日本人の微意識

Application category: High school

Team ID: SL2400486

Team name: Wakaba

School name: Matsumoto Hideho Secondary Education School

Grade: 1st year

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Supervisor: Matsumoto

The economy is the process of [1] producing , [2] distributing, and [3] consuming the goods and services we need in our lives .

Services can be classified as **private goods , which can only be consumed by those who pay for them,** [4] or **public goods , which are provided by the government using taxes or other means .** [5]

2. The main actors of the economy are companies , which are the main actors in production and distribution, **households , which are the main actors in consumption , and the providers of government services and public goo**

The central body of a nation's economy is the government, which coordinates economic activity through various channels, including through the provision of services . [8]

3. Currency includes cash currency such as paper money and coins [9] and currency that is deposited in banks and used as a means of payment through transfers.

[10] There is also deposit currency.

4. The Financial and **Economic** Education Promotion Organization **was established in 2024 with the aim of improving the financial literacy of the public. [11]**

The aim is to provide opportunities nationwide to a wide range of age groups, and to send lecturers and hold seminars at schools and companies.

There are.

5. Which of the following statements about the new NISA that will begin in 2024 is correct? [12] d.

a. The New NISA abolishes the upper limit on annual investment amounts, with the aim of encouraging more active investment of assets.

b. The New NISA has two limits: the monthly "Tsumitate Investment Limit" and the "Growth Investment Limit" which has many eligible products.

Select one of them.

c. Under the New NISA, you can open NISA accounts at multiple financial institutions.

d) Anyone aged 18 or over can open a New NISA account without parental consent.

6. As Japan's population continues to decline, organizations made up of people with diverse perspectives, such as gender, age, language, and religion, are stronger.

[13] The importance of diversity in **the workplace has been highlighted.**

7. The Regional Comprehensive Economic Partnership (RCEP), signed in 2020, is a multilateral trade agreement between East Asian countries, including Japan, China, and South Korea.

[14] It is the world's largest free trade area, with 15 **member countries accounting for approximately 30% of the world's population and GDP.[15]**

8. Which of the following statements about the progress of globalization is correct? [16] d.

a. Trade liberalization and the entry of cheap imports into the country are beneficial for both consumers and domestic producers.

become.

b. The impact of the progress of globalization is not so noticeable in areas other than the economy.

c. The Trans-Pacific Partnership (TPP) is a free trade agreement.

d. Looking at Japan's international balance of payments in recent years, the "primary income balance" has recorded a large surplus.

9. Which of the following is the correct combination to describe the Japanese economy? [17] c.

From around 2022, the interest rate differential between Japan and the United States widened, and the trend of buying dollars and selling yen became dominant, leading to [ÿ]. As a result, export com

Industrial performance has risen. Meanwhile, the prices of imported goods have risen. Consumer prices have risen. On the other hand, real wages have risen.

a. ÿ Strong yen -- ÿ Better -- ÿ Rise -- ÿ Rise -- ÿ Fall

b. ÿ Strong yen -- ÿ Worsening -- ÿ Falling -- ÿ Falling -- ÿ Rising

c. ÿ Weak yen -- ÿ Improvement -- ÿ Increase -- ÿ Increase -- ÿ Decrease

d. ÿ Weak yen -- ÿ Worsening -- ÿ Falling -- ÿ Falling -- ÿ Rising

10. Of the 17 Sustainable Development Goals (SDGs), which one is most closely related to the investment theme that the Group has set this time?

Please list your reasons (up to three) and explain your reasons.

Closely related SDG Goal 2: Zero	The main reasons are
Hunger 	Microbial foods use raw materials without waste and are more nutritious than conventional foods thanks to fermentation technolo The nutritional value of protein has increased. This is why there is a global protein crisis. We believe that this will be able to solve the problem of hunger, especially in resource-limited areas.
13. Take concrete action against climate change 	In the manufacturing process of microbial food, greenhouse gases such as cow burps are emitted, It reduces the environmental impact of livestock, such as soil and water pollution, and is more energy efficient than conventional me It is believed that this will contribute to climate change countermeasures by saving gas and water
15. Protect the abundance of land 	resources. By adding microbial foods as a means of securing protein, it will be possible to reduce excess land use. This will reduce the use of chemical fertilizers and pesticides in agriculture and farming.

