

Nomura Japan Equity Growth Potential Index

EQUITY QUANTITATIVE RESEARCH

Index targets companies with growth potential

Focus on efforts by institutional investors to encourage companies to achieve continuous growth

The Nomura Japan Equity Growth Potential Index is an index that focuses on the efforts made by institutional investors to encourage the companies in which they have invested to achieve continuous growth. Over recent years the influence of institutional investors has been growing in Japan. The index aims to systematically select companies that have the potential to achieve growth in response to such encouragement from investors, and to invest efficiently in these companies in order to benefit from the returns that are generated as a result of future growth.

We use factors based on financial indicators to determine a company's growth potential in terms of both "room for growth" and "abundance of capital". "Room for growth" is assessed on the basis of levels of ROE and capex, while "abundance of capital" is assessed on the basis of levels of cash, debt, and free cash flow.

Historical index values have been calculated starting from the index base date of 31 August 2001. The index has historically performed well overall, but has recorded particularly high returns since 2013, when the need for Japanese companies to improve their "earnings power" and the role played by investors in encouraging companies to achieve growth started to attract more attention.

Global Markets Research

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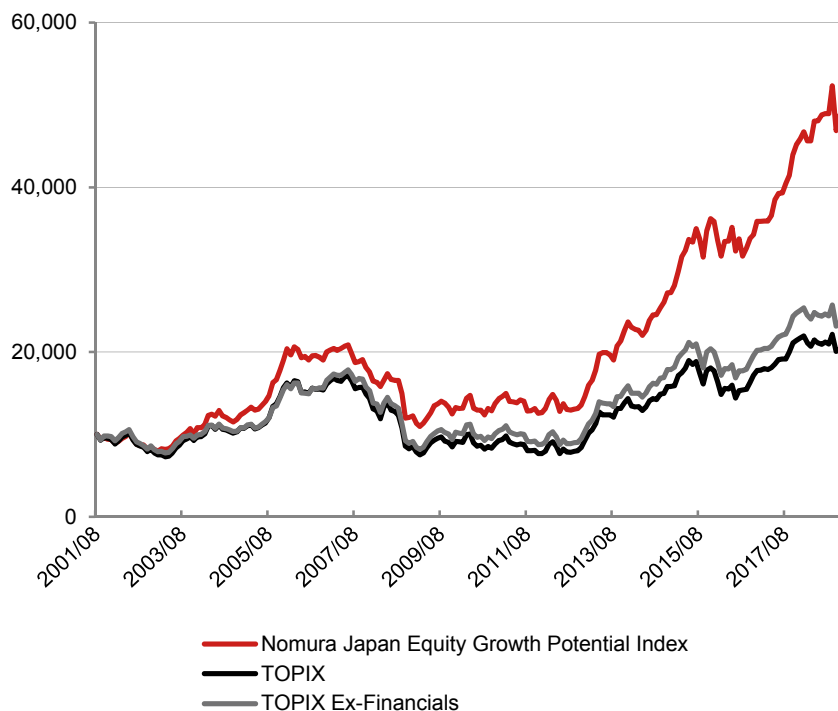
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Fig. 1: Nomura Japan Equity Growth Potential Index (31 August 2001 = 10,000)



Note: Shows data for September 2001 through December 2019. Based on monthly returns including dividends. Transaction costs are not included. Analysis is based on past performance and does not guarantee future performance. Source: Nomura

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1. Introduction

The Nomura Japan Equity Growth Potential Index is an index that reflects companies' potential for growth.

In recent years it has been widely acknowledged that boosting Japanese companies' "earnings power" is a key issue for Japanese economic growth, and more and more institutional investors have been actively encouraging the companies in which they have invested to take steps towards achieving continuous growth. The Nomura Japan Equity Growth Potential Index aims to systematically select companies that have the potential to achieve growth in response to such encouragement from investors and demands from society, and to invest efficiently in these companies in order to benefit from the returns generated as a result of improvements in corporate value.

In Chapter 2 of this report we discuss the steps taken by the Japanese government and the efforts made by institutional investors to encourage growth at Japanese companies, which motivated us to develop the index. In Chapter 3 we set out the method used to select stocks for the index, and explain the basis on which we determine which companies have potential for growth.

In Chapter 4 we compare the performance of the index with the performance of the TOPIX and the TOPIX Ex-Financials from 31 August 2001, its base date, through 31 December 2018, and consider the reasons for the differences in returns. In Chapter 5 we look at the composition of recent index constituents by size and sector, and in Chapter 6 we summarize the findings of this report.

