MSCI A Clear View of Risk and Return

MSCI Indices

Consultation on Potential Ideas for Index Stability and Replicability Enhancements

September 2011

Introduction

- For over 40 years, MSCI has constructed global equity benchmark indices that assist the international investment management process
- The MSCI Equity Indices serve investors' needs by being:
  - Relevant and precise performance benchmarks
  - Effective research and asset allocation tools
  - The basis for investment vehicles designed to gain and/or manage exposure to different segments of the global equity markets
- Index needs of investors have evolved over time and have been addressed by enhancements to the MSCI Indices. Some of the recent enhancements include
  - Improvement of the index investability through introduction of the short-term liquidity requirements (2010)
  - Increase in the index stability via enhancing the Size & Coverage Target Area (2011)
- The objective of this consultation is to seek the investment community's feedback on MSCI index construction and calculation methodologies in order to identify areas for potential methodology enhancements with respect to index replicability and efficiency

Key Properties of Benchmarks

Property	Description	Main Current Features	Potential Enhancement Areas
Replicability	It should be possible to passively replicate the benchmark	• Availability of local equities to non-domestic investors • Liquidity screening of securities in the index • Use of replicable prices and FX rates for index calculation • Advance notice of index changes	1. Exchange rates used in the calculation of MSCI Indices 2. Prices used in index calculation and off-exchange liquidity 3. Inclusion of depositary receipts in the MSCI indices 4. Free float market capitalization and liquidity requirements for inclusion in the MSCI Global Standard Indices 5. Tax treatment for the net total return index series 6. MSCI index correction policies 7. Treatment of corporate events between index review announcement and implementation dates
Efficiency	A benchmark should be as stable and simple as possible, in order to keeping replication costs relatively low	• Quarterly rebalancing schedule balances representativeness with a reasonable number of index changes • Buffers at various levels of index construction prevent reverse turnover and reduce replication costs	1. Fair value pricing 2. Potential gaming mitigation measures 3. Index review frequency
Representativeness	A benchmark should be reflective of the investment process it aims to represent	• Balancing size integrity and coverage to achieve a consistent set of global indices • Providing meaningful size, country, style and industry segmentation of the investable universe	1. Definitions of size integrity in DM and EM 2. Country classification of securities 3. Voting rights in index construction

- Index Replicability

Exchange Rates Used in the Calculation of MSCI Indices

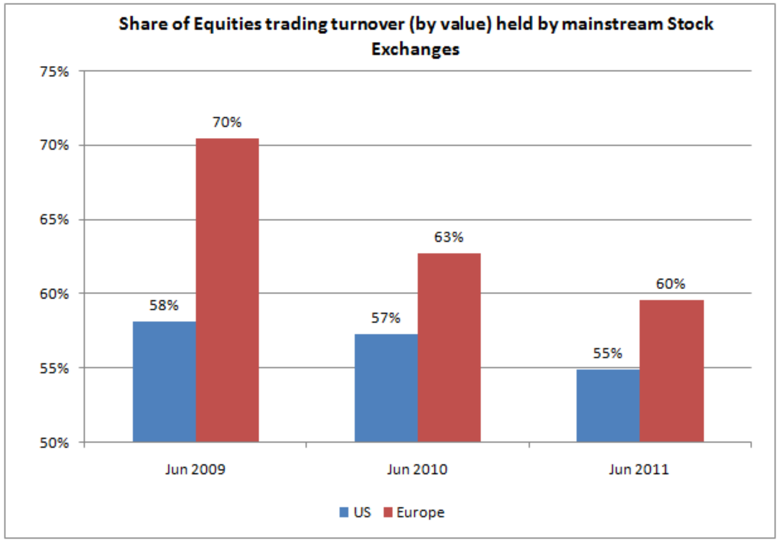
- MSCI currently uses WM/Reuters Closing Spot Rates, taken at 4 PM London time to calculate all of its equity indices
  - The current approach enables MSCI to calculate regional levels using synchronous exchange rates
  - However, it also has disadvantages
    - For some currencies (for ex., KRW and TWD) with no offshore trading, the WM/Reuters 4PM London time rates might not be achievable
    - Exchange rates used are not being synchronous with security prices, potentially causing tracking error on index review or corporate events days
- Discussion points
  - Do you see any issues with respect to the current MSCI policy for exchange rates?
  - Should MSCI switch to different time fixings for the calculation of the official closing index levels?
    - If yes, should the timing of these rates coincide with the close of the equity market / time when the currency trading is most liquid in every country/region?
    - If not, would there be value in providing, in addition to the official closing index levels, snapshots per region using the exchange rates corresponding to the close of each region?
  - Are there any other enhancements with respect to exchange rates used that you would like to see implemented in the MSCI index calculation?