11. Which of the following is the correct combination of the three factors that are important in "ESG investment"? [18] b.

Economy — Science — Growth

b. Environment — Society — Corporate Governance

c. Efficiency — Sustainability — Corporate Governance

12. The largest stock exchange in Japan is the Tokyo Stock Exchange (TSE), but there are also other exchanges such as [19] Nagoya , [20] Sapporo , and [21] Fukuoka.

There is a local stock exchange in Oka , which serves to support the local economy and local businesses.

13. There are three important ways to reduce investment risk: long term, diversification, and regular savings .

[23] By dividing assets , [24] regions , and [25] time, you can expect stable profits.

14. Which of the following statements about "accumulation investment" is incorrect? [26] c.

a. Accumulation investment is a method of investment in which financial products such as stocks are purchased on a regular basis.

b. There are two types of installment investment: fixed amount purchase and fixed amount purchase.

c. Accumulative investment is a method of investment in which the principal is guaranteed.

d. Dollar-cost averaging allows you to buy fewer shares when prices are high, but more shares when prices fall.

This will increase the number of units, reducing the average purchase price.

15. Which of the following financial statements indicates how much profit a company is making in relation to its capital, and the higher the figure, the more efficient the business is?

Which is the performance indicator? [27] aÿ ROE

a. ROE b. Equity ratio c. Net income d. P.E.R.

Abstract In recent years, the problem of the “protein crisis” has been attracting attention around the world. Protein is essential
However, due to the global population increase and economic development in developing countries, it is expected that there wi
It is said that a "protein crisis" will occur, in which the supply of protein cannot keep up with demand.

Currently, in order to solve this problem, many technologies are being developed around the world to produce protein without using livestock farmi
They are trying to find alternatives to meat. However, awareness of this is still low in Japan.
We have focused on microbial foods, which we believe have great potential in the long term.

Four microorganisms: "mycoprotein," "microalgae," and "microorganisms that use CO2 as a carbon source (such as Solein).'
Define biological foods as "PSMiM" and write a report on the theme of "Solving the protein crisis with PSMiM"

The company decided to establish and invest in the

Hearings and food tech conferences with people from start-ups, large corporations, educational institutions, and securities compa
Through participating in events and conducting awareness surveys, we have gained a realistic understanding of PSMiM.
We screen companies in Japan that can contribute to solving the issues of PSMiM and create a portfolio.
This report summarizes the entire process.

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Cover illustration: Hanaoka

1 Deciding on investment themes

A protein crisis is a term that refers to a collapse in the balance between the supply and demand of protein for the population, and is likely to occur in the nea

The demand for animal protein is increasing due to population growth, economic development in developing countries, and changes in dietary habits (Westernization and meat-eating) accompanying improved living

The demand for food is expected to increase sharply, and it is said that there will be a shortage of food supplies by 2050. Today, we mainly consume food from animal sources such as meat, dairy products, a

People who rely heavily on meat for protein and believe that increasing meat production is the answer to the protein crisis

But the problem is not that simple. Meat production has many challenges. It contributes to global warming through greenhouse gas emissions.

Examples include the destruction of forests and depletion of water resources due to the large amount of water and land required for livestock farming. Other examples include animal welfare and infectious

The issues facing the livestock industry include the risk of infectious diseases, hygiene in meat processing, ensuring safety during distribution, a lack of successors to livestock farms, and econo

Therefore, there is a need for a sustainable supply of protein to ensure an amount of protein that can support a growing population.

Recently, meat substitutes have been attracting attention as a solution to the protein crisis. For example, meat substitutes made from soybeans and wheat are being developed to reduce the protein contained

"Plant-based protein" is extracted using a unique method, and "Precision fermentation" is used to create proteins using microorganisms.

*, "cultured meat" made from animal cells, and "edible insects" that have low feed load and greenhouse gas emissions.

