

New Perspectives on tracking Japanese Equities, featuring The JPX Prime 150 Index

Index Business
JPX Market Innovation & Research

November 13, 2023



Change of Index

- The nature of index, which began as an indicator of market trends (market averages), has evolved and its use has expanded significantly.
- Indices play many roles, including benchmarking as an investment assessment, structuring products linked to them, and promoting initiatives for companies (e.g., decarbonization, etc.).

Access to indices through financial instruments

e.g. index funds, futures, options, ETFs, structured products

Exposure to various asset classes and market segments

e.g. mid/small cap, industry, region/country, fixed income, currency, commodities, volatility

Execution of investment themes

e.g. dividends, factors, inflation hedging, ESG, climate, technology, cryptocurrencies

Benchmark evaluation of market indices and performance

e.g. TOPIX, S&P500

Expansion of Our Indices Variation



Expansion of Our Indices Variation

Market Benchmark	<u>TOPIX</u>
Market Section	TSE Prime Market Index, TSE REIT Index, TSE Infrastructure Funds Index, JPX JGB Futures Index Series, Nikkei-JPX Commodity Index
Sector	Foods, Energy Resources, Automobiles & Transportation Equipment, Banks, Real Estate, etc. (17 sectors) TSE REIT Property Sector Index Series (Office, Residential, Retail & Logistics, Others)
Size-based (Market Cap.)	TOPIX1000, 500, 100, Core30, Large70, Mid400, Small, etc.
Style	TOPIX Value, Growth, etc.
Focus on Quality of the Company (2014~)	JPX-Nikkei Index 400, JPX-Nikkei Mid and Small Cap Index → Selected based on ROE, operating profit, Corporate Governance, etc. in addition to market capitalization and trading value. <u>S&P/JPX Dividend Aristocrats Index</u> → Selected based on stocks increasing or maintaining dividends for at least 10 straight years. <u>JPX/S&P CAPEX & Human Capital Index</u> → Selected based on capex and R&D growth and human capital, etc.
Custom (2017~)	TOPIX High Dividends Yield 40 Index, TSE REIT Core Index, TSE REIT Sector Focus Index Series, etc.
ESG (2018~)	<u>S&P/JPX Carbon Efficient Index</u> , S&P/JPX 500 ESG Score Tilted Index Series, etc.
New Attempts (2023~)	<u>JPX Prime 150 Index</u> → Composed of companies that are estimated to create value based on two measures; equity spread and PBRs. Kyodai-Kawakita/JPX Japan Index → Developed with Kyoto University as a benchmark for long-term investors.

Changes in the calculation method

- 1921 Calculated a **trading volume weighted** stock price index (the former Tokyo Stock Exchange).
→ The first stock price index on the Japanese stock exchange.
-
- 1950 Calculated **an adjusted price index** (calculated retroactively to 1949).
→ Ceased in 1971
→ Succeeded by Nihon Short-Wave Broadcasting Co., Ltd. (later Nikkei Inc.) (currently the Nikkei Average).
-
- 1969 **Started calculating Tokyo Stock Price Index (current TOPIX) on a market capitalization-weighted base.**
-
- 2005 Modified TOPIX to be **free-float adjusted market capitalization-weighted**
→ During the same period, the world's major indices were modified to be free-float adjusted market capitalization-weighted.
→ TOPIX was changed to be weighted by the market capitalization of tradable shares (free-float adjusted market capitalization), which excludes shares held by major shareholders and executives and treasury shares from the listed shares.
→ Expected to improve price formation of individual stocks, increase convenience as a benchmark, and improve functionality as an economic and statistical indicator.
-
- 2022~ **Revised of the calculation method to place more emphasis on liquidity** (in progress)
→ Actions based on the Final Report by the "Expert Study Group on the Structure of Capital Markets in Japan" of the Financial System Council.

TOPIX-linked Assets



- AUM (Asset Under Management) of domestic ETFs tracking TOPIX is about JPY 37 trillion.
- Moreover, AUM including overseas ETFs and pension investment-linked assets reached roughly JPY 83 trillion.

< Domestic ETFs tracking TOPIX >

#	Code	Fund Name	AUM (JPY 100 bil.)
1	1305	iFreeETF TOPIX (Yearly Dividend Type)	77.2
2	1306	NEXT FUNDS TOPIX Exchange Traded Fund	169.7
3	1308	Listed Index Fund TOPIX	78.8
4	1348	MAXIS TOPIX ETF	25.5
5	1473	One ETF TOPIX	4.5
6	1475	iShares Core TOPIX ETF	11.0
7	2524	NZAM ETF TOPIX	1.5
8	2557	SMDAM ETF TOPIX	0.4
9	2625	iFreeETF TOPIX (Quarterly Dividend Type)	0.5
Total			369

* As of March 31, 2023

Overview of TOPIX Revision on Progress

- In conjunction with the introduction of the new market segmentation in TSE (April 2022), TOPIX revision is underway to place more emphasis on liquidity, while cutting TOPIX loose from market segments.
 - * Although stocks listed on the First Section of TSE were previously automatically set to be TOPIX constituents, JPXI will continue to use the existing constituents regardless of the markets selected for the new market segmentation, thereby redefining the integrated relationship with the market segmentation.
- Since TOPIX is widely used for passive management such as pensions and investment trusts, TOPIX will be reviewed in phases, giving due consideration to the impact on managers and the market.

Removal of strategic shareholdings

Remove strategic shareholdings from free-float shares using in calculation of TOPIX.

* Implemented in three stages (monthly), starting in April 2022 and completed on June 30, 2022.

Removal of constituents whose tradable shares are small

Constituents with tradable share market capitalization under JPY 10 billion will be gradually removed from TOPIX constituents.

(The number of relevant constituents are 439. Planned to be completed on January 31, 2025.)

We will begin the consideration of rules after February 2025 with the aim of further enhancing the functionality of TOPIX as an investable index

Co-brand Index with S&P

Introduction of Co-brand indices with S&P

(S&P/JPX Dividend Aristocrats Index, JPX/S&P CAPEX & Human Capital Index, S&P/JPX Carbon Efficient Index)



	S&P/JPX Dividend Aristocrats Index	JPX/S&P CAPEX & Human Capital Index	S&P/JPX Carbon Efficient Index
Point	<ul style="list-style-type: none"> Using TOPIX as the universe, the selection will be based on constituents (40-50) that have increased or maintained stable dividends for at least 10 years. Developed by applying the methodology of S&P 500 Dividend Aristocrats Index to the Japanese Index. 	<ul style="list-style-type: none"> Using TOPIX as the universe, score based on growth of capex, etc., capex revenue effect and human capital, and select top issues and assign a weighting. Utilize human capital investment scores provided by S&P Group company. 	<ul style="list-style-type: none"> Using TOPIX as the universe, we determine constituent weightings based on disclosures of environmental information and level of carbon efficiency, etc. Utilize environmental information provided by S&P Group company.
Launch Date	• December 22, 2015	• April 27, 2016	• September 25, 2018
Liquidity	• Average daily value traded of at least JPY 300 mil. for the three months.	• JPY 100 bil. of total value traded over the past year, etc.	• (non-constituents) JPY 50 mil. of 3 months median daily value traded.
Removal	• A dividend payout ratio of more than 100%, a negative dividend payout ratio, etc.	• Negative operating income in all the 3 most recently reported fiscal year, etc.	• Remove based on GHG emissions per revenue and disclosures of environmental information.
Selection • Weighting	<ul style="list-style-type: none"> Select 40-50 constituents in descending order of dividend yield among issues that meet liquidity criteria, etc. and have increased or maintained stable dividends every year for at least 10 consecutive years Calculated as dividend yield weighted average. 	<ul style="list-style-type: none"> Calculate capex and R&D growth, capex revenue effect, and human capital score for issues that meet liquidity criteria, etc. Based on these factors, calculate an overall score, select the top issues and assign a weighting. 	<ul style="list-style-type: none"> Select the constituents based on liquidity criteria, etc. Adjust weighting of each constituent based on disclosures of environmental information, level of CO2 emissions per revenue and impact of industry classification.