2. Background of index development

Corporate governance reforms aimed at boosting Japanese companies' "earnings power"

Japan has experienced a long period of weak economic growth, and there is growing recognition of the urgent need to increase Japanese companies' productivity and international competitiveness in order to put the economy back on a path of continuous growth. To this end, in its series of strategies under the names of "Japan Revitalization Strategy" and "Investments for the Future Strategy", the Japanese government has since 2013 been implementing various measures aimed at reforming corporate governance in order to boost Japanese companies' earnings power.

Japan's Stewardship Code (2014) and the Corporate Governance Code (2015) are key examples of such measures. The aim of the former is that institutional investors will, via engagement and the exercise of their voting rights, for example, work on the companies in which they have invested to encourage them to achieve continuous growth, while the aim of the latter is to encourage companies to work towards continuous growth in cooperation with their shareholders and other stakeholders. Both codes recommend that investors work together with companies to ensure that companies achieve continuous growth.

Efforts on the part of institutional investors aimed at encouraging companies to generate continuous growth

Reforms such as these have led to a substantial change in the relationship between Japanese institutional investors and companies.

In the past, major Japanese institutional investors tended not to have much involvement in the management of Japanese companies. Activists working aggressively to achieve management reforms through the exercise of their rights as shareholders were in the minority. While there have in the past been instances of major conflict between companies and their long-term shareholders, as in the case of Bull-Dog Sauce¹ in 2007, in recent years this kind of conflict has been becoming less and less common. Nowadays, it is often the case that activists' proposals are seen as likely to generate profits either for the companies or for their shareholders and are either supported by other shareholders or serve as a trigger for corporate reforms.

Mainstream institutional investors—major pension funds and financial institutions—have also started to work aggressively on the companies in which they have invested. Many major Japanese institutional investors have already announced that they have signed up to Japan's Stewardship Code² and are turning their attention to working on management teams at the companies in which they have invested, in accordance with the stipulations of the code.

¹ In May 2007 Steel Partners launched a tender offer aimed at acquiring all the shares in Bull-Dog Sauce [2804]. In response to this, Bull-Dog Sauce became the first Japanese company to implement takeover defense measures. Steel Partners sought an injunction to prevent Bull-Dog Sauce from issuing equity warrants, but the Tokyo District Court rejected this. Steel Partners then immediately appealed to the Tokyo High Court, which ruled that the takeover defense measures proposed by Bull-Dog Sauce were justifiable and that Steel Partners was an "abusive acquirer" seeking only its own gain by selling the shares on. Steel Partners' appeal to the Supreme Court was also rejected and the company's efforts thus ended in failure. After this, more and more Japanese companies introduced takeover defense measures.

² According to Japan's FSA, as of 14 December 2018 239 institutional investors had revealed that they signed up to Japan's Stewardship Code.

Selective investment in companies with the potential to generate growth in response to requests

As a result of this change in stance on the part of investors, Japanese companies started to receive requests to step up their management efforts to improve capital efficiency and boost profitability. These requests might also put pressure on companies but, at companies that are able to respond to them, we think that such requests are likely to act as a powerful boost towards the achievement of growth.

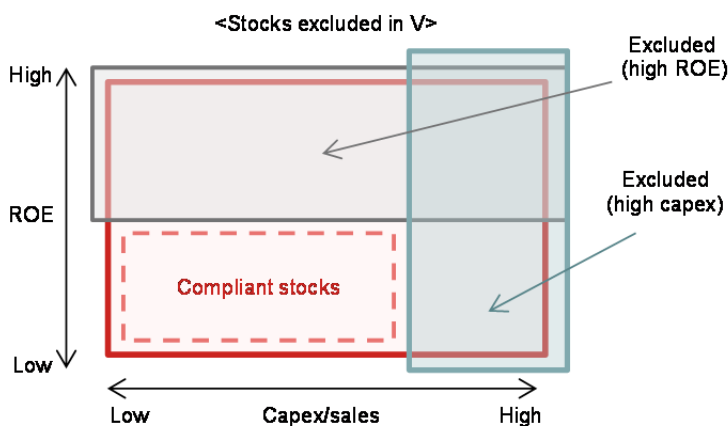
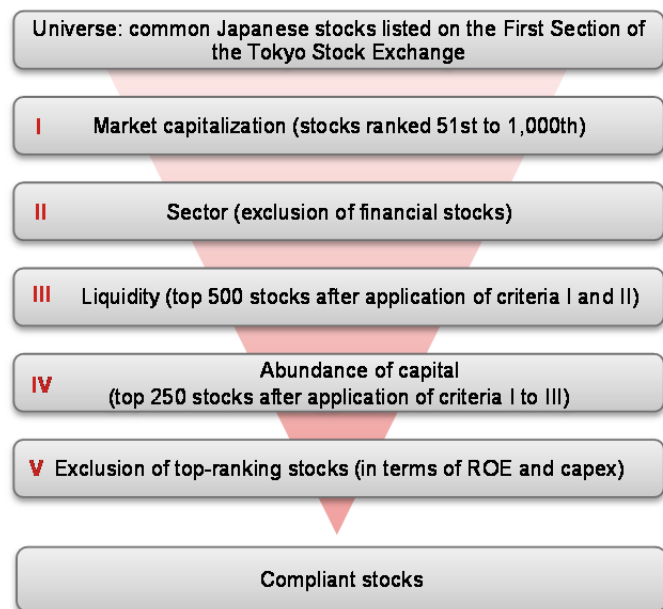
The Nomura Japan Equity Growth Potential Index selects companies that have the potential to achieve growth in response to this encouragement from investors, and enables efficient investment in these companies.