Although there are pros and cons to both, they all share issues in common, such as issues with taste, price, and productivity compared to existing meats.

With this in mind, we decided to focus on "precise fermentation," which shocked us the most.

This technology is to create proteins from microorganisms. Compared to the three alternative proteins mentioned above, it has no major drawbacks other than taste, price, and pro

Through repeated research and interviews about precision fermentation, we have come to understand that precision fermentation is one type of "microbial food" and that it is a method for producing food using micro

I learned that there is another food that could help solve the protein crisis: mycoprotein.

"Microalgae" and "Microorganisms themselves (such as Solein) that use CO2 as a carbon source."

We decided to call all these microbial foods PSMiM. PSMiM is a growing field, and production is

There are not many Japanese companies involved in this field, so we will support companies that can help solve the issues of PSMiM through investment.

We will explore PSMiM, consider the issues that need to be resolved and the measures to be taken, and what companies to invest in, and present a report on "Protein synthesis with P

We decided to create reports and make investments on the theme of "Solving the Quality

Crisis." * In recent years, technology for producing milk proteins, egg proteins, and sweet proteins has been attracting attention. In this paper, these are also referred to as precis

2 Current status and challenges of PSMiM

2-1 | Theme exploration

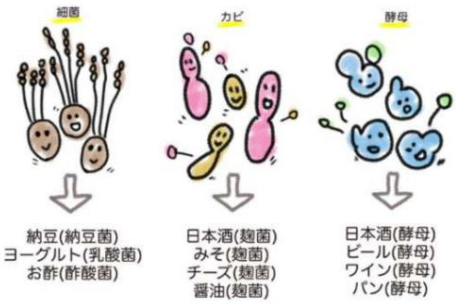
The following information includes what we researched as well as what we were told during interviews.

1. What are microorganisms?

Microorganisms are organisms that cannot be seen with the naked eye or observed in detail.

A general term for organisms that can be seen through a microscope.

They are divided into three groups: bacteria, mold, and yeast.



Source: Sake-sen Yamamoto Co., Ltd.

2. What is microbial food?

This refers to food produced by the action of microorganisms on food, or food that contains microorganisms.

This process is called "fermentation," and microorganisms such as lactic acid bacteria, natto bacteria, koji mold, and yeast help in food production.

Microorganisms can generate large amounts of biomass in a short period of time. For example, yeasts and bacteria can rapidly use organic matter to

Therefore, food production using microorganisms is more efficient and has a lower environmental impact than animal-based foods.

In addition, the production of animal protein requires large amounts of water, energy, and feed, but microorganisms can minimize these resources.

For example, microorganisms grow primarily using sugar as a raw material for fermentation, which is essential for the production of agricultural crops and anim

It can produce protein in a small space without using a large amount of land. It also reduces the amount of methane and other emissions that are generated during the production of animal-bas

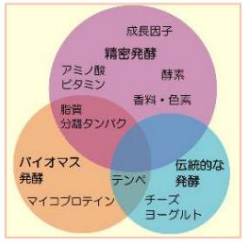
Greenhouse gases such as carbon dioxide cause global warming, but protein production using microorganisms minimizes these effects.

In addition, some microorganisms can assimilate methane and carbon dioxide and create proteins.

3. Definitions of each microbial food

Because this is a new field, it is difficult to clearly define which products fall into which categories.

The diagram on the right shows the current general perception, but it is not rare for different people to have different perceptions.



Created by the author from the Good Food Institute 2022 Industry Trends Report
Summary: Plant-Based Foods, Fermentation-Derived Foods, and Cell-Based Foods

4. Microbial foods that we are paying attention to

As mentioned above, "microbial foods" refers to a broad field. Therefore, we will study the trends of each company through research, interviews with companies, and

Through our analysis, we selected four microbial foods that meet the ultimate goal of "solving the protein crisis," and named them PSMiM.

ÿ Foods produced by precision fermentation ÿ Mycoprotein ÿ Microalgae ÿ Microorganisms that use COÿ as a carbon source (Solein, etc.)