Main Methodology (extracted)

ETFs tracking Co-brand indices with S&P

(S&P/JPX Dividend Aristocrats Index, JPX/S&P CAPEX & Human Capital Index, S&P/JPX Carbon Efficient Index)



S&P/JPX Dividend Aristocrats Index

JPX/S&P CAPEX & Human Capital Index

S&P/JPX Carbon Efficient Index

of ETFs

1

3

3

ETFs

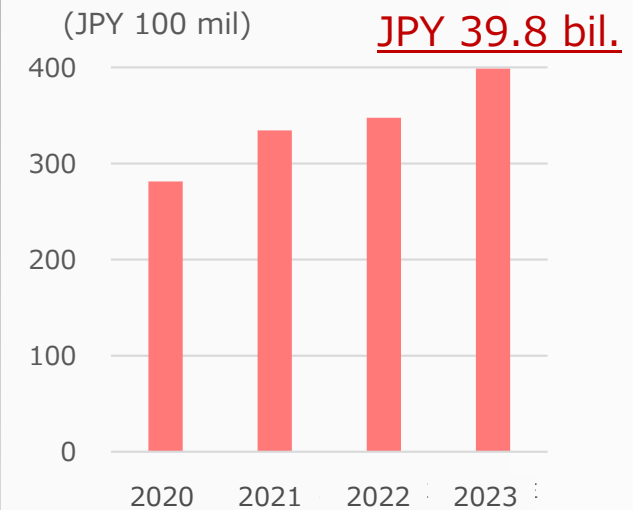
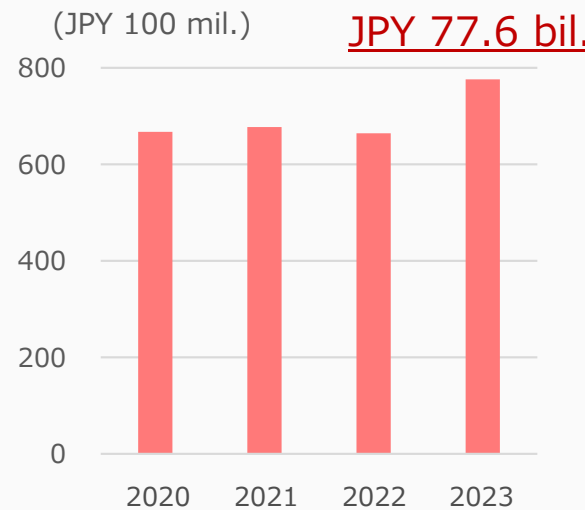
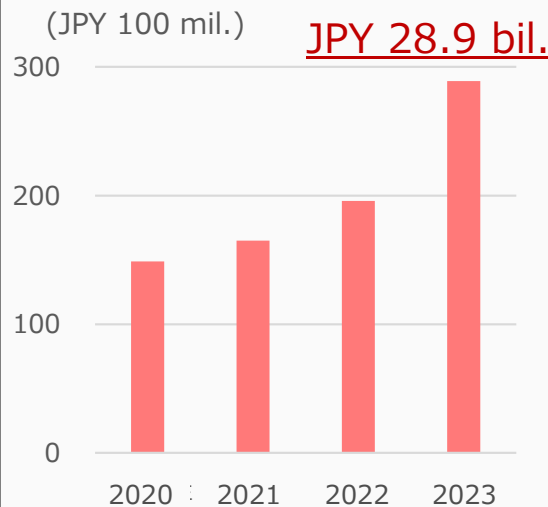
- One ETF High Dividend Japan Equity (1494)

- Listed Index Fund Japanese Economy Contributor Stocks (1481)
- One ETF JPX/S&P CAPEX & Human Capital Index (1484)
- iShares JPX/S&P CAPEX & Human Capital ETF (1483)

- MAXIS Carbon Efficient Japan Equity ETF (2560)
- NZAM ETF S&P/JPX Carbon Efficient Index (2567)
- SMT ETF Carbon Efficient Index Japan Equity (2642)

Change of Total AUM (as of the end of each year)

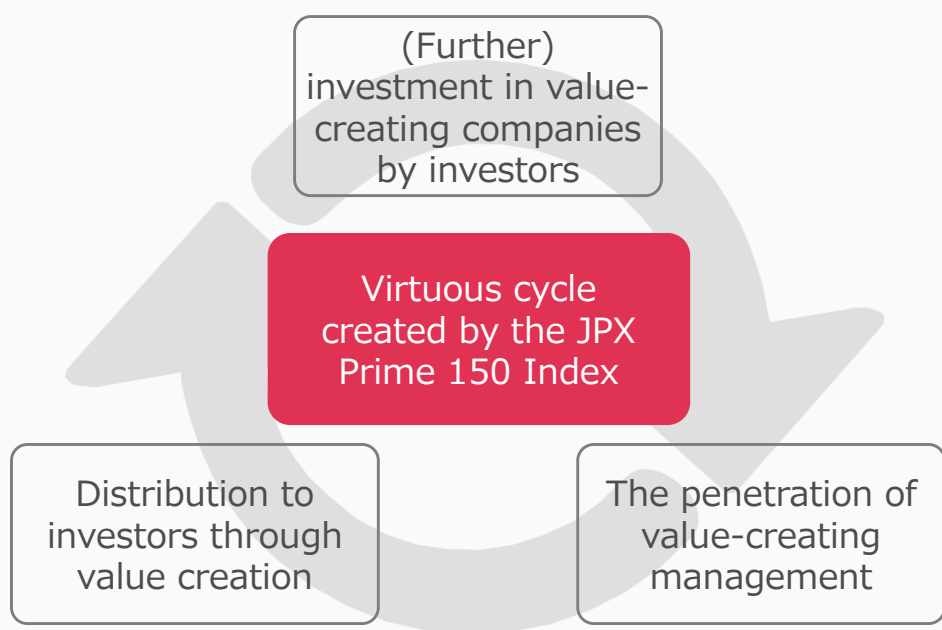
* for 2023, as of end of Sep.



(Source) JPX Website "Index List · Index Performance.pdf" < <https://www.jpx.co.jp/english/markets/indices/line-up/index.html> > , "Listed Issues - ETFs", Bloomberg

JPX Prime 150 Index

Outline and Aim of JPX Prime 150 Index



– Environment surrounding the Japanese stock market –
 Recently, there has been increasing attention paid to the status of value creation by Japanese companies. For example, only about half of the listed companies in TSE Prime Market have a PBR (price book value ratio) exceeding 1x, which represents expectations of future value creation.

In order to revitalize the Japanese stock market and the Japanese economy, improving corporate value is necessary growth increase earning power and continue by achieving a return on capital that exceeds the cost of capital. We expect large companies whose market capitalization already exceeds JPY 1 trillion, need to achieve further growth through continued value-creating management and become a driving force.

