

# Consultation on Potential Enhancement to the Methodology of the MSCI ACWI IMI Virology Index

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## PROPOSAL FOR CONSULTATION

This consultation may or may not lead to the implementation of any or all of the proposed changes in the highlighted or any other MSCI indexes. Consultation feedback will remain confidential. MSCI may publicly disclose feedback if specifically requested by specific market participants. In that case, the relevant feedback would be published together with the final result of the consultation.

July 2024

# Timeline

MSCI presents a consultation on a potential enhancement to the MSCI ACWI IMI Virology Index methodology.

**MSCI invites feedback from market participants by September 15, 2024 and will announce the consultation results and implementation timeline (if any) on or before October 15, 2024.**

# Executive Summary

1. In March 2022, MSCI launched the first index in the MSCI Life Sciences & Biotech Index suite – the MSCI ACWI IMI Virology Index (the ‘Index’)<sup>1</sup>, using the Evaluate Pharma (EP)<sup>2</sup> data. This was developed in collaboration with Royalty Pharma<sup>3</sup>.
2. The MSCI ACWI IMI Virology Index (the ‘Index’) aims to represent the performance of a set of companies that are associated with research and development into, as well as the commercialization of anti-viral and vaccine products, which are used to treat a range of infectious diseases, either through their reported/projected worldwide sales or through their commercial clinical trials.
  - Projected sales figures are estimated by EP analysts.
  - Historical reported sales figures for products are provided by EP using company annual reports or broker reports
  - EP does not report historical sales for companies for which broker reports are not available. This means that some eligible companies could be missed by the Index because of lack of historical sales data from EP.
3. In addition, there has been a decline in the number of constituents (NOC) of the Parent index since 2021. This has been one of the drivers of the decline in number of constituents in the Index.
4. To mitigate further declines in the NOC of the Index due to missing data, **we propose to enhance the methodology by using MSCI sales data as a fallback when the company’s historical sales are not reported by EP.**
5. This fallback mechanism is already present in the MSCI ACWI IMI Immuno-oncology Index methodology.

1. More details about ACWI IMI Virology Index : <https://www.msci.com/index/methodology/latest/ACWIIMIIVirology>

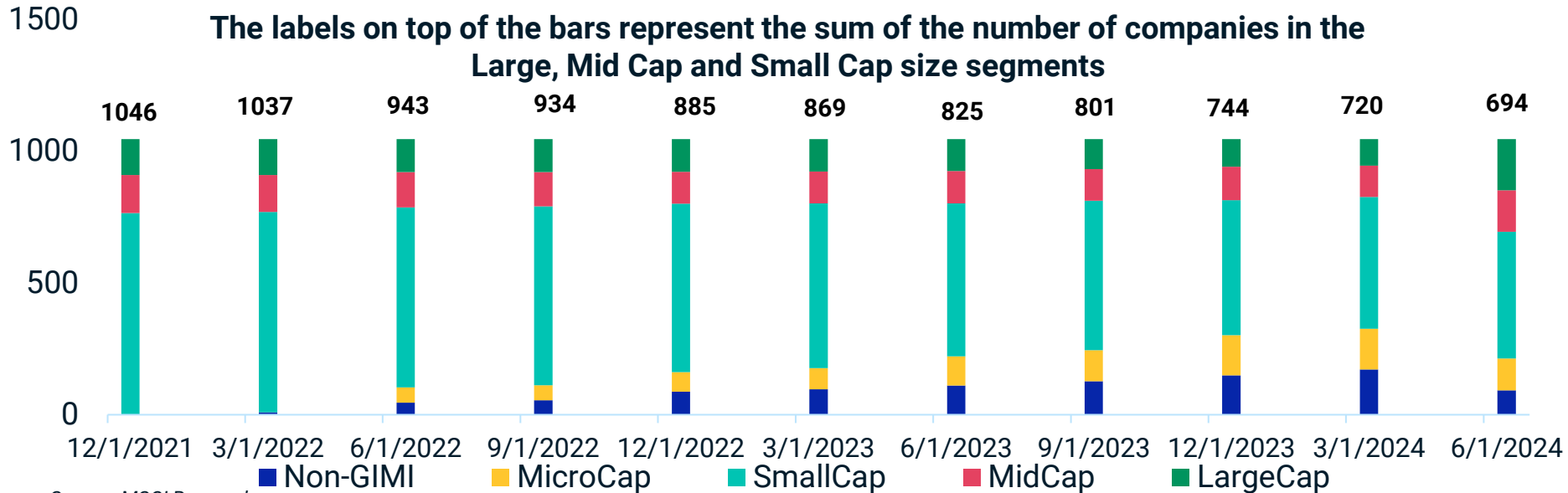
2. More details on Evaluate Pharma : <https://www.evaluate.com/>