5-1 Foods produced through precision fermentation

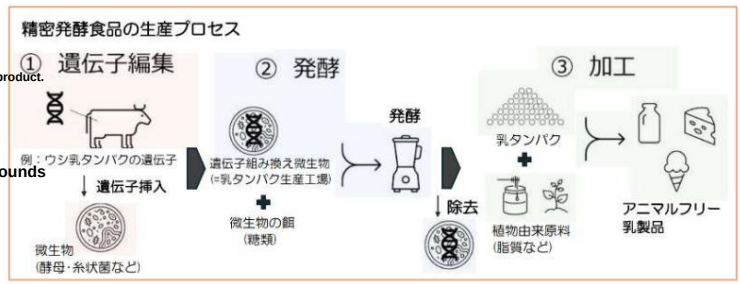
Precision fermentation is the process of using microorganisms with specific genes inserted into them to produce the desired product.

Targeted food ingredients (proteins, lipids, flavors, sweeteners, functional

Responding to food crises and environmental issues with technology to generate bio-organic compounds

It is attracting attention as a new food production technology.

Removes recombinant microorganisms and utilizes only pure ingredients.



"What is the next-generation food production technology, 'precision fermentation'? --Industry unity accelerates market developme

Created by the author from

Advantages (points)

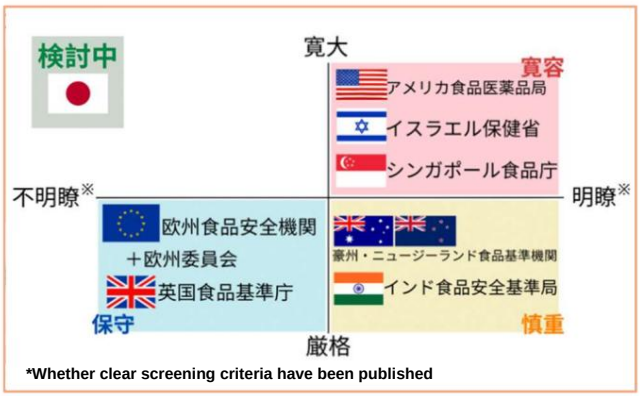
- In theory, any protein can be made as long as the gene sequence that codes for the protein you want to make is known.
- The produced proteins can be used to create dairy and egg substitute products that are similar to the real thing.
- The amount of resources such as water, land, and feed required for production is overwhelmingly smaller than that of existing foods, so the environmental impact is small.
- It is less susceptible to external factors such as infectious diseases and weather, so supply is stable and the risk of price fluctuations is small.
- Because it is animal-free, it can be consumed by a wider range of consumers, including vegetarians, and animal welfare issues can be avoided.

Specific issues (disadvantages)

•There are issues with customer value, and the industry structure has not yet been transformed. As GMOs are used, there are also issues with production facilities and approval

- Each country has its own regulations regarding food safety, which act as a barrier to market development.

Regulatory status of each country



*Whether clear screening criteria have been published

ÿ What is the next-generation food production technology "precision fermentation"?

Created by the author with some additions based on "Accelerating Market Development"

Each country sets its own regulations regarding the safety of foods that people have never eaten befo

Pre-sales review is being conducted, but differences in regulations affect the progress of market development in each coun

The US Food and Drug Administration (FDA) has a relatively lenient review process.

In contrast, the European Food Safety Authority (EFSA)

The assessment by the Food and Agriculture Organization is strict.

In accordance with the 30 by 30 target,17 the government

has been actively promoting the commercialization of foods that have never been eaten before, ar

There are many approved cases. The country is small and large-scale food production is not possibl

This is one of the reasons why there are many approval cases.

This creates a barrier to market entry.

Precision fermentation is primarily used in vegan foods and to produce high-added-value ingredients.

Case study: Animal-free dairy products using ÿ-lactoglobulin

Dairy farming is a process that involves water usage, energy consumption, and greenhouse gas emissions.

Perfect Day (USA) is developing a ÿ-lactamase using genetically modified filamentous fungi.