JPX Prime 150 Index

Characteristic	1. Consists of “companies of similar quality to S&P 500” *PBR, ROE, Sales growth rate, EPS growth rate 2. Mainly companies with market capitalization of over JPY 1 trillion that represent Japan, covering about 50% of the Japanese market with 150 stocks 3. Characteristics and performance different from TOPIX (large size, growth)	
Selection Method	The top 500 stocks by market capitalization of TSE Prime Market	
	Equity Spread Criteria The top 75 companies with ROE exceeding the cost of equity (the return expected by investors)	PBR Criteria The top 75 companies by market capitalization with the PBR exceeds 1x
Concept	150 companies representing Japan with earning power that are estimated to create value	

Two indicators for measuring Value Creation

Equity Spread

["return on capital" which is based on financial results]

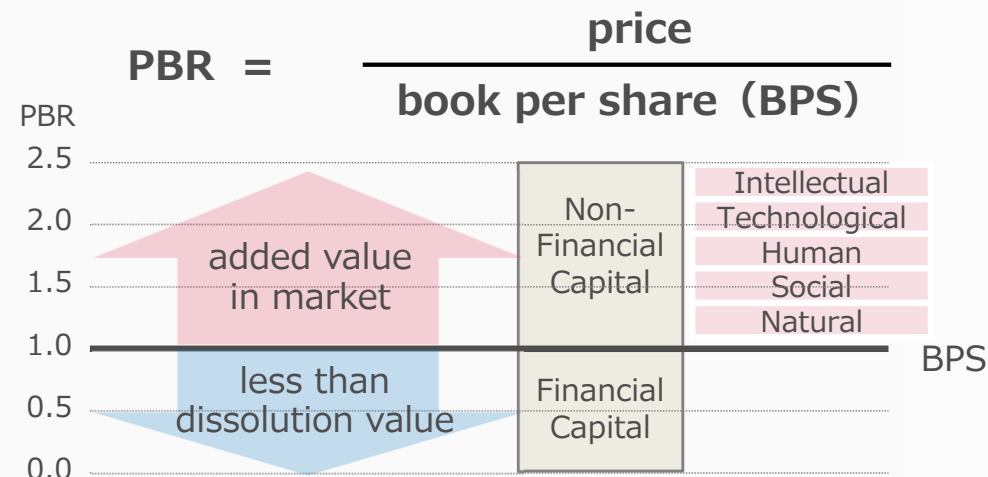
Equity Spread = ROE – cost of equity

ROE = net income ÷ equity
= ratio of net income to equity

cost of equity = company costs to shareholders
= the minimum return expected by shareholders

PBR

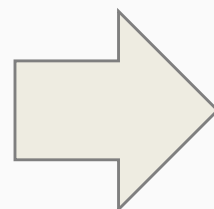
["market valuation" which is based on future information and non-financial information]



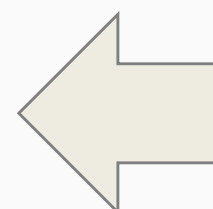
Equity spread is the added value created by a company as a result of its business performance that exceeds shareholder expectations.

The portion of the price that exceeds the BPS is the added value created by a company's Non-Financial Capital (intellectual, technological, human, social and natural capital, etc.).

Equity Spread is positive



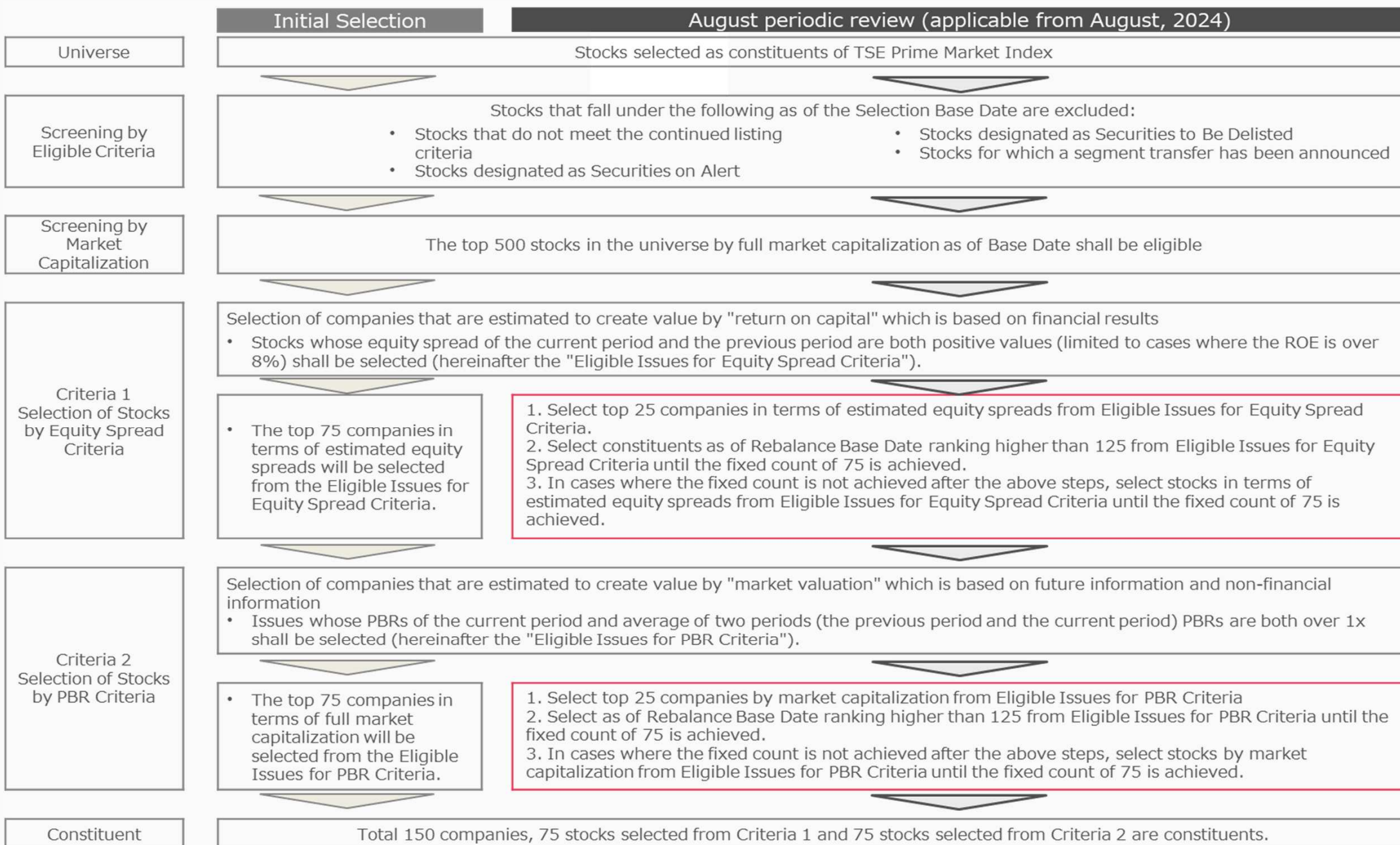
Value Creation



PBR exceed 1x

Equity Spread and PBR are indicators that measure Value Creation (=“earning power”) by companies

