

Consultation on Enhancements to the Extreme Price Increase Methodology

MSCI GLOBAL INVESTABLE MARKET INDEXES

This consultation may or may not lead to the implementation of any or all of the proposed changes in MSCI's indexes. Consultation feedback will remain confidential unless a participant requests that its feedback be disclosed. In that case, the relevant feedback would be published at the same time as the final results of the consultation.

March 2024

Executive Summary

- In the May 2021 Index Review, MSCI started applying a screen on the MSCI Standard Index additions that exhibited extreme price increase to allow for potential stabilization of price discovery and to reduce the scope for potential reverse turnover.
- As part of the August 2023 Index Review, MSCI exceptionally did not include Mog Digitech Holdings following an extreme price increase over six months preceding the August 2023 Index Review and resulting client feedback.
- After further analysis, MSCI launches a consultation to enhance the treatment of securities that exhibit extreme price increase. Specifically, MSCI proposes to:
 - Extend the measurement period of extreme price increase from the current 5-day to 60-day by incorporating 90-day, 120-day, 150-day, 180-day and 250-day windows and apply the relevant returns-based thresholds.
- Should this consultation lead to the implementation of any or all of the proposed changes, MSCI aims to implement the enhanced treatment starting from the May 2024 Index Review.
- MSCI welcomes feedback from the investment community until March 29, 2024. MSCI will announce the results of this consultation on or before April 15, 2024.

Background

- At the November 2020 Index Review, following feedback from market participants, MSCI exceptionally did not add Artgo Holdings to the MSCI Indexes due to its extreme price increase, despite meeting the index inclusion requirements. Subsequently, in February 2021, MSCI consulted on the application of a screen on potential index additions with extreme price increase. The screen was implemented as part of the May 2021 Index review.
- As per the current methodology, MSCI applies the screen on extreme price increase for potential additions to the MSCI Standard Indexes, including migrations from the Small Cap Size-Segment. Securities with excess returns breaching any of the thresholds from the 5-day to 60-day, in increments of 5 days, as of the price cutoff date of the Index Review, will not be eligible for addition into the Standard Indexes and would be re-evaluated for Standard Index Inclusion at the subsequent Index Review (see the full methodology in the Appendix).
- As part of the August 2023 Index Review, Mog Digitech Holdings met the index inclusion requirements as per the current methodology. However, following analysis of its significant increase in price over the six months preceding that Index Review, complemented with unsolicited client feedback, MSCI decided to exceptionally not add Mog Digitech as part of the August 2023 Index Review and reassess the criteria set forth under the extreme price increase methodology to better identify similar use cases.
- MSCI also re-evaluated the feasibility of extending the treatment of extreme price increase for Small Cap additions, with a different set of thresholds.

Details of the Proposal

- In order to better capture securities that may experience significant price volatility following a price increase over a longer timeframe, MSCI proposes to extend the current excess return measurement period by including 90-day, 120-day, 150-day, 180-day and 250-day windows and applying the following thresholds:

	Current measurement period												Proposed incremental measurement period				
Period	5D	10D	15D	20D	25D	30D	35D	40D	45D	50D	55D	60D	90D	120D	150D	180D	250D
Excess Return Thresholds (%)	100	100	100	100	200	200	200	200	400	400	400	400	500	800	1500	1500	2500

- MSCI will continue not to apply the treatment of extreme price increase on Small Cap additions.

Note: The proposed extreme price increase thresholds are derived based on the 99.9th percentile of excess returns of the historical additions to the MSCI Standard Indexes over approximately 12 years*, similar to the thresholds under the current measurement period (see the details in the Appendix). MSCI defines extreme price increase as the excess returns over the IMI country sector mean** on the price cutoff date of a given index review breaching any of the thresholds in the measurement periods.