3. Factors used to determine whether or not a company has potential for growth

Stock selection criteria

Figure 2 shows the criteria used to select stocks for the Nomura Japan Equity Growth Potential Index, in the order in which they are applied. Criteria I through V in Figure 2 are applied to the stocks in the stock selection universe, and stocks that meet all criteria are regarded as "compliant stocks".³

Fig. 2: Nomura Japan Equity Growth Potential Index stock selection flow



Source: Nomura

³ Sometimes stocks that are already included in the index but do not meet criterion V are retained in the index, if they meet certain criteria, in order to reduce the trading impact. See [Nomura Japan Equity Growth Potential Index rulebook](#) for details.

Growth potential and abundance of capital

We use factors based on financial indicators to determine a company's growth potential in terms of both "room for growth" and "abundance of capital". "Room for growth" is determined using criterion V in the stock selection flow set out above, and reflects levels of ROE and capex. "Abundance of capital" is determined using criterion IV in the stock selection flow set out above, and reflects levels of cash, debt, and free cash flow.

Determining room for growth (based on ROE and capex)

ROE shows how efficiently a company is using the funds raised from its shareholders to generate profits, and is an indicator to which shareholders should pay particular attention when assessing a company's earnings potential. Some indexes, such as the JPX-Nikkei Index 400, prioritize stocks with a high level of ROE, but the Nomura Japan Equity Growth Potential Index focuses on the potential for growth in ROE and therefore does not select companies that have already achieved a high level of ROE (the lack of scope for further growth in ROE is seen as a negative and such stocks are therefore excluded from the index). Conversely, companies that currently have a relatively low level of ROE are regarded as having substantial room for growth in ROE. Such companies are likely to be the target of engagement by institutional investors looking for an improvement in earnings and are thus likely to see an improvement in ROE.

As well as ROE, we also take the level of capex into account when assessing a company's room for growth. Because new capex is often required in order for a company to improve its capital efficiency and increase its earnings potential, companies that appear to have little scope to increase their capex are excluded in our screening.

Abundance of capital (based on cash, debt, and free cash flow)

To assess abundance of capital, we determine whether or not a company has funds to spare to invest in growth based on the level of cash (representing the stock of funds—the more cash the better), debt (representing the ability to raise funds—the less interest-bearing debt the better), and free cash flow (representing the flow of funds—the more free cash flow the better).

In the stock selection flow set out above, abundance of capital is assessed before room for growth, because having an abundance of capital is assumed to be a major precondition for achieving growth. Not only will a company not be able to boost its earnings if it does not have capital to begin with, but its earnings could deteriorate further if its financial base were to become weak. For this reason, stocks are selected for the Nomura Japan Equity Growth Potential Index from a pool of stocks with an abundance of capital that is always above a certain level.

Has our stock selection method been successful?

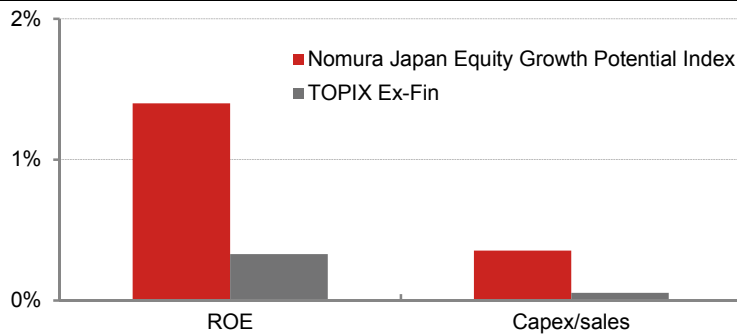
Did the stocks selected for the Nomura Japan Equity Growth Potential Index using the method set out above subsequently achieve growth?