3. More details on Royalty Pharma : <https://www.royaltypharma.com/>

# The declining number of constituents of the MSCI ACWI IMI Healthcare Index

The following chart traces the **evolution of the NOC of the MSCI ACWI IMI Healthcare Index from- 01 Dec'21 over time** :

It shows a gradual increase in stocks being re-classified to Micro caps or out of the GIMI families\*. Consequently, we can see that there is a decline in NOC of the MSCI ACWI IMI Healthcare index over time.



Source: MSCI Research

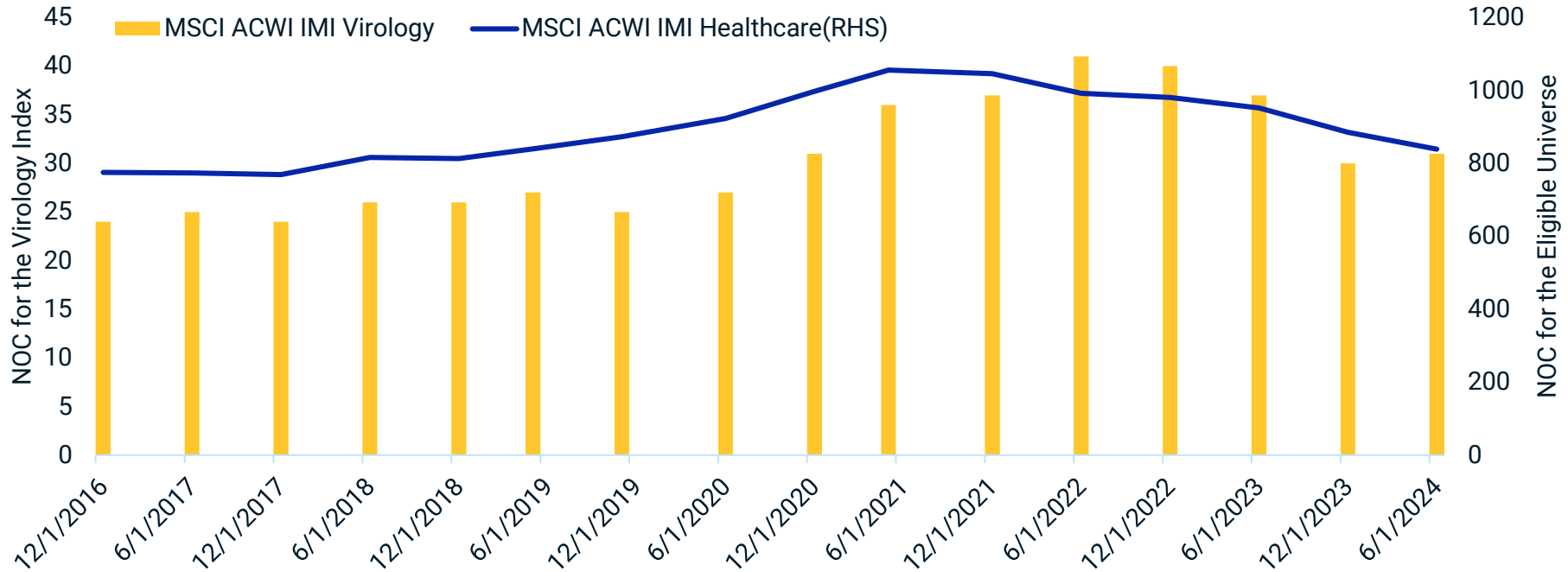


\*More details on market consolidation in Healthcare Sector: [https://www.ev.com/en\\_us/life-sciences/beyond-borders](https://www.ev.com/en_us/life-sciences/beyond-borders)