Selection Method

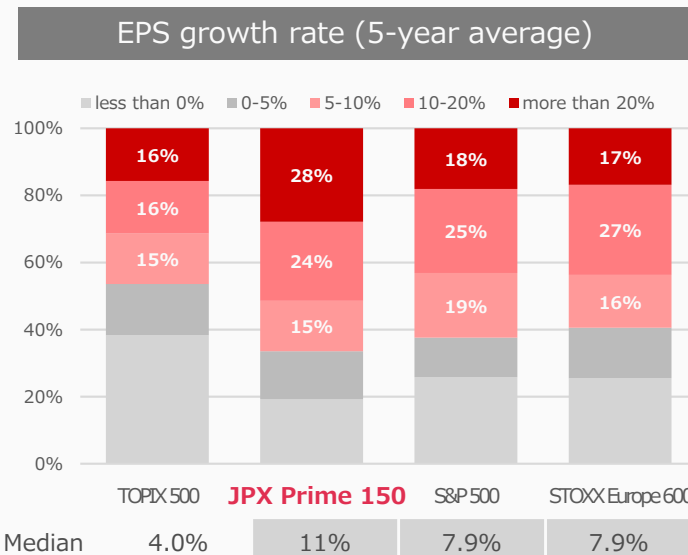
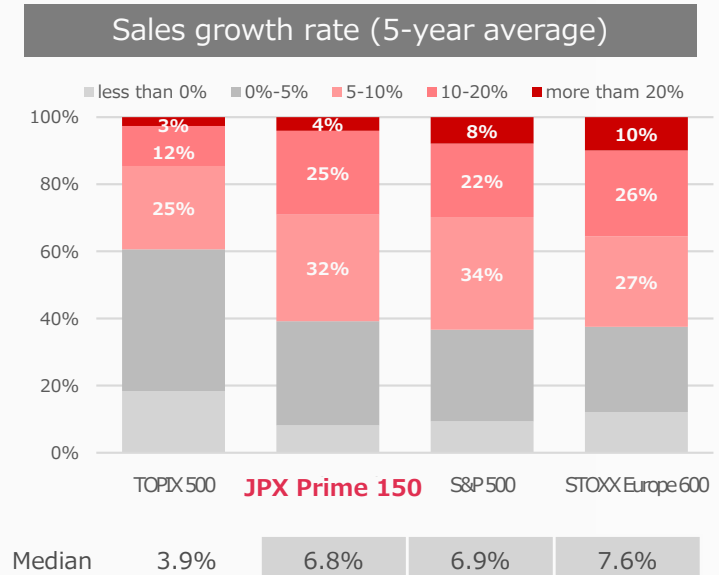
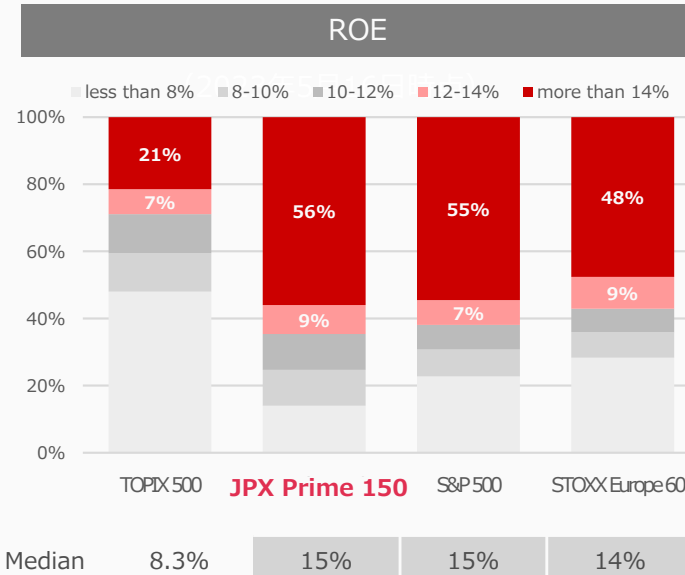
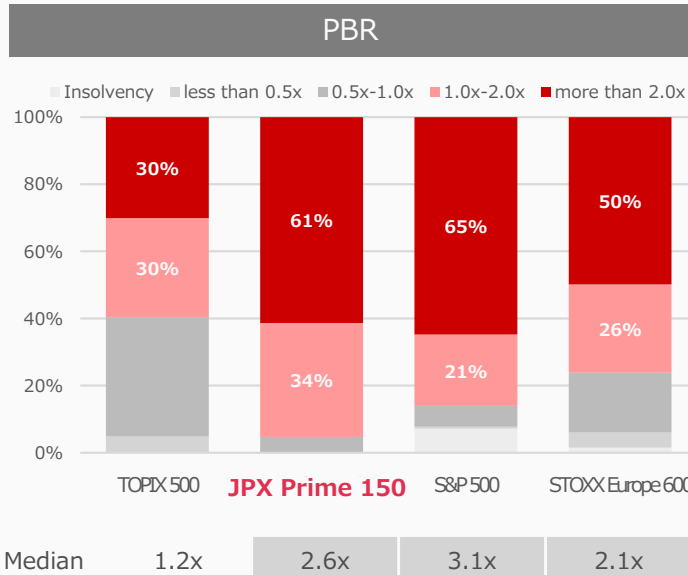


Comparison with U.S. and European Index Constituents (Characteristics 1. and 2.)



The distribution of PBR, ROE, growth potential, and market capitalization of constituents of the JPX Prime 150 Index is competitive compared to S&P500, STOXX600.

(Back testing the past 10 years also shows that the quality is of the same global standard.)



Market Capitalization (JPY billion)

	TOPIX 500	JPX Prime 150	S&P 500	STOXX Europe 600
Total	683,685	395,446	5,188,127	1,950,492
Max	31,382	16,351	369,131	65,151
Average	1,373	2,636	10,335	3,251
Median	538	1,538	4,037	1,342
Min	91	188	448	140
Coverage of Market	87%	50%	80%	90%

(source) Bloomberg, As of May 16, 2023

Forecast Data (ROE · growth rate)

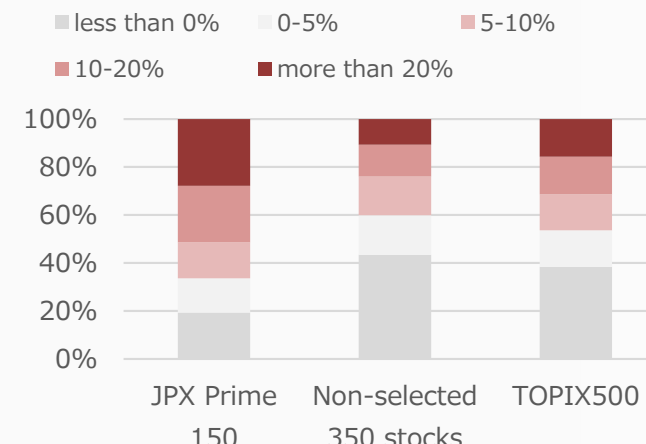
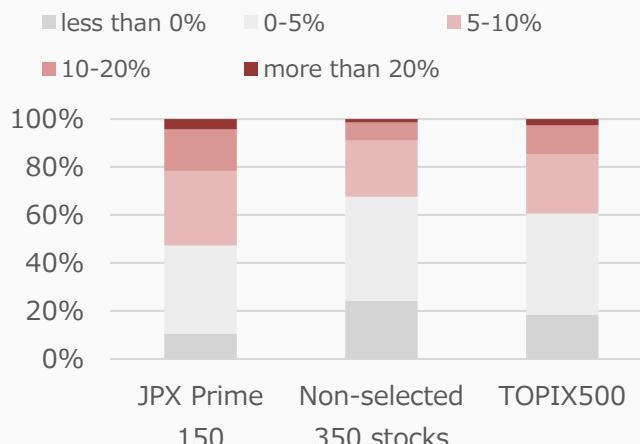
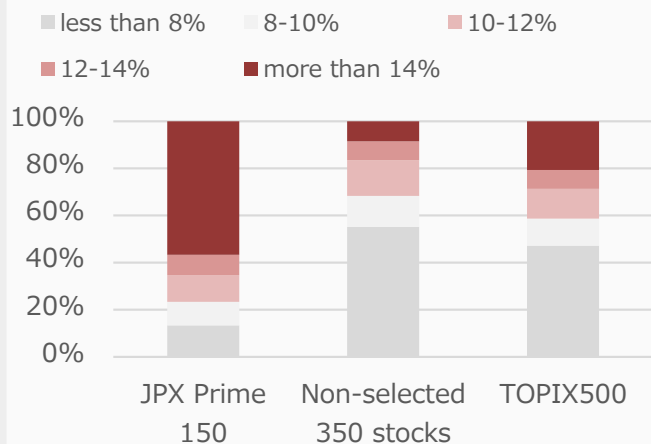


ROE

Sales growth rate (5-year average)

EPS growth rate (5-year average)