Prices Used in the Calculation of MSCI Indices and Off-Exchange Liquidity (1/2)

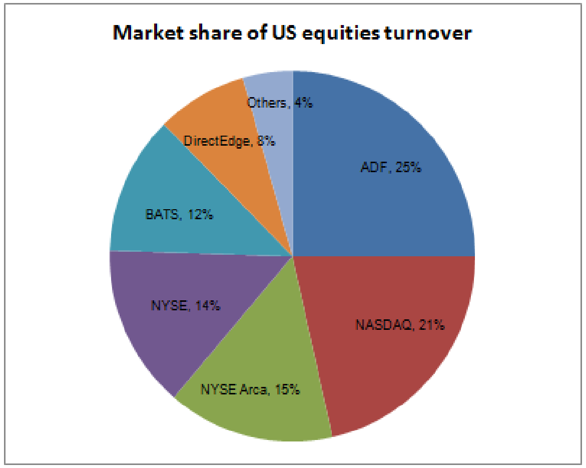
- MSCI currently calculates index levels using the official exchange closing prices or figures accepted as such (typically, auction close, last traded or VWAP price)
- Discussion points
  - Would a single method of calculating the closing price (for example, systematically using VWAP) be preferable to the current policy?
  - Do you see a need in providing additional intraday snapshots of the indices using intraday prices?
  - Is there a case for adding additional price sourcing from non-exchange venues?
    - If yes, in which cases?
  - Are there any other enhancements with respect to prices used that you would like to see implemented in the MSCI index calculation?

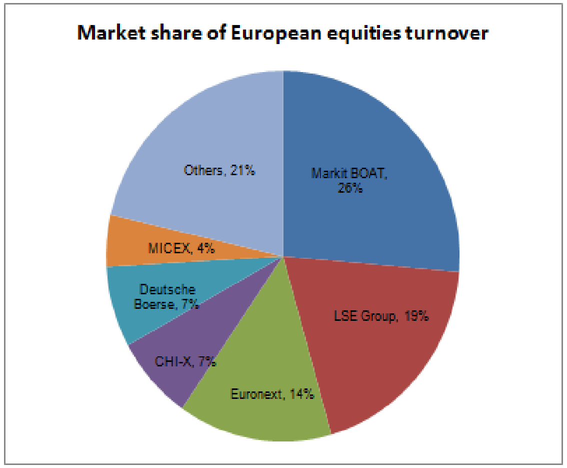
Prices Used in the Calculation of MSCI Indices and Off-Exchange Liquidity (2/2)

- The market share of equities trading by mainstream stock exchanges has fallen in the recent years
- A significant portion of equities trading is accounted by venues such as Dark pools and Electronic Crossing Networks (ECN)
  - Around 45% of US equities turnover occurs outside mainstream stock exchanges, while for Europe, the corresponding figure is about 40%



- Discussion Points
  - How important are these additional sources of liquidity in your investment process?
  - Should MSCI consider the use of these additional sources of liquidity to enhance its ATVR and frequency of trading calculation?





