Industry Sector
Direct-Listed ADRs (U.S. Only)
100% of sectors had positive liquidity premiums based on P/BV

Sector	Count	More Liquid Quartiles 1& 2	Count	Less Liquid Quartiles 3 & 4	Difference	Liquidity Premium
Information Technology	10	5.06	7	2.30	2.76	120%
Health Care	2	4.44	1	2.51	1.93	77%
Consumer Discretionary	2	4.39	3	1.11	3.28	296%
Total	14	4.88	11	1.99	2.89	**145%**

Source: Bloomberg, Citi Analysis

Table 3 shows that within the same industry sector, companies with cross-listed DRs from the same country, had, on average, higher valuations (P/BVs) in 75 percent of the countries where there was at least one DR in each liquidity group.

Table 3 - Valuations (P/BV)
Same Industry Sector and Country
% of Countries With a Liquidity Premium
Total Cross-Listed DRs (U.S. and London)

Sector	# of Countries with DRs in Both Liquidity Groups	# of Countries Within Sector With a Liquidity Premium	% With Liquidity Premium
Information Technology	9	6	67%
Health Care	3	3	100%
Consumer Discretionary	5	3	60%
Consumer Staples	6	6	100%
Materials	10	8	80%
Energy	5	5	100%
Financials	14	10	71%
Utilities	1	0	0%
Telecom Services	7	5	71%
Industrials	7	4	57%
Total	67	50	**75%**

Source: Bloomberg, Citi Analysis

As shown in Table 4, within the same industry sector, companies with direct-listed ADRs (U.S. only) from the same country, had, on average, higher valuations (P/BVs) in 100 percent of the countries where there was at least one ADR in each liquidity group.

Table 4 - Valuations (P/BV)
Same Industry Sector and Country
% of Countries With a Liquidity Premium
Direct-Listed ADRs (U.S. Only)

Sector	# of Countries with DRs in Both Liquidity Groups	# of Countries Within Sector With a Liquidity Premium	% With Liquidity Premium
Information Technology	1	1	100%
Health Care	1	1	100%
Consumer Discretionary	1	1	100%
Total	3	3	**100%**

Conclusions:
A strong positive relationship exists between liquidity, as measured by average daily U.S. dollar value of trading, and valuation, as measured by the trailing twelve-month price-to-book-value ratio (P/BV).

Citi's study reveals a valuation benefit beyond the 33 percent cross-listing valuation premium identified by the Doidge, Karolyi and Stulz study,[3] which compared cross-listed shares of non-U.S. companies with the shares of non-U.S. companies that did not cross-list. Citi has found that companies with liquid cross-listed ADRs and GDRs, and companies with direct-U.S. listed ADRs can enhance their valuation premiums even further through a *liquidity premium*.

- For DRs cross-listed in the U.S. or London, the average liquidity premium of the most liquid DRs was 43 percent higher than for the least liquid DRs. For direct U.S. listed ADRs the premium was 224 percent.
- Non-U.S. companies with cross-listed ADRs trading in the U.S. market have, on average, 8 percent higher valuations than companies whose GDRs trade in London.

Valuations vary by industry sector and country. Citi found that the liquidity premium hypothesis was valid across regions within the same industry sector, as well as within the same industry sector within the same country.

[3] Doidge, Karolyi, & Stulz, *supra* note 1.