Information Classification: GENERAL

# The MSCI ACWI IMI Virology index has seen a decrease in number of constituents since June 2022

The Eligible Universe : MSCI ACWI IMI Healthcare index



Source: MSCI Research



# Example to illustrate the fallback mechanism

To be eligible for selection in the Index, the security must have **non-zero revenue at the company level** and must satisfy at least one of the below conditions:

1. Clinical Trials Exposure to a therapeutic subcategory  $\geq 25\%$ , OR
2. Proportion of revenue from a therapeutic subcategory  $\geq 25\%$ , OR
3. Market share of participants in clinical trials for a therapeutic subcategory  $\geq 1\%$ , OR
4. Market share of revenue from a therapeutic subcategory  $\geq 1\%$

For more details of the live methodology, please refer to the Appendix

Example: Although Abivax is a pure-play company, it is neither selected in the proposed nor in the live index because of missing EP sales or missing MSCI sales data. However, Kalbe Farma would be selected in the Proposed index using the MSCI fundamental sales data fallback because it satisfies the pre-requisite and the clinical trials exposure condition.

Methodology Step	ABIVAX SA	KALBE FARMA TBK PT
Clinical Trials Exposure of Anti-Virals	66.7%	33.3%
Proportion of Revenue from Anti-Virals	0	0
Has EP reported Total Company Sales ?	No	No
Does MSCI Fundamental Data have Total Company Sales ?	No	Yes
Selected in Live MSCI ACWI IMI Virology Index ?	No	No
Selected in ACWI IMI Virology Proposed Enhancement ?	No	Yes