Source: Reuters market share reporter. Market share data as of Jun 2011. ADF stands for alternative display facility created by FINRA. The traditional stock exchange turnover includes the trading turnover on the exchange as well as the trades reported on the exchange

Inclusion of depository receipts in the MSCI indices

- In general, only local company listings are eligible for inclusion in the MSCI Indices
- However, when a local listing has low liquidity and depository receipts (DR) with higher liquidity trade in the same time-zone, DRs may be eligible for index inclusion (for example, the Magnit GDR London listing)
  - Exceptionally, U.S. listings are eligible for the MSCI Russia Index despite being in a different time-zone
- Discussion points
  - In your opinion, should DRs in general be eligible for inclusion in the MSCI Indices?
  - Should full fungibility be a requirement for the eligibility of DRs?
  - Should DR premiums / discounts be a consideration for their eligibility?
  - Is there a case to only include DRs in markets that are difficult to access, even if the liquidity of the DR is lower than the local share (but still fulfilling the requirements of the MSCI Global Investable Market Indices on an absolute level)?
    - If yes, in which markets (e.g., Russia, Brazil, India) ?
  - How important are time zone considerations when including both DRs and local listings in the same country index?
    - For example, should the TEVA PHARMACEUTICAL DR be eligible for inclusion in the MSCI Israel Index?

Free Float Market Capitalization and Liquidity Requirements for the MSCI Global Standard Indices (1/2)

- Two levels of free float market capitalization and liquidity screenings are applied for the MSCI Global Standard Indices:
  1. Absolute free float market capitalization (half of the universe minimum size reference) and liquidity screenings (20 and 15% minimum ATVR respectively for DM and EM) are applied to derive the equity investable universe and are common to the Standard and Small Cap indices
  2. Additional market relative screens are applied to constituents of the MSCI Global Standard indices with the aim of ensuring even higher investability for this segment
     - Approximately 200 securities in the MSCI ACWI universe do not fulfill these additional requirements representing 7% of the securities in MSCI ACWI and 45 bps in market capitalization
- These additional screens result in some securities from the Small Cap index that would otherwise migrate to the standard index being deleted from the Investable Market Index (IMI) as they have too large a market capitalization for the Small Cap index but do not satisfy the additional requirements for inclusion in the MSCI Global Standard Indices
- Discussion Points
  - Are higher investability requirements needed for the Standard Indices than for the Small Cap?
    - If yes, should they be defined relative to the market of the country or be absolute
  - The investable universe liquidity requirement is currently higher for DM (ATVR of 20%) than for EM (ATVR of 15%). Should these requirements be harmonized?
    - Based on the May 2011 index review data, increasing the minimum investable universe ATVR threshold to 20% would lead to no difference in index constituents

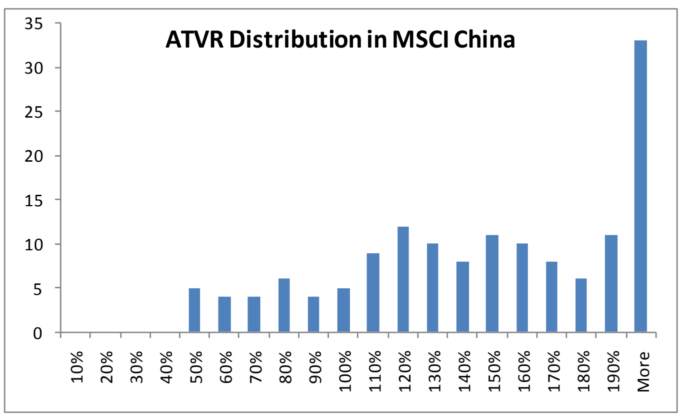
Free Float Market Capitalization and Liquidity Requirements for the MSCI Global Standard Indices (2/2)