The index undergoes a periodic reconstitution once a year, at the beginning of September. Figure 3 shows how the financial indicators used to select stocks for the index changed over the 12 months between the beginning of September, starting in September 2001, and the end of August in the following year, for both the Nomura Japan Equity Growth Potential Index and the TOPIX⁴.

⁴ Here we used the TOPIX Ex-Financials in order to make a comparison with the Nomura Japan Equity Growth Potential Index, which does not include financial stocks.

Fig. 3: Average change in financial indicators over 12 months

	Average change over 12 months: Nomura Japan Equity Growth Potential Index	Average change over 12 months: TOPIX Ex-Fin	Average difference
	(a)	(b)	(a) - (b)
ROE	1.4%	0.3%	1.1%**
Capex to sales ratio	0.4%	0.1%	0.3%**
Cash to total assets ratio	-0.3%	0.1%	-0.4%*
Debt ratio	-3.6%	-5.5%	1.9%
Free cash flow to total assets ratio	-0.4%	0.0%	-0.5%**



Note: Figure shows the average of changes in financial indicators over 12-month periods from the beginning of September to the end of August the following year for the 17 12-month periods from 2001 to 2017. The definitions of each indicator are the same as those used for the selection of stocks for the Nomura Japan Equity Growth Potential Index. The average change in each indicator is the weighted average, with weightings based on the weighting of each stock in the respective index. For average change, * indicates statistical significance at 5%, ** indicates statistical significance at 1%.

Source: Nomura

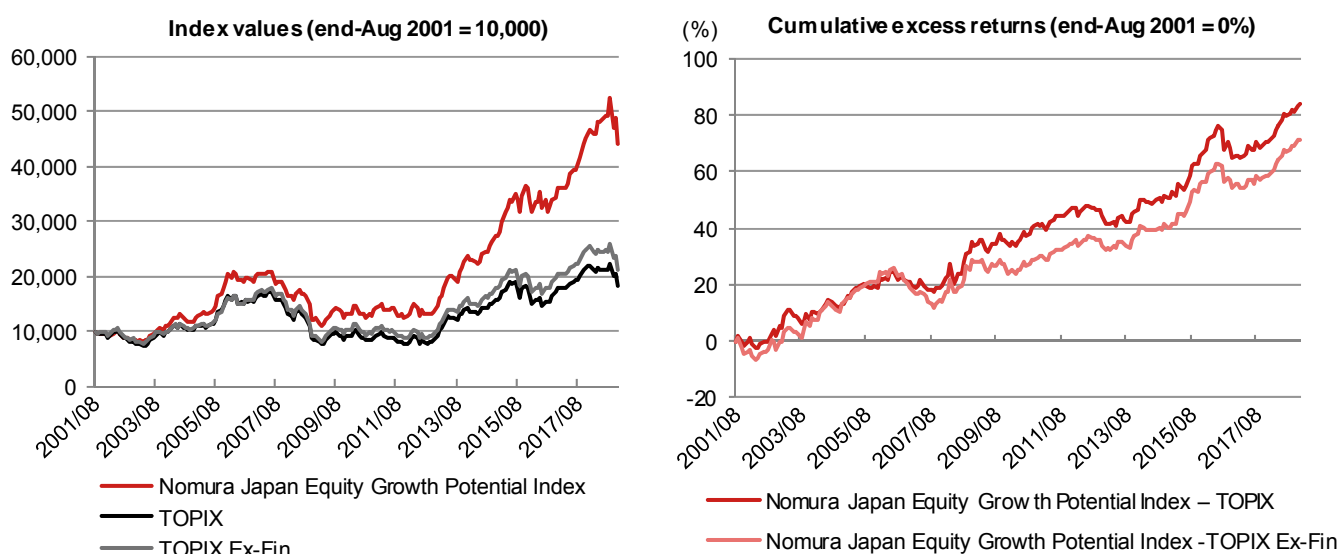
As Figure 3 shows, in the period between the selection of stocks in a periodic reconstitution until the replacement of stocks in the next periodic reconstitution the constituent stocks of the Nomura Japan Equity Growth Potential Index saw an increase in ROE that was significantly greater than that in the market as a whole, as represented by the TOPIX Ex-Financials. These stocks also saw a significant increase in their level of capex relative to the market as a whole, and thus appear to have achieved growth by leveraging the room for growth they had when they were included in the index. In addition, of the three indicators on which abundance of capital is based—cash, debt, and free cash flow—there was no significant change in the average debt ratio, but the cash to total assets ratio and the free cash flow to total assets ratio fell significantly, indicating that some of these stocks might have used cash or free cash flow to carry out capex or other measures aimed at generating growth. These changes in financial indicators thus appear to indicate that our stock selection process generated the hoped-for results to some extent.