Rationale for Extending the Current Measurement Period

- The objective of the extreme price increase screen is to maintain the rule-based methodology, while striking the right balance between the postponement of inclusion of securities exhibiting exceptionally high price increase and continuing to reflect changes to the Indexes in a timely fashion.
- The proposed extended measurement period and the corresponding thresholds would improve the effectiveness of identifying the securities experiencing extreme price increase by evaluating the performance over a longer timeframe
 - While the extended period would better capture securities with extreme price increase, it will achieve this without material impact on the timely reflection of index changes.
- An alternative scenario with lower return thresholds was also evaluated. However, it would have resulted in an unnecessarily high number of postponed additions.

Summary of Historical Impact

	Standard Additions		
Historical Sample Size*	3055		
Scenario	Current	Proposed	Alternative
Number of Impacted Securities	12	16	120
- Number of impacted Securities with price volatility following the index review	4	5	11

Details of each scenario:

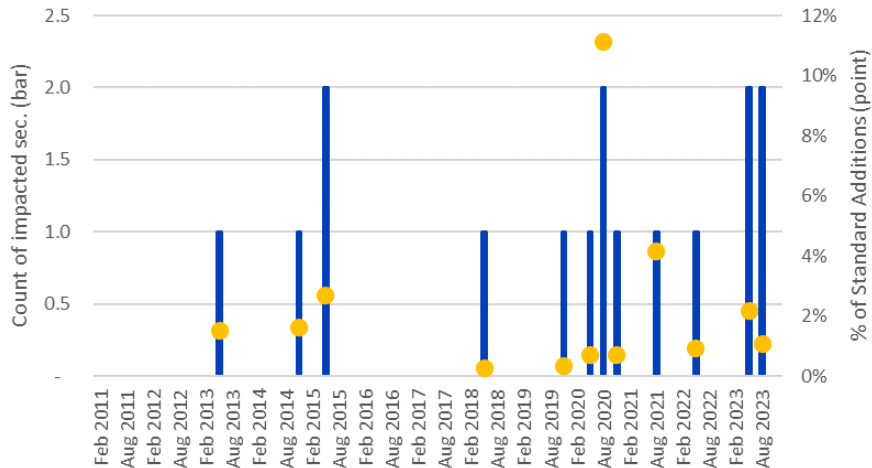
- *Current methodology* applies thresholds based on the 99.9th percentile of historical excess returns over the 5D-60D period
- *Proposed methodology* applies thresholds based on the 99.9th percentile of historical excess returns over the 5D-250D period
- *Alternative methodology* applies thresholds based on the 99th percentile of historical excess returns over the 5D-250D period (See details on the 99.9th and 99th percentile thresholds in the Appendix)

Price volatility means a security experienced any of the below, following the index review:

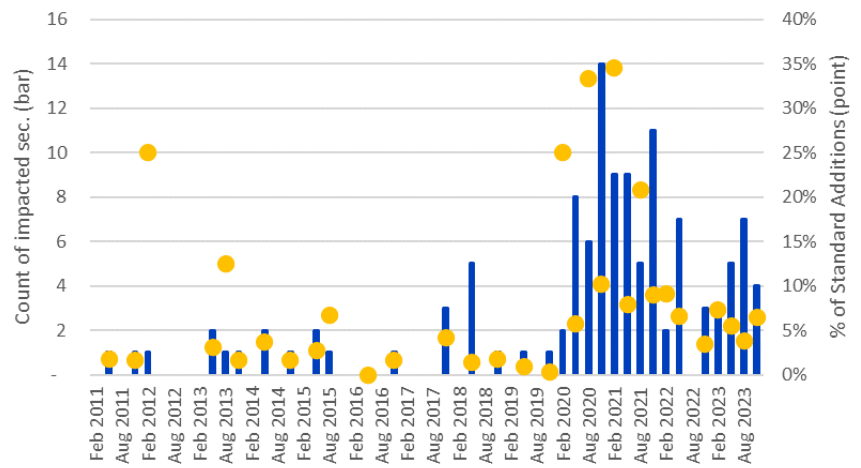
- Effective Day return is less than -20%
- 3 month Return after implementation date of the index review is less than -50%
- Deleted from Standard Index at the following index review

Historical Impact per Rebalance

Impact under Proposed Methodology



Impact under Alternative Methodology



- Lower return thresholds under the alternative methodology would have resulted in many non-inclusions in more recent period and particularly during 2020 and 2021.