Actual



Median **15.4%** **7.6%** **8.3%**

Median **6.8%** **3.0%** **3.9%**

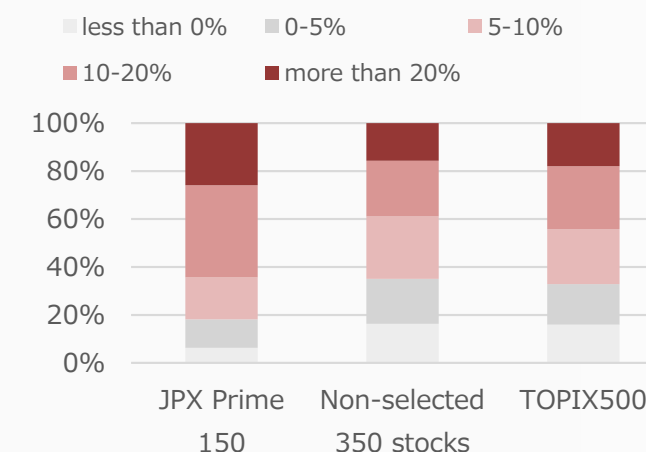
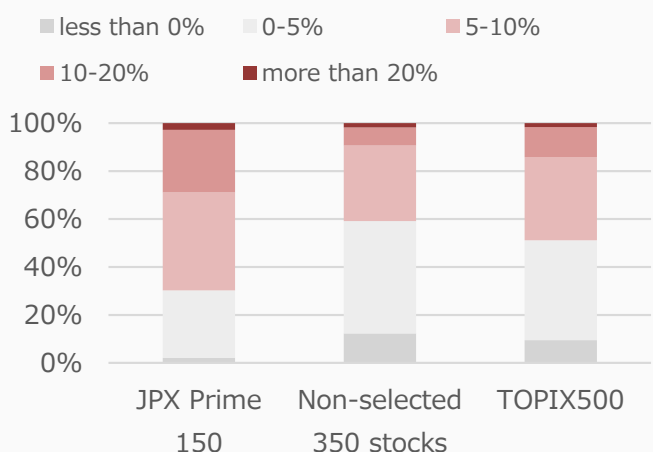
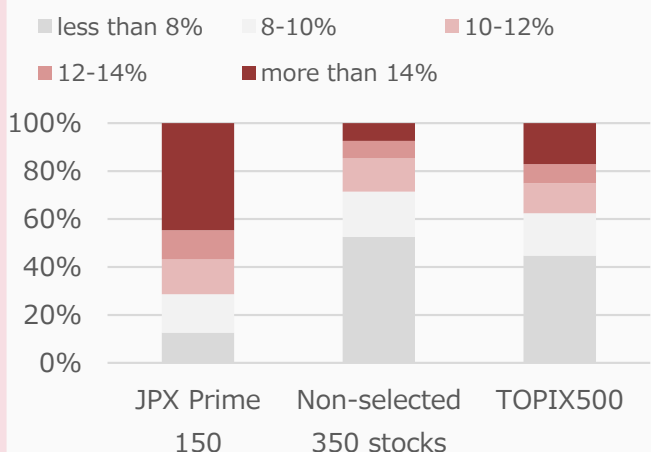
Median **10.7%** **2.1%** **4.0%**

ROE^{※1}

Sales growth rate (5-year average)^{※2}

EPS growth rate (5-year average)^{※2}

Forecast



Median **12.7%** **7.7%** **8.5%**

Median **6.9%** **4.0%** **4.9%**

Median **13.1%** **7.6%** **8.5%**

(source) Created by JPXI based on Bloomberg

- "Non-selected 350 stocks" is an index that were not selected among the top 500 stocks by market capitalization in the prime market

- The average growth rate over the five years from the results three years ago to the forecast for the next fiscal year.

Characteristics and performance (Characteristic 3.)



Characteristics of JPX Prime150

Size : **+0.39**
Growth* : **+0.23**

Tracking Error (vs TOPIX) : 3.2%

*Growth ... earnings / sales growth (Actual)
earnings growth rate (Forecast)

Higher than the Tracking Error of TOPIX 500 and JPX Nikkei 400

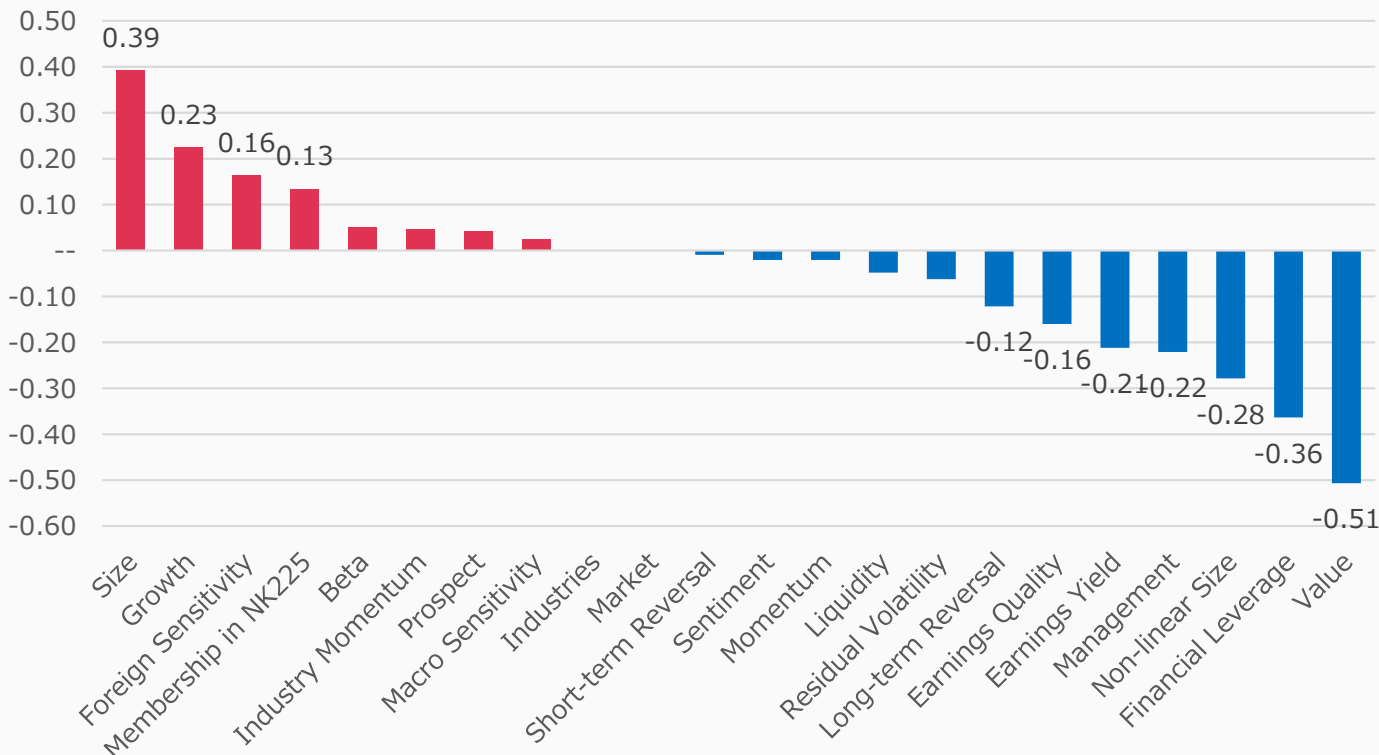
Average of last 10 years of back testing

Size : +0.42, Growth : 0.20

Similar risk/return profile to current constituents

Characteristics and performance are assumed to be different from these indices

(1) Active Exposure (vs TOPIX)



(2) Tracking Error (vs TOPIX)