4. Performance of Nomura Japan Equity Growth Potential Index

Index values and excess returns

Figure 4 shows the performance of the Nomura Japan Equity Growth Potential Index from September 2001 onwards. The index has performed well overall over this period, but has recorded particularly high returns since 2013, when the need for Japanese companies to improve their "earnings power" and the role played by investors in encouraging companies to achieve growth started to attract more attention. Over the past five years, the index has outperformed the TOPIX by 7.5ppt and the TOPIX Ex-Financials by 6.6ppt (average annualized return basis).

Fig. 4: Performance of Nomura Japan Equity Growth Potential Index



	Absolute performance			Relative performance	
	Nomura Japan Equity Growth Potential Index	TOPIX	TOPIX Ex-Fin	vs TOPIX	vs TOPIX Ex-Fin
Latest 5 years					
Return (annualized, %)	13.5	6.0	6.9	7.5	6.6
Risk (annualized, %)	14.5	15.5	14.7	6.6	5.6
Return/risk	0.93	0.39	0.47	1.13	1.19
Entire period (2001/9–)					
Return (annualized, %)	9.9	5.0	5.8	4.8	4.1
Risk (annualized, %)	16.0	17.5	16.6	6.0	5.5
Return/risk	0.62	0.29	0.35	0.81	0.74

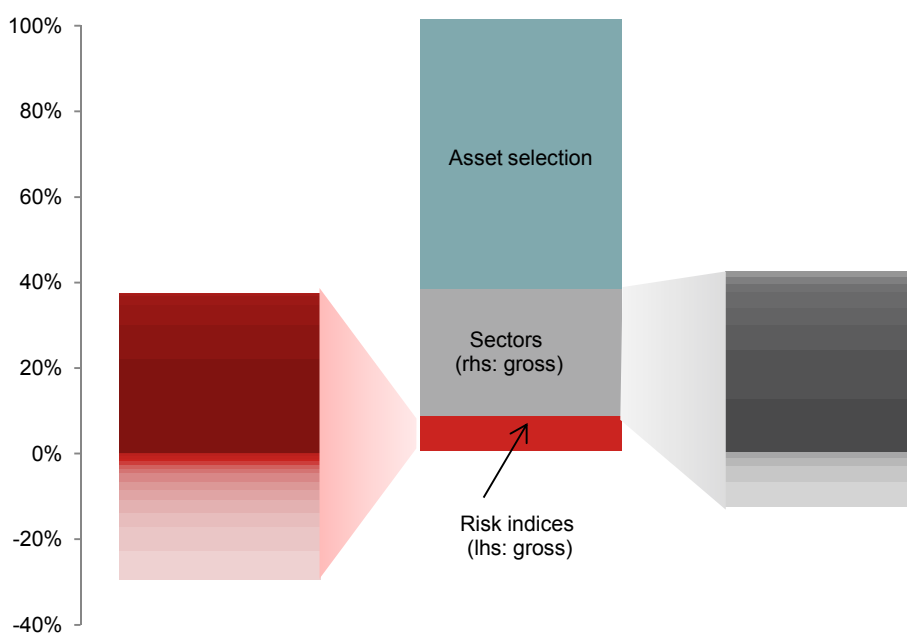
Note: Shows data for September 2001 through December 2018. Based on monthly return including dividends. Transaction costs are not included. Analysis is based on past performance and does not guarantee future performance.

Source: Nomura

Factor analysis of excess returns versus TOPIX

Figure 5 shows a breakdown of the excess returns on the Nomura Japan Equity Growth Potential Index versus the TOPIX by factor.

Fig. 5: Factor analysis of excess returns versus TOPIX



Factors	Contribution (net)	Components making largest positive contributions
Asset selection	62.5%	—
Sectors	29.4%	Consumer goods/services sector (high weighting), financial sector (low weighting)
Risk indices	8.1%	Size (high weighting of small and mid-sized stocks), financial leverage (low)

Note: Shows data for September 2001 through December 2018. The bar in the middle shows the net contributions made by asset selection, risk indices, and sectors, to the excess returns generated by the Nomura Japan Equity Growth Potential Index relative to the TOPIX, based on MSCI's Barra Japan equity model (JPE4). The bars to the left and right indicate the gross contributions of risk indices and sectors, respectively.

Source: Nomura

As Figure 5 shows, asset selection made the greatest positive contribution to excess returns on the Nomura Japan Equity Growth Potential Index versus the TOPIX. This indicates that components not included under sectors or risk indices generated excess returns. As it appears that investors' efforts to encourage companies to achieve growth and the steps taken by companies in response to this encouragement, on which the Nomura Japan Equity Growth Potential Index focuses, cannot be fully explained in terms of existing risk factors or sector factors, these efforts made by investors and companies can therefore be regarded as having made a positive contribution to the excess returns on the index, as asset selection factors.