Source: MSCI Research, Evaluate Pharma

\*Constituents as of 1<sup>st</sup> June 2023 and Scores as of April end

Information Classification: GENERAL

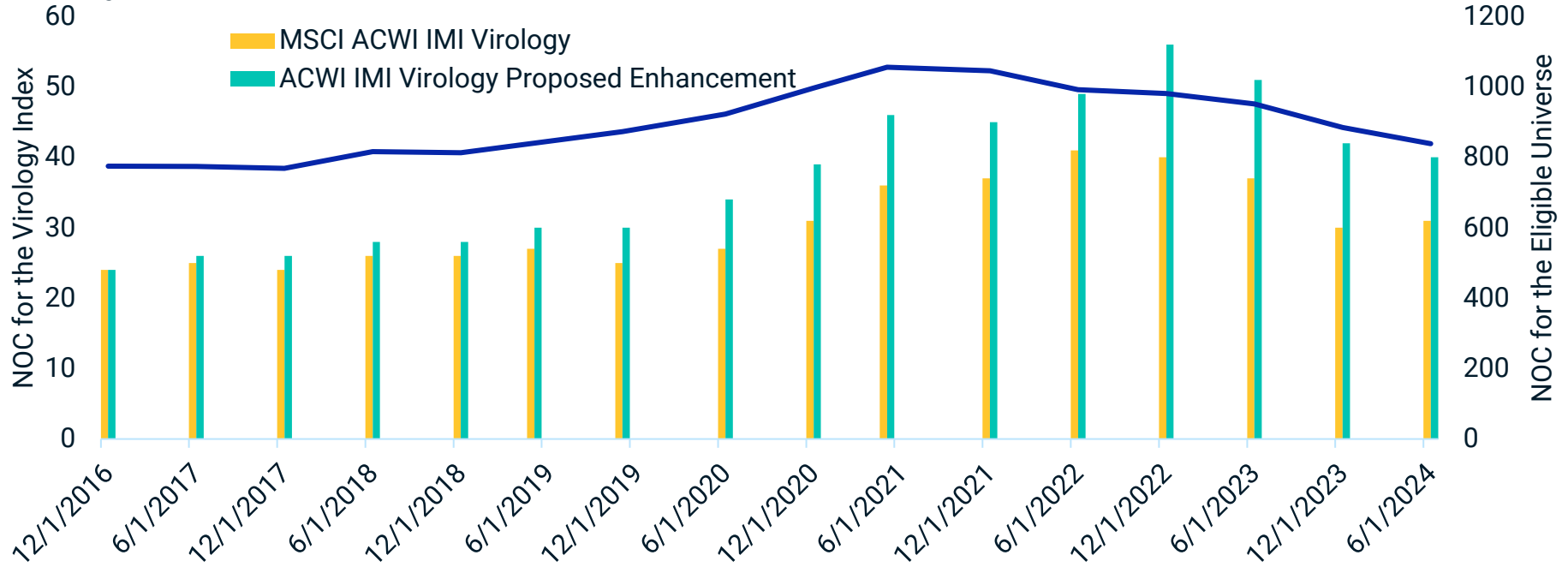
# Impact of Proposed Enhancement

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MSCI ACWI IMI VIROLOGY INDEX

# The proposed enhancement would have led to a higher NOC historically in the MSCI ACWI IMI Virology Index

The Eligible Universe : MSCI ACWI IMI Healthcare



Source: MSCI Research





# Key Metrics

## Key Metrics

	MSCI ACWI IMI Health Care	MSCI ACWI IMI Virology	ACWI IMI Virology Proposed Enhancement
Total Return* (%)	10.8	9.6	9.5
Total Risk (%)	13.8	19.3	18.8
Return / Risk	0.78	0.50	0.50
Sharpe Ratio	0.64	0.39	0.40
Active Return (%)	0.0	-1.2	-1.3
Tracking Error (%)	0.0	11.7	11.1
Information Ratio		-0.10	-0.12
Historical Beta	1.00	1.12	1.10
Number of Constituents***	893	30	37
Current Number of Constituents	842	31	40
Turnover** (%)	1.9	27.1	27.7
Price to Book***	4.0	3.8	3.8
Price to Earnings***	27.9	60.1	51.3
Dividend Yield*** (%)	1.7	2.1	2.1

Period: Nov 30, 2016 to Jun 26, 2024. \* Gross returns annualized in USD \*\* Annualized one-way index turnover over index reviews \*\*\* Monthly averages

## Performance (%)

	MSCI ACWI IMI Health Care	MSCI ACWI IMI Virology	ACWI IMI Virology Proposed Enhancement
YTD	7.2	8.9	7.6
1 Yr	11.5	6.9	6.2
3 Yr	2.4	-3.3	-3.7
5 Yr	9.5	8.1	8.0
10 Yr			

Gross returns for the period ending Jun 26, 2024. Returns are annualized for periods longer than a year

Source: MSCI Research



# For the May 2024 SAIR, the proposed enhancement would have led to a higher one-way index turnover vs. the live MSCI ACWI IMI Virology Index

One-way index turnover, May 2024 SAIR	Due to Additions	Due to Deletions	Due to Maintained securities	Turnover
Live Index*	2.16%	4.82%	7.92%	14.90%
Proposed Index**	5.89%	4.82%	7.06%	17.78%

\* Measured as the one-way index turnover of the current index as of May 31, 2024, and the current index as of Jun 3, 2024

\*\*Measured as the one-way index turnover of the current index as of May 31, 2024, and the proposed index as of Jun 3, 2024

Historical One-way Turnover Stats***	Mean	S.D.	Mean + S.D.	Mean – S.D.
Live Index	13.55%	4.44%	17.99%	9.1%