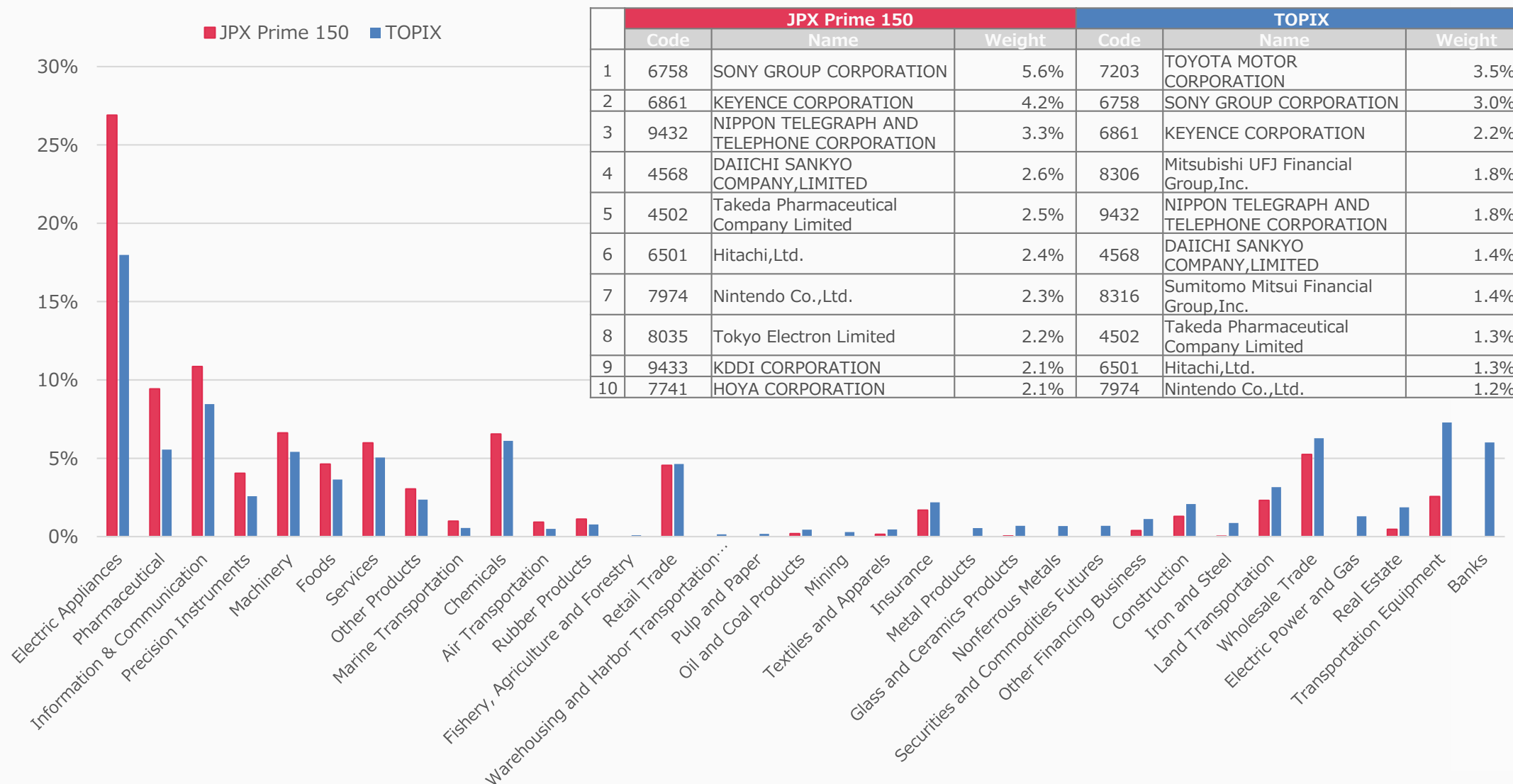
	TE
TOPIX	—
TOPIX 500	0.66%
JPX-Nikkei 400	0.93%
<u>JPX Prime 150</u>	<u>3.2%</u>

(Note) As of May 16, 2023

- Analysis by MSCI Barra JPE4

Weight by Industry

Although the weight of each industry varies depending on the market environment at the time, by not adjusting between industries, even in the past 10 years of back testing, the weight composition by industry differs from TOPIX.

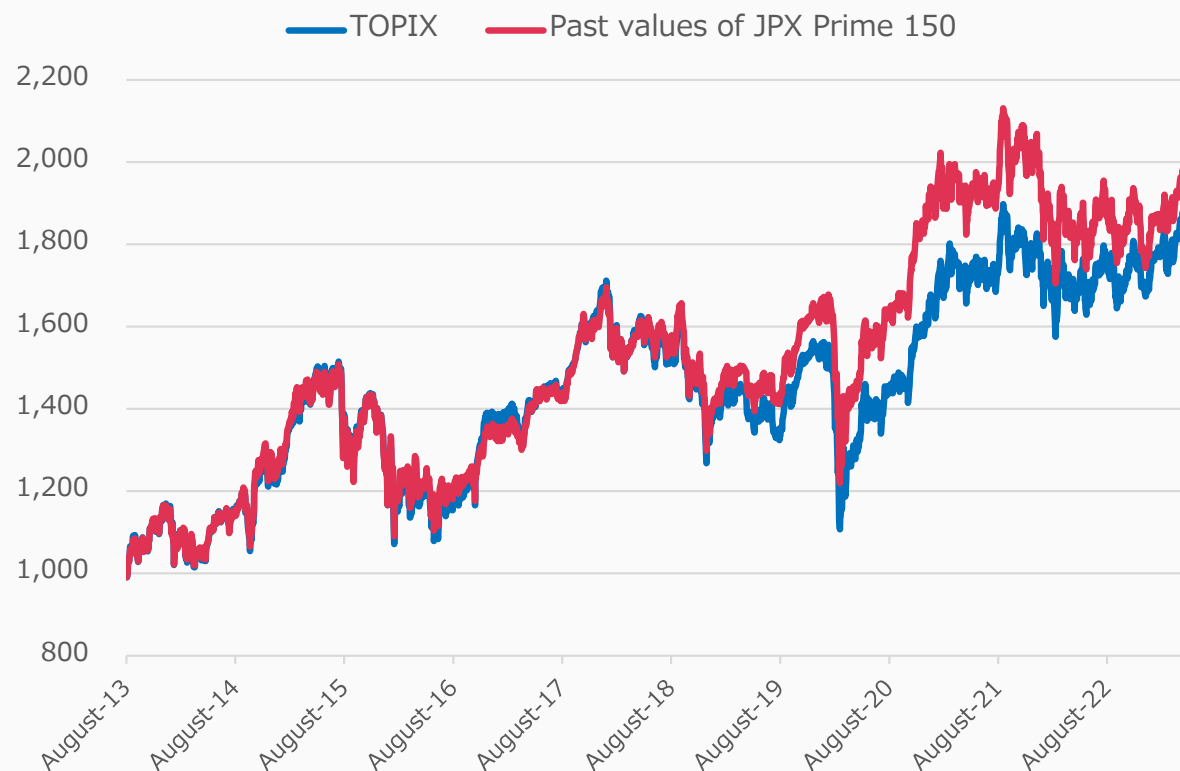


- Industry classification : TSE 33 sectors

(Note) As of May 16, 2023

Past Values and Graphs (vs TOPIX)

(1) Past values and graphs (From August 2013 to May 2023)



* Base date = August 29, 2013, Base point = 1,000

* The "Past values of JPX Prime 150" is an estimation model based on the assumption that the initial selection was made in 2013 and the priority rule for stocks selected in the previous year was applied in the regular reconfiguration. It does not have continuity with the JPX Prime 150 Index, which will be initially selected with a base date of May 26, 2023, and will begin calculation on July 3, 2023.