Sector factors made a contribution of just under 30% to the index's excess returns. The high weighting of the consumer goods/services sector and the exclusion of financial sectors, as specified in the index's stock selection criteria, made particularly large positive contributions.

Risk index factors made a net contribution of only around 8% because positive contributions were largely offset by negative contributions. Size factors⁵ made a particularly large positive contribution, with the relatively high weighting of small and mid-sized stocks making a positive contribution to the excess returns on the Nomura Japan Equity Growth Potential Index. Low financial leverage made the next largest contribution. It could thus be argued that the exclusion of ultra-large-cap stocks from the index and the fact that the debt ratio is taken into account when assessing companies' potential for

⁵ Among Barra risk index factors, we use "size" and "non-linear size" together as size factors.

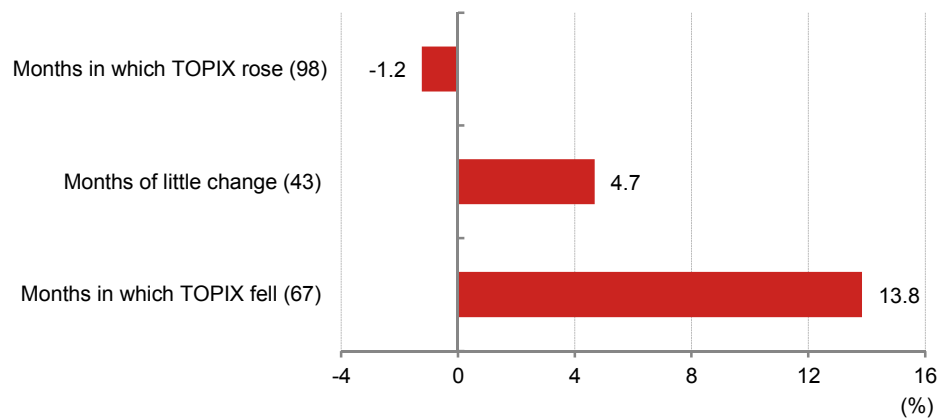
growth, as specified in the stock selection criteria, had a positive effect on index performance.

Index performance by market phase

We will now consider what kind of market phases the Nomura Japan Equity Growth Potential Index is likely to perform well in, and what kind of market phases it is likely to perform poorly in.

Figure 6 shows annualized average monthly excess returns (including dividends) on the Nomura Japan Equity Growth Potential Index versus the TOPIX in the months in which the TOPIX (including dividends) rose, saw little change, and fell.

Fig. 6: Average excess return versus TOPIX, by phase (annualized)



Note: Shows data for September 2001 through December 2018. Figure shows annualized average monthly excess returns (including dividends) on the Nomura Japan Equity Growth Potential Index versus the TOPIX in the months in which the TOPIX (including dividends) rose by 1% or more (months in which TOPIX rose), rose or fell by less than 1% (months of little change), and fell by 1% or more (months in which TOPIX fell). Numbers on the left of the chart in parentheses indicate the number of months in each category.

Source: Nomura

As Figure 6 shows, the Nomura Japan Equity Growth Potential Index saw a particularly strong relative performance in months when the market fell. It also put in a strong relative performance in months when the market saw little change, with no clear decline, but tended to underperform slightly in months when the market was rising. If we look at the data in more detail, we see that, for example, the Nomura Japan Equity Growth Potential Index basically outperformed the market in the period when the market was falling from the second half of 2007 through early 2009, initially on concerns about sub-prime loans in the US and later in response to the collapse of Lehman Brothers. A more recent example of a period when the Nomura Japan Equity Growth Potential Index outperformed the market is the period from early 2016, when the market fell on fears of economic slowdown in China, through to the Brexit vote in June 2016. After this, however, the market recovered and the number of months in which the index underperformed the TOPIX increased further during the Trump rally. The index also underperformed the TOPIX in the period from end-2012 to the formation of the second Abe administration, and at the time when Abenomics was launched.

We think the rules used to select stocks for the Nomura Japan Equity Growth Potential Index have an impact on its performance characteristics.