Historical Impact based on Current Methodology

- From the February 2011 Index Review to the November 2023 Index Review, twelve securities met the currently applied extreme price increase thresholds (four of these securities were not added in the indexes post the May 2021 implementation of these rules).

	Security Name	Impacted Index Review	Country	Sector	Company Full Mcap (USD million)	Company FIF Mcap* (USD million)	Eligibility in following Index Review
Simulated Impact before implementation	GOLDIN PROPERTIES HLDGS	May 2015	CN	Financials	6,896	2,758	No
	HANMI PHARM CO (NEW)	May 2015	KR	Health Care	3,370	1,685	Yes
	CHINA FIRST CAPITAL GRP	May 2018	CN	Consumer Discretionary	4,087	2,657	Yes
	ARTGO HOLDINGS	Nov 2019	CN	Industrials	2,323	1,975	No
	AFTERPAY	May 2020	AU	Information Technology	4,590	3,672	Yes
	SHIN POONG PHARMA CO	Aug 2020	KR	Health Care	5,828	2,999	Yes
	SUPERMAX CORP	Aug 2020	MY	Health Care	5,540	3,047	Yes
	HEBEI CONSTRUCTION GRP H	Nov 2020	CN	Industrials	5,625	1,473	No
Actual Impact post implementation	CHINA RESOURCES A (HK-C)	May 2022	CN	Health Care	4,156	1,239	Yes
	ECOPRO CO	May 2023	KR	Materials	12,836	9,655	Yes
	EOPTOLINK TECH A (HK-C)	May 2023	CN	Information Technology	5,894	1,767	Yes
	KUMYANG	Aug 2023	KR	Materials	5,121	2,817	Yes

Simulated Additional Impact Based on the Proposal

- The table below includes the simulated list of additional securities that would have met the proposed extreme price increase thresholds of the extended measurement period at the relevant index reviews.

Impacted securities	Impacted Index Review	Country	Sector	Company Full Mcap (USD million)	Company FIF Mcap* (USD million)	Eligibility in following Index Review
GUNGHO ONLINE ENT	May 2013	JP	Information Technology	6,149	1,845	Yes
MIXI	Nov 2014	JP	Information Technology	4,756	2,140	Yes
AMC ENTERTAINMENT HLDG A	Aug 2021	US	Communication Services	21,622	21,622	Yes
MOG DIGITECH HOLDINGS	Aug 2023	CN	Consumer Discretionary	8,027	1,605	No

- Mog Digitech Holdings* would not have been added in the subsequent index review due to decrease in price.

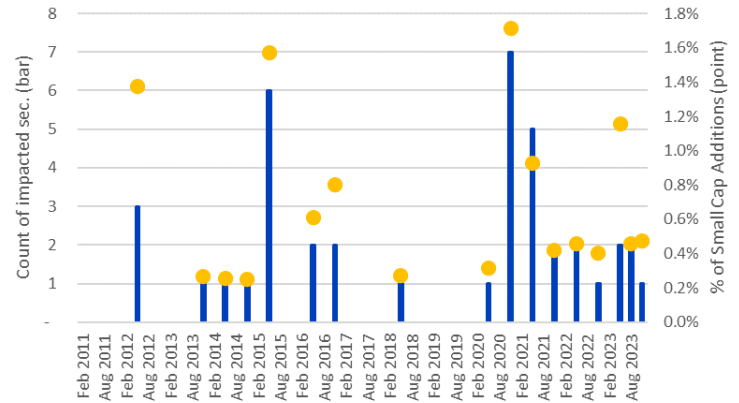
Rationale for Not Applying the Screen on a Broader Universe

- MSCI will continue not to apply the extreme price increase screen on the additions to the MSCI Small Cap Indexes.
 - Small cap securities are often characterized by higher returns volatility
 - Applying the screen could lead to a large number of postponed additions.
 - Based on historical analysis, Small Cap additions meeting the thresholds do not often experience significant drawdown or reverse turnover after the index inclusion.