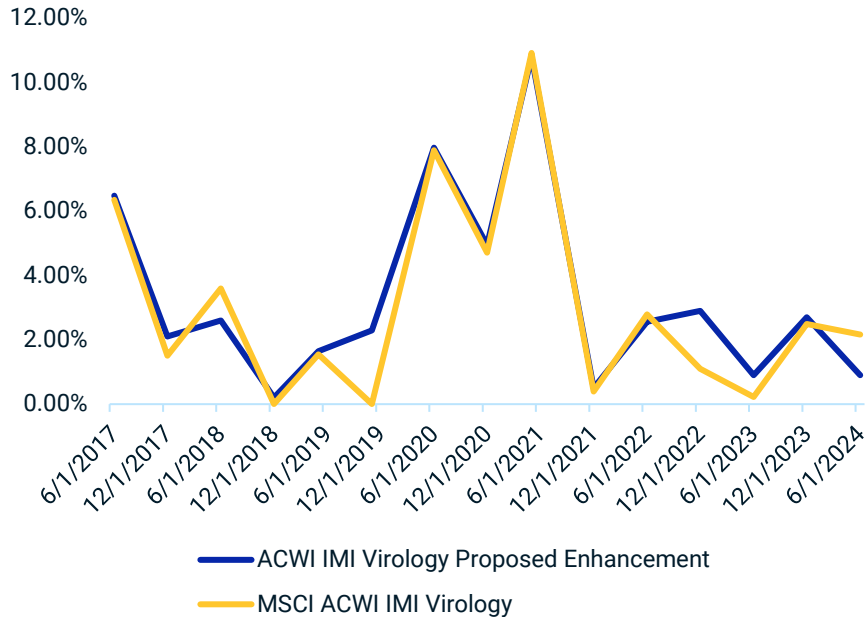
Source: MSCI Research

\*\*\*Date range : 30<sup>th</sup> Nov 2016 to 26<sup>th</sup> Jun 2024

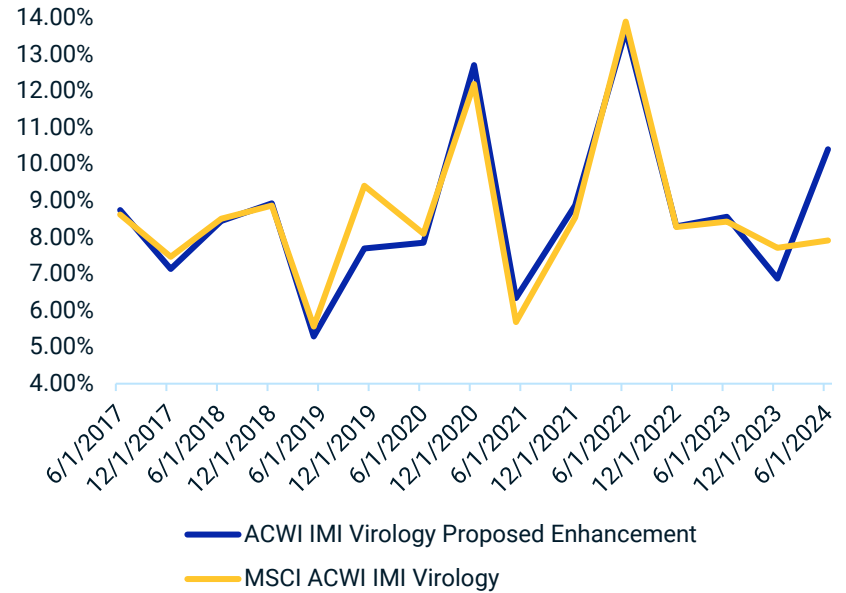


# Comparison of one-way index turnover due to additions and maintained securities

## Addition Turnover in historical rebalances



## Maintenance Turnover in historical rebalances



Source: MSCI Research



# Consultation question

- Do you agree that the methodology of the MSCI ACWI IMI Virology Index should be enhanced to use the proposed fallback mechanism?

# Appendix

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# Scoring Methodology for Category Indexes – As per the MSCI ACWI IMI Virology Index methodology

- Companies are engaged in both scientific and commercial activities -
  1. Scientific Focus – Measured through Trials and Enrollments
  2. Commercial Focus – Measured through current and projected revenue linked to products
- **Degree** of company's exposure to a category is measured in two ways –
  1. Category's share in Company's overall scientific and commercial activity – Pure play companies will have high exposure.
  2. Company's share in Category's overall scientific and commercial activity – A company may not be a pure play but can still own a large share of overall scientific and commercial activity (like a large diversified pharmaceutical company).