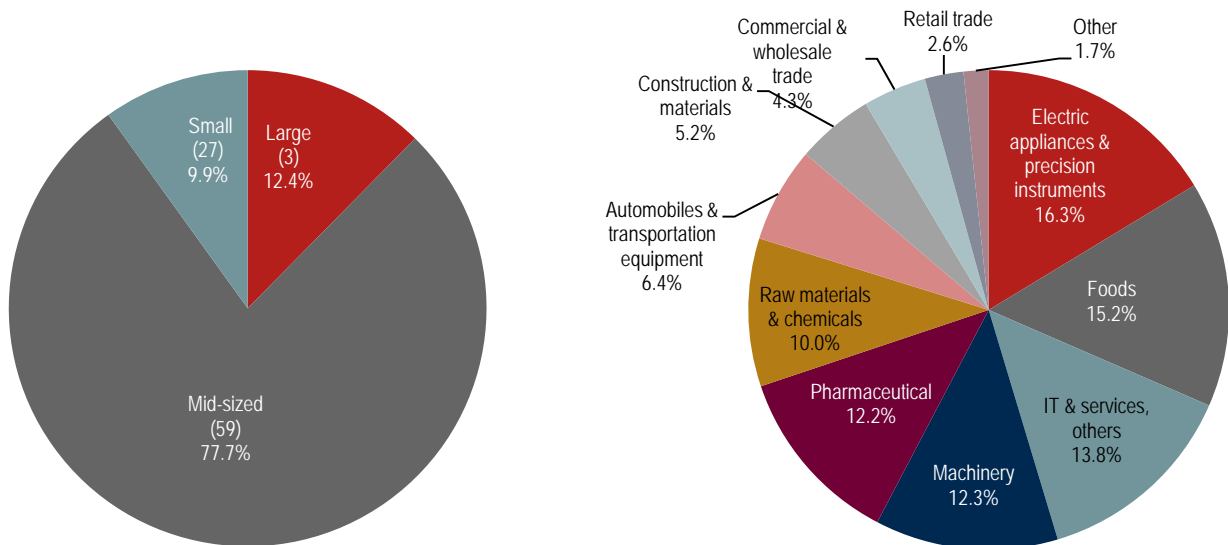
Investors tend to steer clear of stocks with weak financial indicators when the market is falling on concerns about creditworthiness, as was seen at the time of concerns about subprime loans in the US. The stocks selected for the Nomura Japan Equity Growth Potential Index are likely to attract a relatively large degree of attention in the markets because these companies tend to have substantial funds available for use and to be highly financially stable. On the other hand, stocks with a high degree of financial risk are likely to rebound and outperform the index in phases when the market is rising after a credit crisis.

5. Characteristics of stocks selected for the index

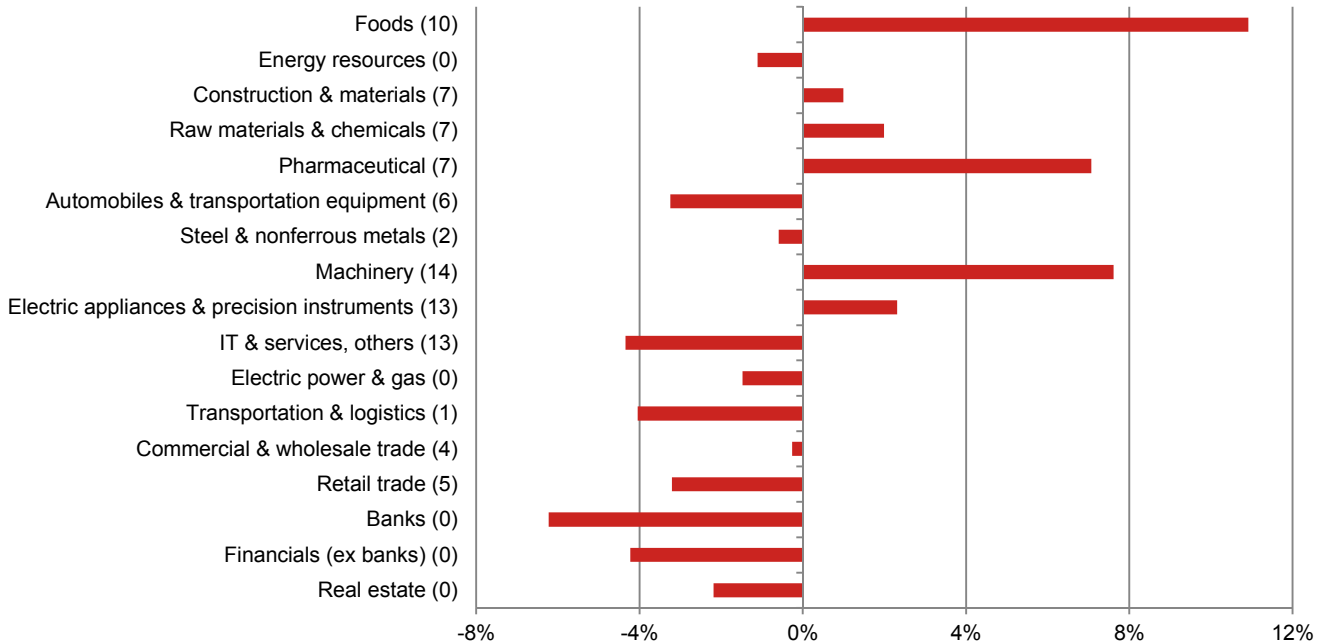
Breakdown of constituent stocks by size and sector