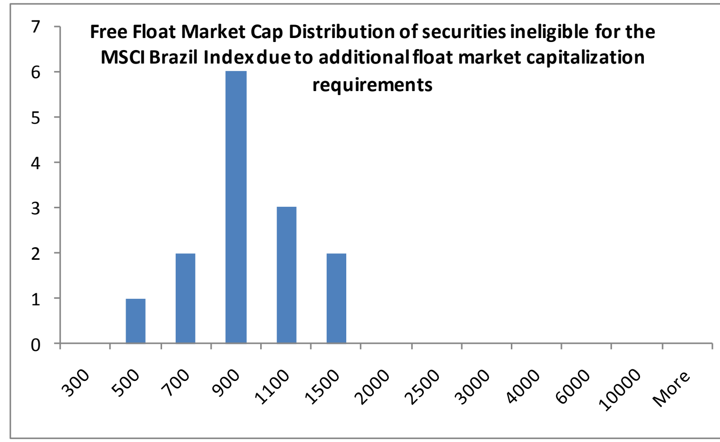
Country	Country Additional Standard Index Minimum ATVR Requirement
CA	31.8%
US	24.5%
EU	28.6%
IL	50.0%
AU	50.0%
HK	20.3%
JP	47.9%
NZ	20.0%
SG	30.2%
CZ	50.0%
EG	21.2%
HU	50.0%
MA	15.2%
PL	25.6%
RU	49.3%
ZA	39.5%
TR	26.4%
CN	50.0%
IN	48.2%
ID	20.5%
KR	26.7%
MY	16.2%
PH	22.0%
TW	46.9%
TH	50.0%
BR	50.0%
CL	15.0%
CO	15.2%
MX	22.2%
PE	41.6%
DM (avg)	33.7%
EM (avg)	33.4%
ACWI (avg)	33.5%

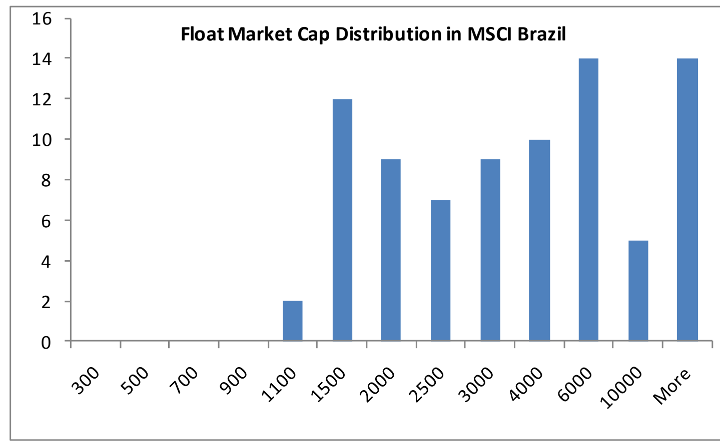
The additional Standard Minimum ATVR Requirement is defined in reference to the corresponding country Standard Index universe

Securities not included in the Standard Indices due to additional Standard Index Min. ATVR requirement		
Country	Security Name	ATVR
PL	ING BANK SLASKI SA	17%
CN	CHINA DATANG CORP REN H	20%
BR	AMBEV ON	22%
RU	OGK-4 (RUB)	25%
RU	TGK-1 (RUB)	26%
KR	LG CORP PREF (NEW)	26%
RU	OGK-5 (RUB)	27%
BR	COMGAS PNA	28%
RU	PHARMSTANDARD GDR	29%
JP	HANKYU HANSHIN HLDG	29%
BR	LOJAS AMERICANAS ON	29%
IN	CADILA HEALTHCARE	31%
ZA	MEDI-CLINIC CORP	31%
BR	CEMIG ON	32%
TW	HOTAI MOTOR COMPANY	33%
CN	YANTAI CHANGYU PIONEER B	33%
IN	GODREJ CONSUMER PDTS	36%
RU	IDGC HOLDING (RUB)	39%
CN	SPRINGLAND INTL HLDGS	40%
AU	NEW HOPE	41%
BR	ALPARGATAS SAO PAULO PN	42%
RU	TATNEFT PREF (RUB)	45%
BR	GUARARAPES CONFECCOES ON	45%
RU	NOVOROSSIYSK PORT GDR	49%
CN	NEW WRLD CHINA LND(CN)	49%