	Detail
<p><b>Company Relative Scores</b> – Measures company's exposure to a category ( Indication or Therapy ).</p> <p><i>Category's Relevance for Company</i></p>	<p>(1) <b>Trials Score</b> : For a given category, the count of trials sponsored by company as a % of company's total trials.</p> <p>(2) <b>Financial Relevance</b>: For a given category, the company's cumulative revenue between year – 1 and year + 5 ( where year is the year of rebalance date) from products linked to the category as a % of company's total cumulative projected revenue between year – 1 and year + 5.</p>
<p><b>Category Relative Scores</b> – Measures company's share of the category wide trials and revenue.</p> <p><i>Company's Relevance for the Category</i></p>	<p>(3) <b>Share of Enrollments</b> : For a given category, number of participants enrolled in trials sponsored by the company as a % of all participants enrolled in all trials sponsored by all companies*.</p> <p>(4) <b>Share of Revenue</b>: For a given category, company's cumulative revenue (as defined for score 2) as a % of the total cumulative revenue of all companies*.</p>

# Methodology

Index Name	MSCI ACWI IMI Virology Index (Live)		ACWI IMI Virology Proposed Enhancement Index (Proposed)	
Parent Index	<ul style="list-style-type: none"> <li>MSCI ACWI IMI</li> </ul>			
GICS Selection	<ul style="list-style-type: none"> <li>Sector - Health Care</li> </ul>			
Rebalance Frequency	<ul style="list-style-type: none"> <li>Semi- Annual</li> </ul>			
Therapy	<ul style="list-style-type: none"> <li>Trials and Products linked to <b>Anti-Virals</b> and <b>Vaccines</b> sub-therapy are in scope</li> </ul>			
Category Score	<b>Vaccines Portfolio :</b> (1) Category Score = Max(Category Trials Score, Category Financial Relevance)	<b>Anti-Virals Portfolio :</b> 1) Category Score = Max(Category Trials Score, Category Financial Relevance)	<b>Vaccines Portfolio :</b> 1) Category Score = Max(Category Trials Score, Category Financial Relevance)	<b>Anti-Virals Portfolio :</b> 1) Category Score = Max(Category Trials Score, Category Financial Relevance)
Category Score Adjustment	Category Score=0, if Financial Relevance=0	Category Score=0, if Financial Relevance=0	<ul style="list-style-type: none"> <li>Category Score = 0, if Company level Cumulative Revenue*=0 and Company's Latest Reported Revenue** = 0, or,</li> <li>Category Financial Relevance = 0 but Company-level Cumulative Revenue&gt;0</li> </ul>	<ul style="list-style-type: none"> <li>Category Score = 0, if Company level Cumulative Revenue*=0 and Company's Latest Reported Revenue = 0, or,</li> <li>Category Financial Relevance = 0 but Company-level Cumulative Revenue&gt;0</li> </ul>

\*Company-level Cumulative Revenue (using EP Data) – The sum of reported/forecasted product-level revenues aggregated across all products mapped to the company across -1Y to 6Y; where Y=Year of the Calculation Date.

\*\*Company's Latest Reported Revenue is derived from the MSCI Fundamental Sales Data