Figure 7 shows the distribution of constituent stocks of the Nomura Japan Equity Growth Potential Index, as of the beginning of September 2018, when the most recent periodic reconstitution was carried out, by both size and sector. This therefore only shows the index's composition at one recent point in time, but the characteristics revealed in the factor analysis of historical excess returns versus the TOPIX set out in Chapter 4 can be seen here too.

Fig. 7: Composition of Nomura Japan Equity Growth Potential Index by size and sector



Active weighting of each sector versus TOPIX



Note: The left- and right-hand pie charts show the weighting of stocks in the Nomura Japan Equity Growth Potential Index by size and by sector, based on TOPIX categories for size and TOPIX 17 sectors. The bar chart underneath the pie charts shows the difference between sector weightings in the Nomura Japan Equity Growth Potential Index and the TOPIX. Numbers to the right of the sector names are the number of stocks from each sector in the Nomura Japan Equity Growth Potential Index. All data are as of the beginning of September 2018.

Source: Nomura

Large-cap stocks (TOPIX 100 stocks) have a low weighting in the index, but the index contains a large number of mid-sized stocks (TOPIX Mid400 stocks). The index's stock selection rules stipulate that all stocks excluding ultra-large-cap stocks (the top 50 stocks in the First Section of the Tokyo Stock Exchange in terms of market cap) may be included in the index, but in practice the stocks that are selected for the index tend to show a greater bias towards mid-sized stocks than the stock selection rules suggest. This bias towards mid-sized stocks, one of the "size factors" introduced in Chapter 4, is in our view likely to make a positive contribution to excess returns on the Nomura Japan Equity Growth Potential Index versus the TOPIX.

The weighting of the various sectors in the index is more evenly balanced, as the right-hand pie chart in Figure 7 shows, but, as the bar chart at the bottom shows, the distribution of sectors within the index differs from that in the TOPIX. The index has higher weightings than the TOPIX in the foods, pharmaceutical, and machinery sectors, and of these three we regard the higher weightings of the foods and pharmaceutical sectors, which correspond to the consumer goods/services sector in the Barra model, as sector factors that are likely to make a positive contribution to excess returns on the index. The Nomura Japan Equity Growth Potential Index is underweight in the financials sector versus the TOPIX because financial stocks are explicitly excluded in the index's stock selection criteria. However, we think this too makes a positive contribution to the excess returns on the index versus the TOPIX.

6. Conclusion

The Nomura Japan Equity Growth Potential Index uses the stock selection criteria set out in Chapter 3 to select stocks that look likely to generate growth. Potential for growth is assessed on the basis of "room for growth" and "abundance of capital", which we see as essential preconditions for growth, but simply meeting these preconditions does not guarantee future growth. The key lies in whether or not companies modify their behavior in a way that enables them to leverage their potential and thus actually achieve growth.

Now that the concept of the responsibilities of stewardship is becoming widely understood, institutional investors can be expected to encourage companies with the potential for growth to take steps aimed at generating this growth, via methods that include engagement, the exercise of their voting rights, and shareholder proposals. For companies that are able to respond to this encouragement from institutional investors, this might help them to tap into their growth potential and achieve actual growth, rather than leaving their potential untapped. Indeed, the Nomura Japan Equity Growth Potential Index started to outperform the market substantially in 2013, and this is around the same time that improving Japanese companies' productivity started to be a key focus of government policy and the role of institutional investors in encouraging corporate growth began to attract attention.

Many institutional investors and companies have already indicated that they agree to the recommendations made in Japan's Stewardship Code and Corporate Governance Code that companies and investors should work together to achieve continuous corporate growth, and we expect this situation to continue to develop. We hope that the Nomura Japan Equity Growth Potential Index will help investors to invest in companies that are likely to achieve growth on the back of this relationship between investors and companies.

Appendix A-1

Analyst Certification

We, Masako Yamamoto and Yasuhiro Shimizu, hereby certify (1) that the views expressed in this Research report accurately reflect our personal views about any or all of the subject securities or issuers referred to in this Research report, (2) no part of our compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this Research report and (3) no part of our compensation is tied to any specific investment banking transactions performed by Nomura Securities International, Inc., Nomura International plc or any other Nomura Group company.

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As at 31 December 2018.

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