Data as of May 2011 index review







14 securities are ineligible representing 1.9% of the MSCI Brazil market cap
All market capitalizations in USD MM
Securities representing less than 10% of issuer market capitalization are excluded from the statistics
Data as of May 2011 index review

Tax Treatment for the Net Total Return Index Series

- The net total return index series aims to capture the effects of withholding taxes on dividend reinvestment
- The regular cash dividend is reinvested after deduction of withholding tax by applying the **maximum** rate of the company's **country of incorporation** applicable to institutional investors. MSCI uses the maximum rate applicable to non-resident institutional investors who do not benefit from double taxation treaties.
- Discussion points
  - Is there a need to provide more versions of the net total return series with tax assumptions based on different countries of residencies / type of investors ?
  - Are there any other enhancements with respect to tax rates used in the net total return index calculation that you would like to see implemented in the MSCI index calculation?
  - Is there a need of an after-tax returns index (for example, incorporating the capital gains tax for index rebalancing) ?

MSCI Historical Index Level Correction Policy

- In general, restatements due to incorrect dividends and prices are implemented on the day when the error is discovered
  - Historical index levels (in the past 12 months) are restated when the index level impact of the correction on a country or sector index is larger than 50 basis points
  - In certain circumstances, if MSCI determines the error is significant enough to justify the revision of indices impacted by less than 0.5%, MSCI reserves the right to correct information even if the impact is lower than the above limit
- Discussion Points
  - How do index level restatements impact your investment processes?
    - What are the impacts in terms of data redistribution / loading ?
  - Is this historical correction threshold of 50 bps appropriate?
    - Is there a distinction to be made between self-correcting (for example, wrong price) and non self-correcting (for example, wrong dividend) errors?

Correction Threshold (bp)	1	5	10	25	50**
Number of potential historical corrections per year*	27.4	22.7	22.4	20.6	19.8

* Statistics based on ACWI country standard indices for May 2007 - Mar 2011

** Annualized number of actual corrections for the May 2007 - Mar 2011

MSCI Index Review Correction Policy

- Index changes due to index reviews are typically announced two weeks prior to the implementation date
- When a discrepancy is discovered after the index review announcement date, the index composition is typically adjusted before the implementation date of the index review.
  - While in some cases (for example, insufficient trading liquidity for additions) it is the only possible solution, in others (for example, late identification of an addition or a relatively small change in the security index market capitalization), implementation could be potentially deferred to the next index review
- Discussion Points
  - Should MSCI postpone index review corrections to the following index review whenever possible?
  - Should there be a cutoff date (e.g., 5 days prior to rebalancing) after which index review corrections that can be postponed will not be implemented?
    - For instance, the addition of Magnit GDR in the MSCI Russia Index at the time of the May 2010 SAIR was announced 3 days prior to the implementation. Should such an addition be postponed to the next index review?

Treatment of Corporate Events Between an Index Review Announcement and the Implementation Date

- If there are significant and highly probable corporate events affecting a security after the announcement date, decisions that were announced may be reversed
  - For example, if a new company that is planned to be added to the index on the 1st of June is affected by a corporate event that would prompt its deletion on the 3rd of June, the decision on addition may be reversed
  - Some recent examples include: reversal of May 2011 SAIR additions of Equinox in Canada, Wood Group in the UK, Danisco in Denmark
- Discussion Points
  - Is this treatment appropriate for your investment process?
  - In your view, how should MSCI deal with corporate events that occur between an index review announcement and the implementation date?
  - Should there be a cutoff date (e.g., 5 days prior to rebalancing) after which index review corrections that can be postponed will not be implemented?

