



# Depository Receipts Listing and Cost of Equity

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# Overview

- As activity in the depositary receipts (DRs) space has continued to increase significantly over the past few years, DRs remain the predominant vehicle for cross-border equity transactions
- A DR listing can reduce an issuer's cost of capital in the home market via a reduction in cost of equity
- Citi conducted a study analyzing a sample of 36 programs (representing 33% of the DR market liquidity), across multiple geographies and market capitalizations to test this hypothesis
- Our analysis indicates that based on comparison of Beta values three years prior to and after the U.S. listing of a DR program, the median drop in cost of equity was ~5% (or 74 bps) across the study sample

# Purpose and Methodology

## Purpose of Study

- Depository Receipts create value for issuers in several ways:
  - Improve liquidity
  - Diversify shareholder base
  - Improve brand value
  - Reduce firms' cost of capital
- The focus of the study is to analyze if a DR listing would have a positive impact on an issuer's cost of capital in the home market via a reduction in cost of equity

## Cost of Capital & Use of Beta

- Cost of capital consists of two elements: cost of equity ( $k_e$ ) and cost of debt ( $k_d$ )
  - In this study, we focus on cost of equity<sup>1</sup> and how it is affected by an issuer's decision to establish a DR program
  - As per Capital Asset Pricing Model (CAPM), cost of equity is measured as follows:
    - $K_e = R_f + \beta (R_m - R_f)$
- Where:
- $K_e$ : Cost of Equity
  - $R_f$ : Risk-Free Rate
  - $\beta$ : Equity Beta, i.e., measure of sensitivity of market return to asset return
  - $R_m$ : Market Return
- Risk-free rate and market return are macro factors which are not specifically controlled by the issuer
  - Beta is issuer specific and reflects perceived risk of investing in a particular security of that issuer; thus, the study focuses on Beta values and their impact on cost of capital, keeping risk-free rate and market return constant
  - If the Beta of the security has decreased since initiation of the DR program, there is strong reason to believe that the DR program has positively impacted cost of equity and hence cost of capital

<sup>1</sup>Cost of equity was analyzed based on the date when the DR program was listed on a U.S. exchange.

# Purpose and Methodology *(continued)*

## Sample selection<sup>1</sup>

- Sample was selected from constituents of Citi World ex-U.S. Liquid DR Index<sup>2</sup> (CLDR WexUS)
- We believe that securities in this index are best suited to evaluate the impact of a DR program on cost of equity
- Sample of 36 DR programs was selected covering ~33%<sup>3</sup> of the total exchange-listed DR market globally, and covers roughly 67% of total trading volumes, for which data points on Beta values were available
- Sample covers 15 countries from three regions and seven different industry sectors, with market capitalizations ranging from US\$10B to US\$199B

## Data gathering and calculations

- For the 36 sample names drawn from CLDR WexUS, we calculated equity Beta of underlying ordinary shares (represented by DRs) in the home market of the security for a period covering three years before and after the DR program listed on a recognized stock exchange<sup>4</sup>
- We then obtained risk-free rate and market return for each country to calculate cost of equity; these rates were kept constant to eliminate impact of macro events
- We populated underlying index, related Betas, risk-free rate and market returns using Bloomberg Data Service
- The data was analyzed using the following different parameters:
  - Industry
  - Region
  - Listing Date of DR Program
- We evaluated and analyzed results based on median values

<sup>1</sup>Detailed attributes of selected sample are provided in Appendix.

<sup>2</sup>The CLDR WexUS, which accounts for over 97% of total trading volumes of DR programs globally, has security selection criteria based on the following distinctive and objective rules:

- U.S. exchange cross-listed ADR, New York Registry Share or Global Share, or London Stock Exchange traded GDR
- Minimum free-float market capitalization of US\$250 million
- Minimum US\$ value of trading of \$2 million/day for U.S.-listed ADRs, or \$1 million/day for London-traded GDRs
- The indices are calculated and maintained by Standard & Poor's Custom Index Group

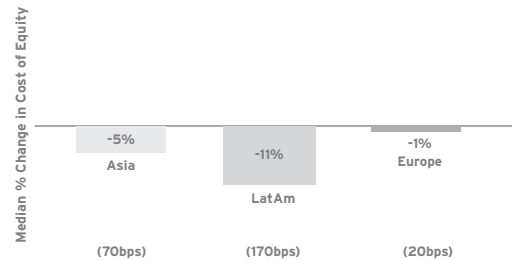
<sup>3</sup>Coverage based on trading volumes as of YTD 11/2009.