# Methodology contd..

Index Name	MSCI ACWI IMI Virology Index(Live Index)		ACWI IMI Virology Proposed Enhancement Index (Proposed)	
Portfolio	Vaccines	Anti-virals	Vaccines	Anti-virals
Eligibility	Category Score >= 25% or Max (Category Share of Revenue, Category Share of Enrollments ) >= 1%.	Category Score >= 25% or Max (Category Share of Revenue, Category Share of Enrollments ) >= 1%.	Category Score >= 25% or Max (Category Share of Revenue, Category Share of Enrollments ) >= 1%.	Category Score >= 25% or Max (Category Share of Revenue, Category Share of Enrollments ) >= 1%.
Weighting of sub- Therapy Portfolios	Create Vaccines Portfolio using Market Cap tilted weight using Vaccine Category Score	Create Anti-Virals Portfolio using Market Cap tilted weight using Anti-virals Category Score	Create Vaccines Portfolio using Market Cap tilted weight using Vaccine Category Score	Create Anti-Virals Portfolio using Market Cap tilted weight using Anti-virals Category Score
Weighting(Final Portfolio)	(1) Combine the weights of Vaccines and Anti-virals portfolio in 50/50 proportion (2) Maximum security weight is capped to 5%		(1) Combine the weights of Vaccines and Anti-virals portfolio in 50/50 proportion (2) Maximum security weight is capped to 5%	



# The following 13 companies would have been added by using the enhanced sales filter over the current methodology, in the Vaccines Portfolio at these respective rebalance dates

**Company vs addition by rebalance date due to MSCI fundamental sales in "Vaccines" portfolio**

Name of Adds in Different Effective Dates in Vaccines Portfolio	6/1/2018	5/29/2019	11/27/2019	6/1/2020	12/1/2020	5/28/2021	12/1/2021	6/1/2022	12/1/2022	6/1/2023	12/1/2023	6/3/2024	Count of rebals where company is added in Vaccines Portfolio
CHONGQING ZHIFEI A(HK-C)		1	1	1	1	1	1	1	1	1	1	1	11
SINOPHARM GROUP CO H			1	1	1	1	1	1	1	1	1	1	10
CHABIOTECH CO				1	1	1	1	1	1				6
CANSINO BIOLOGICS H						1	1	1			1	1	5
NYKODE THERAPEUTICS									1	1	1	1	4
CANSINO BIO A (HK-C)						1	1	1					3
SK BIOSCIENCE CO									1	1	1		3
EVEREST MEDICINES											1	1	2
ADIMMUNE									1	1			2
ILYANG PHARMACEUTICAL CO	1			1									2
GENEXINE CO LTD									1	1			2
GENEONELIFESCIENCE					1	1							2
VAXART					1	1							2
Count of Adds in Vaccines	1	1	2	4	5	7	5	5	7	6	6	5	

\*\*SinoPharm Group is the only company that has trials in both Vaccines and Anti-virals therapeutic subcategories.

# The following 16 companies would have been added by using the enhanced sales filter over the current methodology, in the Anti-virals Portfolio at these respective rebalance dates

Company vs addition by rebalance date due to MSCI fundamental sales in "Anti-virals" portfolio

Name of Adds in Different Effective Dates in Antivirals Portfolio	6/1/2017	12/1/2017	6/1/2018	12/3/2018	5/29/2019	11/27/2019	6/1/2020	12/1/2020	5/28/2021	12/1/2021	6/1/2022	12/1/2022	6/1/2023	12/1/2023	6/3/2024	Count of rebals where company is added in Anti-virals Portfolio
TAIGEN																14
BIOPHARMACEUTICAL	1	1	1	1	1	1	1	1	1	1	1	1	1	1		14
TAIMED BIOLOGICS						1	1	1	1	1	1	1	1	1	1	10
SIGA TECHNOLOGIES										1	1	1	1	1	1	6
ASCLETIS PHARMA INC				1	1	1	1									4
SINOPHARM GROUP CO H												1	1	1	1	4
YUNNAN BAIYAO A (HK-C)													1	1	1	3
SHANGHAI JUNSHI A (HK-C)												1	1	1		3
KALBE FARMA												1	1	1		3
BIOCON LTD												1	1			2
MOLECULAR PARTNERS								1	1							2
ADICET BIO												1				1
BRII BIOSCIENCES													1			1
KINTOR PHARMACEUTICAL												1				1
CELULARITY												1				1
ASSEMBLY BIOSCIENCES		1														1
WALVAX BIOTECH A (HK-C)															1	1
Count of Adds in Anti-virals	1	2	1	2	2	3	3	3	3	3	3	10	9	7	5	