- Index Efficiency

Fair Value Pricing

- MSCI calculates its equity indices using closing prices
  - When the MSCI ACWI Index is computed (after the close of American exchanges), some of the prices used in the calculation (e.g., for markets in Asia) may be late by many hours
    - The fair value of these assets is likely different at that time
- Under the Investment Company act of 1940, funds and their directors have a regulatory obligation to make a good faith determination of the fair value of the funds' portfolio securities when market quotations are not readily available
  - Open-end mutual funds tend to use fair value rather than closing prices to calculate their NAV and reduce the opportunities for arbitrage
- Discussion Points
  - How does the fair valuation pricing affect your investment process?
  - Do you see a need for fair value indices provided by MSCI?

Potential Gaming Mitigation Measures

- The MSCI GIMI are currently reviewed on a quarterly basis with changes announced approximately 2 weeks before implementation and based on a pricing date approximately 7 weeks before implementation
- Passive indexers typically apply these changes very close to the implementation date to minimize tracking error
- Short term speculators may potentially game this process by buying additions to the index and selling deletions prior to implementation
- This effect reverses shortly after the implementation date
  - Conceptually, this potentially results in subtracting some performance from the indices (that buy high and sell low)
- Discussion Points
  - Is this index gaming effect a concern in your investment process or for your clients?
  - Possible ways to mitigate this effect include
    - Reflecting changes in the equity universe (e.g., smaller IPOs) on an ongoing basis
      - In that case, only migrations due to performance would be implemented during scheduled index reviews
    - Spreading changes due to index reviews over several days/weeks (e.g., implementation of 1/10th of weight changes per day)
    - Lengthening the period between announcement and implementation dates
    - Randomizing index review dates
    - Providing an option to customize the index review / implementation dates
  - In your view, should MSCI Indices be reviewed to minimize short term trading and if so, how?

Index Review Frequency

- MSCI Global Market Investable Indices (GIMI) are reviewed on a quarterly schedule
  - During the May and November semi-annual index reviews, the complete equity universe (eligible stocks, number of shares, free float) is reviewed and size classifications are reassessed
  - During the February and August quarterly index reviews, only the impact of significant market events (large IPOs and big changes in free float and number of shares) are reflected in the indices
- Discussion Points
  - Is this index review frequency appropriate?
  - A relatively small number of changes are happening to the indices during the February and August index reviews (approximately 10-20 index segment changes vs 100-150 for the May and November index reviews)
    - In your opinion, should MSCI fully reassess the investable universe and the size classification during February and August index reviews (i.e., make them the same as the current May and November reviews) ?
    - If not, would it be preferable to only keep the May and November index reviews and rebalance the MSCI GIMI Indices on a semi-annual basis?

- Index Representativeness

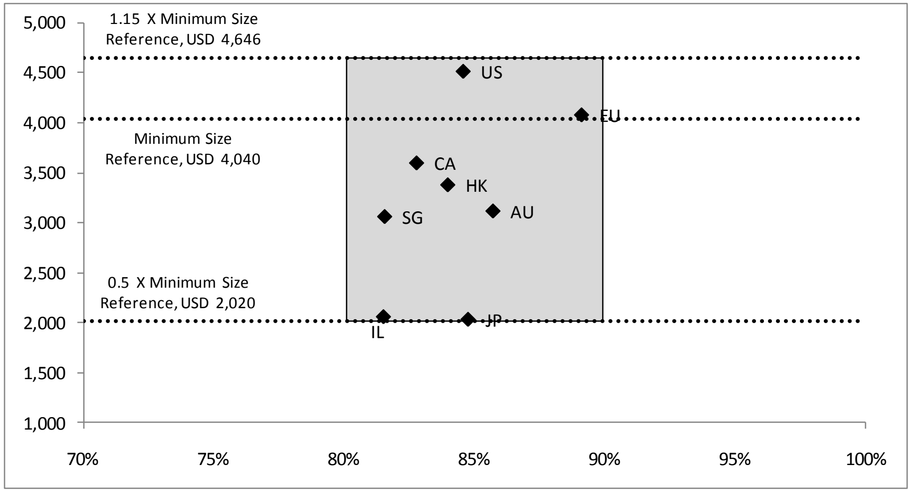
Definition of the Size Integrity in DM and EM (1/2)