<sup>4</sup>We use date of exchange listing rather than effective date of the DR program as we believe that an exchange-listed program, being more liquid, better represents DR performance and its impact on cost of equity.

# Results

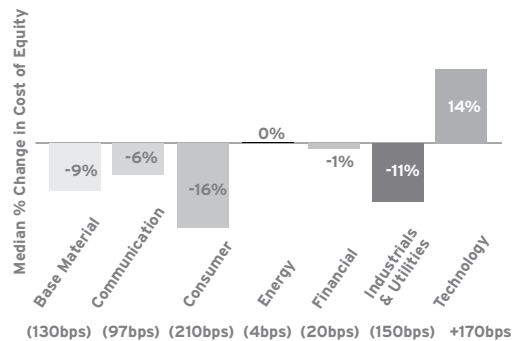
## Based on Region

- To understand how the cost of capital is impacted across different regions, the sample was divided into three key regions
  - Asia covering Japan, India, Philippines, South Korea and Taiwan
  - Latin America (LatAm) covering Brazil and Mexico
  - Europe covering Western European countries
- Results showed a decline in cost of equity across all regions



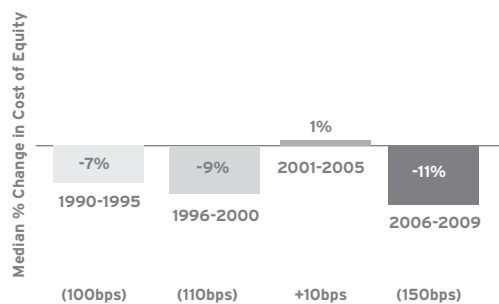
## Based on Industry

- We further analyzed our sample based on different industry sectors
- Cost of equity dropped across six out of seven industry sectors
- In regard to the technology sector, most of the issuers with increased cost of capital had DR programs with effective dates between 1997 and 2000, which may have been negatively impacted because of the “dot com bubble” crisis



## Based on Listing Date of DR Program

- To better understand if reduction in cost of equity was impacted by any particular time period, we looked at the results based on the listing date of DR program
- We divided our sample size based on five-year periods starting from 1990
- We saw reduction in cost of capital in three out of four periods



## Conclusion

- Our analysis of empirical data suggests that after DR listing, the median cost of equity drops by ~5% (or 74 bps)
- This notion supports the case that cross-border listings via the DR platform provides an effective means for issuers to lower their cost of capital while increasing brand image and awareness globally

# Sample Attributes

## Geography

Region	Country	# Issuers
Asia	India	3
	Japan	3
	Philippines	1
	South Korea	1
	Taiwan	3
Latin America	Brazil	8
	Mexico	2
Western Europe	Belgium	1
	Britain	4
	Germany	1
	Greece	1
	Ireland	2
	Italy	1
	Netherlands	3
	Switzerland	2
<b>Grand Total</b>		<b>36</b>

## Market Cap

Market Cap	# Issuers
>=\$100B	4
<\$100B, >=\$50B	8
<\$50B, >=\$10B	24
<b>Grand Total</b>	<b>36</b>

## Listing Date of Program

Year of DR Program	# Issuers
1990-1995	4
1996-2000	18
2001-2005	11
2006-2009	3
<b>Grand Total</b>	<b>36</b>

## Industry

Industry	# Issuers
Basic Materials	7
Communications	3
Consumer	6
Energy	4
Financial	7
Industrial & Utilities	5
Technology	4
<b>Grand Total</b>	<b>36</b>

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