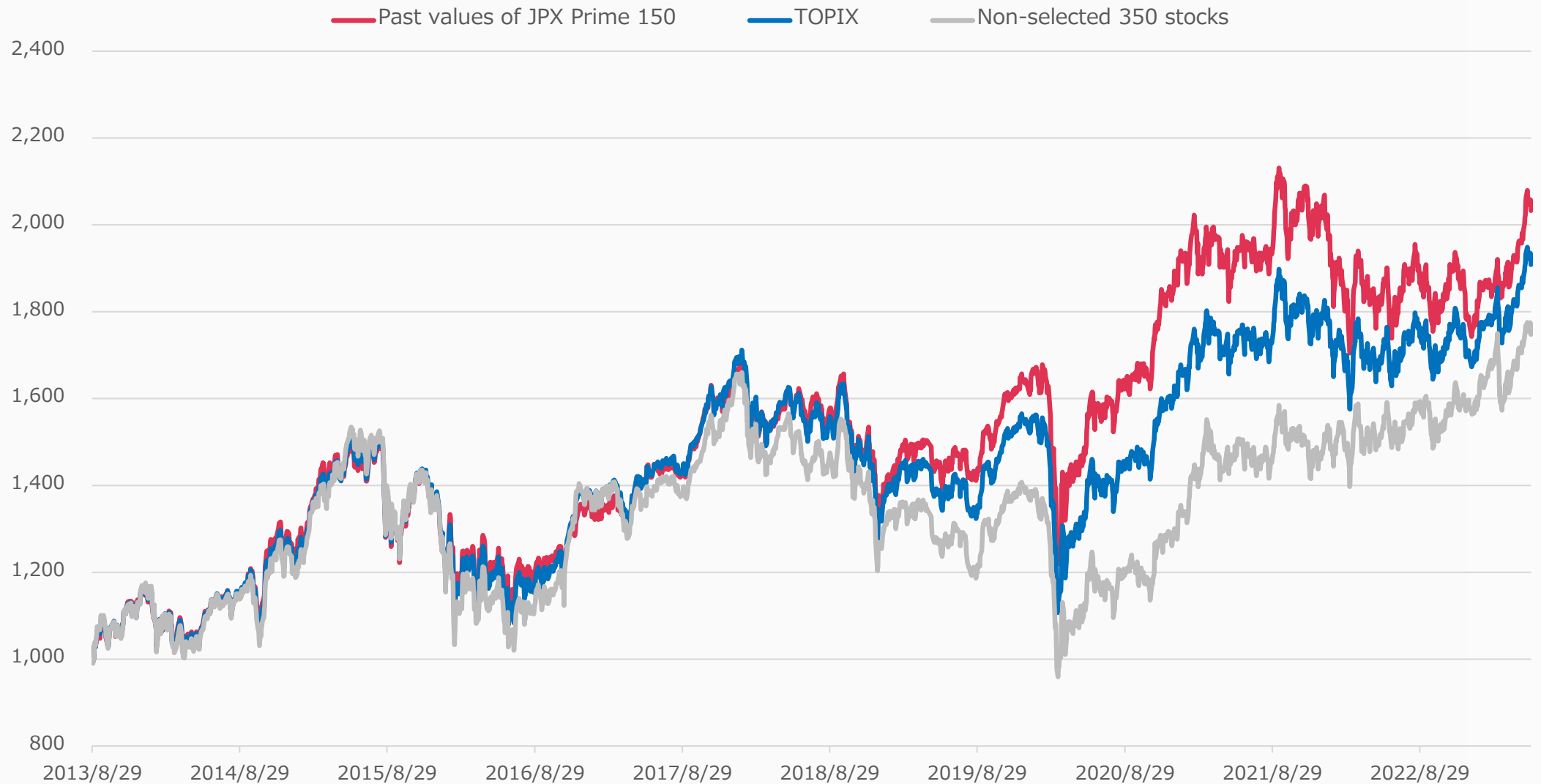
	Return			Risk		
	Last 1Y	Last 5Y	Total	Last 1Y	Last 5Y	Total
JPX Prime 150	9.4%	5.3%	7.6%	15.3%	15.4%	14.6%
TOPIX	11.4%	4.0%	7.0%	12.7%	15.0%	14.9%
	Sharp ratio			(reference) Information ratio		
	Last 1Y	Last 5Y	Total	Last 1Y	Last 5Y	Total
JPX Prime 150	0.62	0.34	0.52	-0.46	0.36	0.22
TOPIX	0.90	0.27	0.47	-	-	-

(2) Turnover Rate for the Constituent Review

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Number of replaced issues	9	19	26	11	7	12	23	15	20
Turnover rate*	5.1%	9.4%	13.4%	3.9%	2.0%	4.5%	9.2%	9.2%	6.3%

* Turnover rate is calculated as the sum of increments (decrements) in market capitalization weight for each constituent before and after the periodic review
 [Turnover rate = Sum of weight increments = Sum of weight decrements]

Past Values and Graphs (vs “Non-selected 350 Stocks”)



* Base date = August 29, 2013, Base point = 1,000

* The “Past values of JPX Prime 150” is an estimation model based on the assumption that the initial selection was made in 2013 and the priority rule for stocks selected in the previous year was applied in the regular reconfiguration. It does not have continuity with the JPX Prime 150 Index, which will be initially selected with a base date of May 26, 2023, and will begin calculation on July 3, 2023.

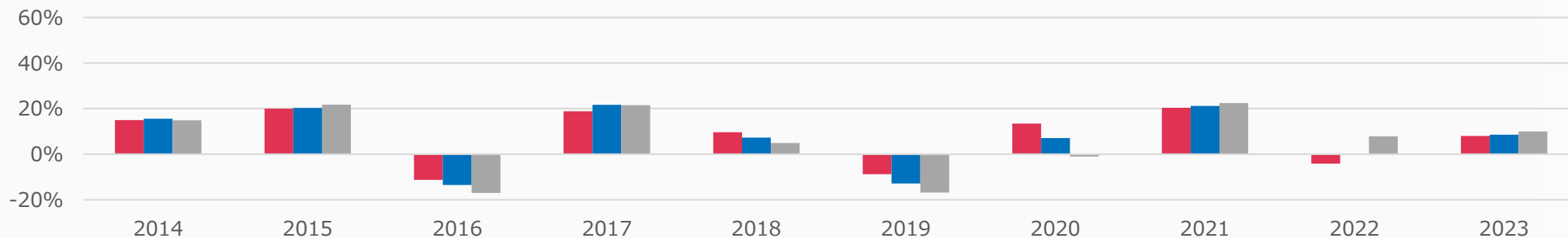
• “Non-selected 350 stocks” is an index that were not selected among the top 500 stocks by market capitalization in the prime market