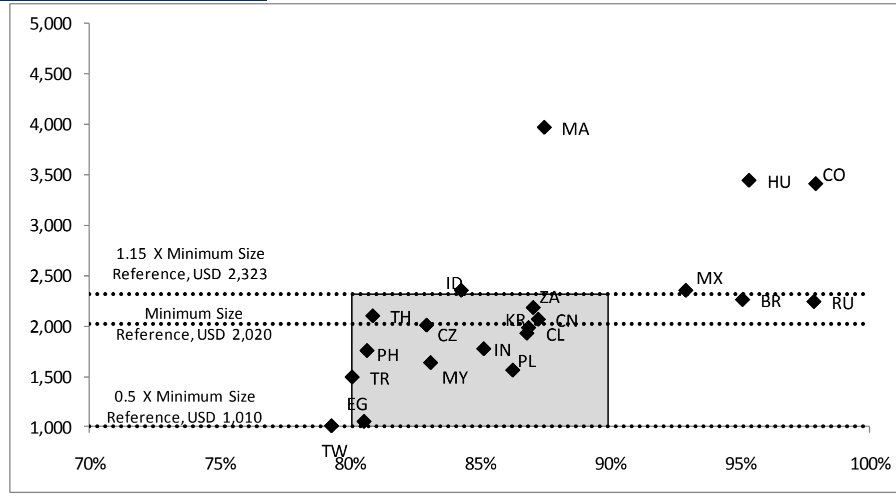
- The MSCI Standard Indices balance size integrity (USD 4 billion*) and market coverage objectives (85%)
  - In case of a conflict, size integrity takes priority over market coverage
- The size range for EM countries is currently set to be half of the DM one
  - Some larger EM countries (for ex., Mexico, Brazil, Russia) are currently over-represented as a result of this rule
- Discussion points
  - How is size integrity defined in your investment process?
    - Is a different definition of size integrity used for DM and EM ?
    - How is size integrity balanced with market coverage objectives?
      - Is the 80-90% market coverage target still appropriate for the Standard Indices?
    - How is size integrity defined for FM (Frontier Markets) ?
  - Should MSCI switch to a common definition of size integrity for both EM and DM in the construction of the MSCI GIMI Indices?

* Data for DM as of the May 2011 Index Review

Definition of the Size Integrity in DM and EM (2/2)

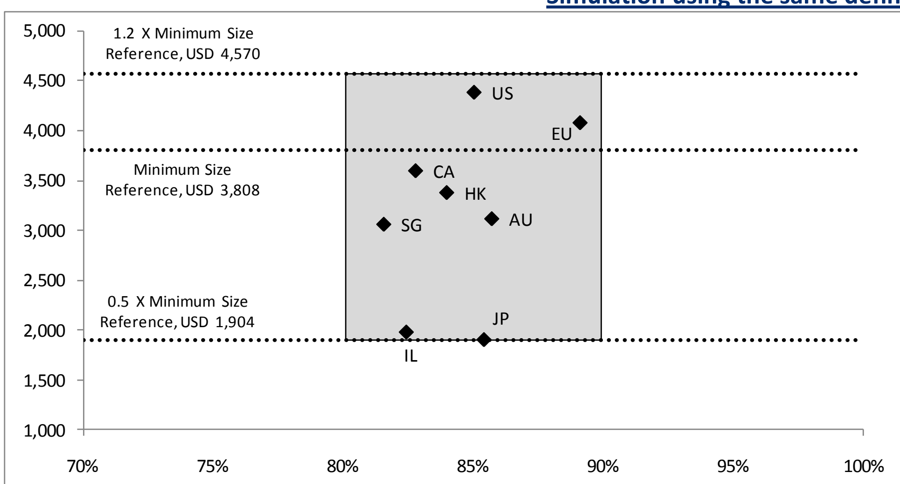
Current definition of size integrity for DM and EM