Summary of Historical Impact

	Small Cap Additions
Historical Sample Size*	9345
Number of Impacted Securities**	40
- Number of impacted Securities with price volatility following the index review	5

Impact per Rebalancing



Discussion Points

- Do you agree with the proposal to apply a longer timeframe of evaluating extreme price increase for the MSCI Standard Index inclusions?
- Do you agree with the proposed measurement window of 90-day, 120-day, 150-day, 180-day and 250-day or should MSCI consider tighter windows (for example, in incremental of 10 days starting from 60-day to 250-day)?
- Do you agree with not applying the excess return screen on Small Cap additions?
- Do you think a longer waiting period is required to re-evaluate the securities that meet the extreme price increase thresholds before re-considering them for inclusion?
- Are the proposed excess return thresholds sufficient or should other measures be considered such as fundamental ratios or additional country specific sources for estimating free float to better assess shareholding concentration?

Appendix



Defining the Return Thresholds for Standard Additions

- MSCI evaluated historical index review Standard additions* since 2011** and set the proposed thresholds based on the 99.9th percentile of excess returns.
- MSCI also tested alternative thresholds which were defined based on 99th percentile of historical excess returns of index review additions.
- The table to the right illustrates the Excess Returns of historical index review Standard additions at the 99.9th and 99th percentile respectively, as well as the thresholds which were set based on the historical excess returns.

Period (business days)	Proposed		Alternative	
	Excess Returns (%) of Standard Adds* @ 99.9th	Excess Return (%) Threshold @ 99.9th	Excess Returns (%) of Standard Adds* @ 99th	Excess Return (%) Threshold @ 99th
5D	48	100	21	50
10D	75	100	36	50
15D	101	100	45	50
20D	112	100	55	50
25D	128	200	67	50
30D	156	200	81	100
35D	167	200	92	100
40D	189	200	107	100
45D	225	400	112	100
50D	275	400	120	100
55D	360	400	134	100
60D	384	400	136	100
90D	518	500	221	300
120D	728	800	314	300
150D	1440	1500	396	500
180D	1447	1500	480	500
250D	2388	2500	685	700

Defining the Return Thresholds for Small Cap Additions

- MSCI evaluated historical index review Small Cap additions since 2011* and set the thresholds based on the 99.9th percentile of excess returns.
- The table to the right illustrates the Excess Returns of historical index review Small Cap additions at the 99.9th percentile.

Period (business days)	Excess Returns (% of Small Cap Adds* @ 99.9th)	Excess Return (%) Threshold @ 99.9th
5D	65	100
10D	101	100
15D	126	200
20D	160	200
25D	197	200
30D	245	300
35D	294	300
40D	320	400
45D	373	400
50D	375	400
55D	412	500
60D	439	500
90D	714	800
120D	1,239	1200
150D	1,789	1800
180D	1,874	2000
250D	4,545	4500

Additional Simulation for Standard Additions with Tighter Windows

- MSCI evaluated the impact of applying tighter windows by extending the timeframe in 10-day increments starting from the 60-day to 250-day.
- The table to the right illustrates the Excess Returns of historical index review Standard additions at the 99.9th percentile, as well as the thresholds which were set based on the historical excess returns.