Performance Comparison by Period

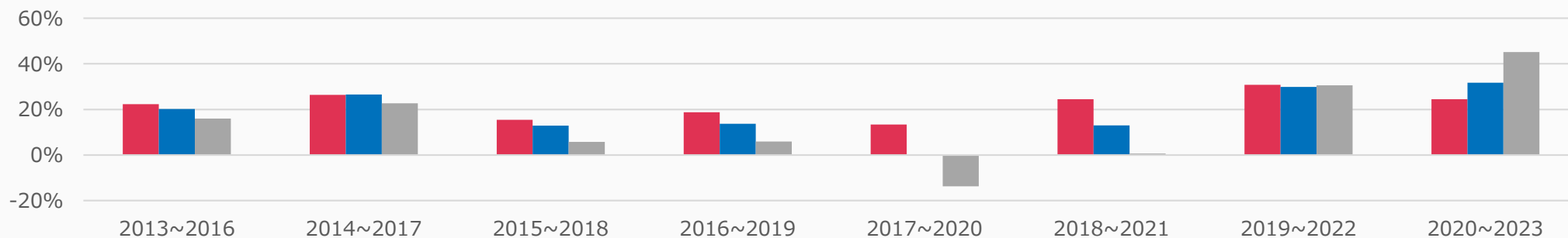


■ Past values of JPX Prime 150 ■ TOPIX ■ Non-selected 350 stocks

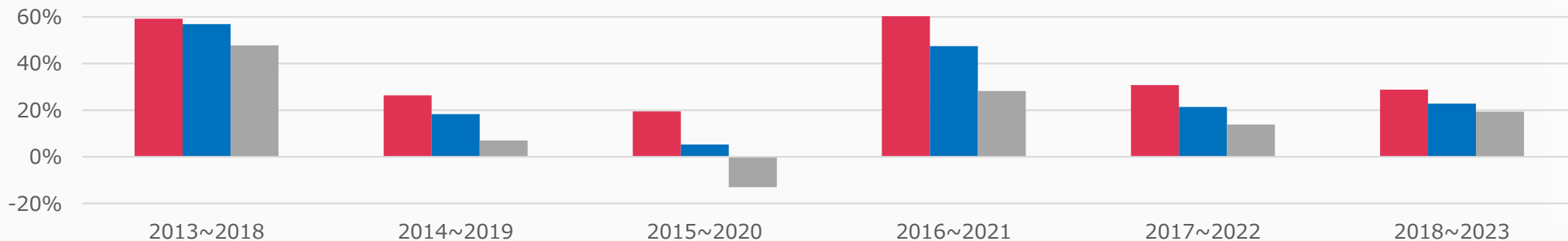
1 Year return



3 Years return



5 Years return



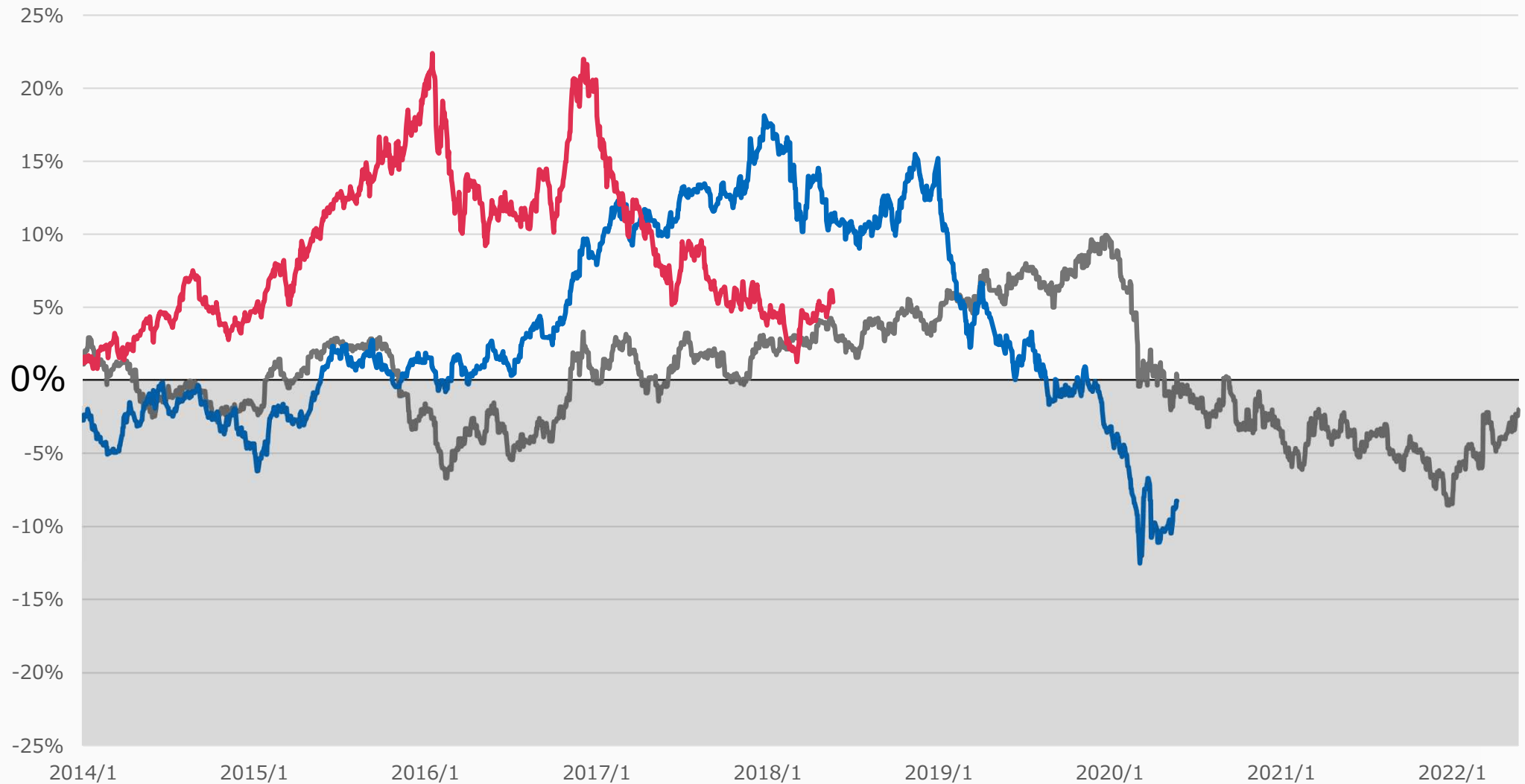
※ Calculated starting from the end of August, when the periodical reconstitution was implemented (the most recent end is the end of May 2023)

Excess Return vs TOPIX since investment started



Excess Return of JPX Prime 150 compared to TOPIX

— Excess Return 1Y — Excess Return 3Y — Excess Return 5Y




※ Investment performance for 1, 3 or 5 years from the start of investment from January 1st 2014 to May 26th 2023
※ Both indexes are calculated using total return values

(Reference) Our Indices Line-up(extract)



Stock Price Indices

Derivatives Indices

TOPIX •Section	TOPIX		TSE Prime Market Index	JPX JGB Futures Index Series
	TSE REIT Index・TSE Infrastructure Funds Index		TSE Standard Market Index	
Size by market cap.	TOPIX Core30	TOPIX 100 (Large-Sized)	TSE Growth Market Index	
	TOPIX Large70		TOPIX 500	
	TOPIX Mid400 (Medium-Sized)			
	TOPIX Small (Small-Sized)	TOPIX Small500		
Sector	TOPIX Sector Indices・TOPIX-17 Series		TSE REIT Property Sector Index Series (Office・Residential・Retail & Logistics, Other)	
	JPX-Nikkei Index 400・JPX-Nikkei Mid and Small Cap Index		S&P/JPX Dividend Aristocrats Index・S&P/JPX Risk Control Index	S&P/JPX JGB VIX
Co-brand	JPX/S&P Capex & Human Capital Index		S&P/JPX Carbon Efficient Index	
	S&P/TOPIX 150 Series (Shariah, etc.)		FTSE JPX Net Zero Japan Index	Nikkei-JPX Commodity Index Series
	S&P/JPX 500 ESG Score Tilted Index Series		Kyodai-Kawakita/JPX Japan Index	
Others	JPX Prime 150 Index		TSE Dividend Focus 100 Index	
	TOPIX Value・TOPIX Growth		TSE REIT Core Index	
	Currency Hedged Index・Leveraged and Inverse Index		TSE Growth Market Core Index・TSE Standard Market TOP20 Index	
	TOPIX High Dividend Yield 40 Index		TSE Growth Market 250 Index	
	TSE REIT Sector Focus Index Series			

(Source) JPX Website "Indices Line-up"

The document "Index List・Index Performance.pdf" < <https://www.jpx.co.jp/english/markets/indices/line-up/index.html> > includes calculation type, number of constituents, main selection factors and style analysis in addition to index classification for each index.

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