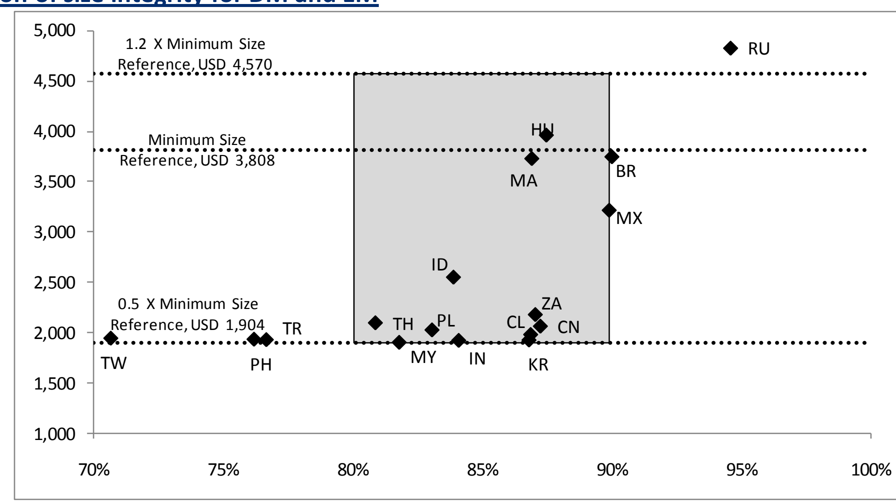




Data as of the May 2011 Quarterly Index Review

Simulation using the same definition of size integrity for DM and EM





Simulation based on data as of the May 2011 Quarterly Index Review

Country Classification of Securities

- The country classification of a security is generally determined by the country of incorporation of the issuing company and the primary listing of the security. This approach determines the country classification of approximately 94% of securities in the MSCI Equity Universe
  - When a company is incorporated in one country while its securities have a primary listing in a different country, additional factors such as the geographical distribution of its shareholder base and operations (assets and production) are considered
- This approach has limitations
  - For example, some mining companies incorporated and listed in Canada or UK may point to other countries with respect to their assets and revenue distribution, e.g., Pacific Rubiales Energy, Kazakhmys, Randgold Resources
  - In cases where the countries of incorporation and primary listing do not match and the geographical economic exposure points to a third country, the company can become ineligible for any of MSCI Indices (e.g., Vimpelcom, X5, Rusal, Prada, Samsonite)
- Discussion points
  - What are your views on how country classification of securities should be done?
  - How important are time zone considerations when constructing country indices (e.g., would it be theoretically conceivable to mix stocks traded in the US and Hong Kong in the MSCI China Index) ?
  - Should MSCI consider the geographical economic exposure of a company as the main factor for country classification, replacing current rules?
    - If not, should it be used as one of the factors determining the country classification?
    - If not, is there value in providing a secondary classification according to geographical economic exposure in addition to the primary country classification that could be used in the construction of potential new economic exposure indices?

Voting Rights in Index Construction

- MSCI currently does not use any corporate governance criteria for the construction of the MSCI GIMI
- In some instances, it can result in inclusion of stocks of questionable value from a corporate governance standpoint
  - For example, the CEO of one of the constituents of the MSCI Russia Index publicly stated that his company "will not become a cash cow for the owners of preferred shares" and that the company's minority shareholders try "to sweep the crumbs from [the company]'s table onto their own plate" [source: the company's website]
- Discussion points
  - Should MSCI consider corporate governance as one of ground rules in index construction?
  - If yes, what corporate governance eligibility rules would be desirable?
    - One possible rule would be to reduce the weight of securities according to their voting rights
      - For example:
        - a share of VOLVO B has 10 times less voting power than VOLVO A
        - BMW VORZUG has no voting power compared to BMW STAMM
        - PORSCHE listed shares do not have any voting power.

        All these stocks are currently eligible for inclusion in the MSCI indices

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