Period (business days)	Excess Returns (%) of Standard Adds* @ 99.9th	Excess Return (%) Threshold @ 99.9th
5D	48	100
10D	75	100
15D	101	100
20D	112	100
25D	128	200
30D	156	200
35D	167	200
40D	189	200
45D	225	400
50D	275	400
55D	360	400
60D	384	400
70D	495	500
80D	446	500
90D	518	500
100D	695	500
110D	696	800
120D	728	800
130D	789	800
140D	969	800
150D	1,440	1,500
160D	1,086	1,500
170D	1,279	1,500
180D	1,447	1,500
190D	1,539	1,500
200D	1,456	1,500
210D	1,451	1,500
220D	1,598	1,500
230D	1,508	1,500
240D	1,910	1,500
250D	2,388	2,500

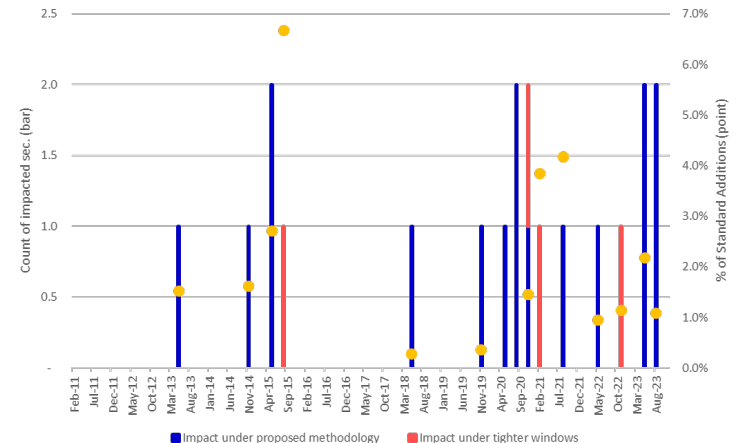
Simulated Impact Using Tighter Windows for Standard Additions

- Tighter windows in incremental of 10 days starting from 60-day to 250-day could potentially reduce the risk of missing stocks with extreme price increase between the large gap in the extended observation period of the main proposal.
- Based on the simulation of tighter windows
 - 4 incremental securities met the thresholds, none of them experienced price volatility following the index review
 - 6 securities met the thresholds in consecutive index reviews

Summary of Historical Impact

	Standard Additions
Historical Sample Size*	3055
Number of Impacted Securities**	20
- Number of impacted Securities with price volatility following the index review	5

Impact per Rebalancing



Current Methodology

Section 2.3.6.3 of the MSCI Global Investable Market Indexes Methodology: Treatment of Securities that Exhibit Extreme Price Increase

Securities that exhibit extreme price increase will not be eligible for addition into the Standard Indexes but will continue to be considered as part of the market investable universe. Such securities would be re-evaluated for Standard Index inclusion in the subsequent Index Review using Standard Index inclusion criteria, including the return-based thresholds for extreme price increase.

MSCI will evaluate the 5-day to 60-day excess returns, in increments of 5 days, as of the price cutoff date of the Index Review, for additions to the Standard indexes. As shown in the table below, securities with excess returns above 100% for any of its 5-day to 20-day excess returns, or above 200% for any of its 25-day to 40-day excess returns or 400% for any of its 45-day to 60-day excess returns are considered to exhibit extreme price increase.

Thresholds for Extreme Price Increase

Period*	5D	10D	15D	20D	25D	30D	35D	40D	45D	50D	55D	60D
Excess Returns Threshold	100%	100%	100%	100%	200%	200%	200%	200%	400%	400%	400%	400%
* Number of days (Mon-Fri) prior to the price cutoff date of the Index Review												

Excess return is calculated as the difference between the return of a security for the relevant period and the average return of IMI constituents belonging to the same country-sector where the security is classified (in terms of country of classification and GICS classification at the sector level). For country-sectors that have five or less IMI constituents, the relevant country IMI return is used instead.

IPOs that do not meet the minimum length of trading requirements, but meet all other criteria for Standard Index inclusion are not subject to this requirement.

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