# Country Breakdown of Adds in ACWI IMI Virology Proposed Enhancement in May'24 SAIR

9 additions :	CHINA (6 adds)	NORWAY(1 add)	TAIWAN(1 add)	USA (1 add)
SINOPHARM GROUP CO H	3.22%			
YUNNAN BAIYAO A (HK-C)	2.17%			
TAIMED BIOLOGICS			1.35%	
SIGA TECHNOLOGIES				0.88%
CHONGQING ZHIFEI A(HK-C)	0.26%			
EVEREST MEDICINES	0.25%			
NYKODE THERAPEUTICS		0.18%		
CANSINO BIOLOGICS H	0.15%			
WALVAX BIOTECH A (HK-C)	0.13%			
<b>Total</b>	<b>6.19%</b>	<b>0.18%</b>	<b>1.35%</b>	<b>0.88%</b>

Source: MSCI Research

# Appendix

## Risk and Return Metrics

	Definition
<b>Total Return (%)</b>	Annualized index return
<b>Total Risk (%)</b>	Annualized index risk (based on monthly returns)
<b>Return / Risk</b>	Ratio of annualized return and annualized risk
<b>Sharpe Ratio</b>	The Sharpe ratio is computed as the ratio of index excess returns and annualized total risk where excess return is defined as the difference between the annualized total index return and the risk free rate corresponding to the currency of analysis
<b>Active Return (%)</b>	Difference of the annualized index return and the annualized benchmark return
<b>Tracking Error (%)</b>	Annualized standard deviation of active returns (based on monthly data)
<b>Information Ratio</b>	Ratio of index active return and tracking error (based on monthly data)
<b>Historical Beta</b>	Beta is a measure of the level of co-movement between an index and its benchmark. It is calculated as the correlation between index and benchmark returns multiplied by the ratio of total risk of the index and its benchmark (based on monthly data)
<b>Average Number of Constituents</b>	Average number of constituents (based on monthly data)
<b>Turnover (%)</b>	Annualized Average one-way index turnover over rebalancing dates
<b>Price to Book</b>	Price to book harmonic average (based on monthly data)
<b>Price to Earnings</b>	Price to earnings harmonic average (based on monthly data)
<b>Dividend Yield (%)</b>	Dividend yield (%) average (based on monthly data)
<b>Downside Deviation (%)</b>	Annualized lower semi-deviation of index total returns (based on monthly data)
<b>Sortino Ratio</b>	Ratio of the Average excess return (above a specified Acceptable Return, MAR, assumed to be 0%) and downside deviation
<b>VaR @ 95% (%)</b>	5th percentile of historical index returns (based on monthly data)
<b>VaR @ 99% (%)</b>	1st percentile of historical index returns (based on monthly data)
<b>Expected Shortfall (CVaR) @ 95% (%)</b>	Average of returns below Var @ 95% (based on monthly data)
<b>Expected Shortfall (CVaR) @ 99% (%)</b>	Average of returns below Var @ 99% (based on monthly data)
<b>Maximum Drawdown (%)</b>	Maximum index drawdown (based on daily data)
<b>Maximum Drawdown Period (months)</b>	Maximum index drawdown period (based on daily data)

	Definition
<b>Skewness</b>	Skewness of index returns (based on monthly data), measures the degree of asymmetry of the return distribution.
<b>Kurtosis</b>	Kurtosis of index returns (based on monthly data), measures the degree of peakedness of the return distribution.
<b>Maximum Active Returns Drawdown (%)</b>	Maximum active return drawdown (based on daily data)
<b>Maximum Active Returns Drawdown Period (months)</b>	Maximum active return drawdown period (based on daily data)
<b>Active Risk Contribution (%)</b>	Asset active weight multiplied by its marginal contribution to active risk and divided by the total index active risk
<b>Cross-Sectional Volatility Contributions (%)</b>	Contributions to cross-sectional volatility (based on monthly data, 12-month moving average)
<b>Thematic Exposure (%)</b>	Weighted average of exposures to thematic relevance scores. Thematic relevance scores are expressed as a percentage to gauge a company's economic linkage to a given theme.

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