He developed a variety of animal-based foods, including milk, cheese, and ice cream.

According to the company's life cycle assessment results, this ÿ-

By using lactoglobulin, water usage is reduced by 96-99% compared to conventional raw milk.

It is said that it can reduce energy demand by 29-60% and greenhouse gas emissions by up to 97%.

Source: Perfect Day HP

Case study: Development of precision fermented casein

In August 2024, New Culture (USA) became the first in the world to receive GRAS self-affirmation status for precision fermented casein.

This is a new product developed by New Culture that uses animal-free casein in combination with other food ingredients.

Similarly, this means that it can be used, sold, and consumed in the United States.

Casein is the main protein in milk, accounting for about 80% of the total protein.

Casein is used in foods and is an important component in cheese making. It also aids in muscle repair.

It is also widely used in protein powders and supplements.

Source: New Culture HP

It is also used in medical preparations. For example, the membrane-like properties of casein can be used to increase the sustained release of drugs.

It is also used in the manufacture of paints, coatings and plastics and is an important raw material in the chemical industry.

Case study: Solution to the taste and nutritional issues of plant-based foods

When we explored the topic of "plant-based meat substitutes" at last year's Nikkei STOCK League, the "flavor and juiciness of meat" was the most popular feature of plant-based meat sub

The Mediterranean Food Lab in Israel has been investigating the effects of microorganisms on the decomposition of plant residues.

The amino acids that are produced in the meat and the vitamins and minerals that are produced during the decomposition process are used as seasonings, and natural seasonings such as meat extract are added to

It is made entirely from plants, without using any bones or meat.

In addition to plant-based meat substitutes, plant-based milk substitutes (plant-based milk) have already formed a large market.

There are various dairy alternatives using vegetable proteins such as oats, etc., and precision fermentation has the potential to add high nutritional value to these p

Until now, ÿ-lactoglobulin and casein could only be obtained from animal milk.

It is necessary for absorbing calcium, and ÿ-lactoglobulin is also good for improving human resistance.

By adding casein and ÿ-lactoglobulin, you can consume the same functional ingredients as animal milk.

5-2 Mycoprotein

Mycoprotein is an edible mycelium and protein obtained by fermentation using fungi.

It is attracting attention as an alternative to animal protein because it is low in calories and has very high nutritional value.

Mycelium is made of intertwined fibers, so it is easier to digest than common vegetable protein materials such as soybeans.

The texture of the mushrooms is chewy and gives the dish a texture similar to that of meat.

It is expected to contribute to improving the flavor of physical protein foods. Foods using mycoprotein

The most well-known product is Quorn Foods (UK), which has been selling it since 1985.

Currently, the company has an annual production capacity of approximately 40,000 tons.

ÿ Source: Mycorena HP ÿ
Quorn's mycoprotein Source: GIGAZINE

Advantages (points)

- It grows quickly and has a low environmental impact.

•Contains a good balance of necessary amino acids. It contains more protein than eggs, tofu, etc., and is more effective than other alternative proteins.

It is a highly nutritious protein that is also rich in dietary fiber. Quorn's products are well known worldwide.

Specific issues (disadvantages)

•It may be an allergen for certain people (this is becoming more apparent because it is so widely used). Labeling seems difficult.

Ingredients are limited to proteins and other nutrients that fungi can form naturally, and there are certain restrictions on products made with them.

In theory, it is possible to produce it using food residues as a nutritional source, but this is considered a risky method due to the high risk of contamination.

It is recognized as such.

Case study: Development of mycoprotein made from rice and rice koji

Otafuku Brewery Co., Ltd., Green Earth Institute Co., Ltd., Agro Ludens Co., Ltd., XPJP Co., Ltd., and Otafuku Sauce Co., Ltd. Co., Ltd. is engaged in the development of the manufacturing process for "mycoprotein" and A development contract was signed to develop demand and sales outlets. Extracted from rice The aim is to develop a manufacturing method to produce mycoprotein by solid-state cultivation of koji mold using the extracted proteins.

ÿSource: Otafuku Brewery Co., Ltd.

5-3 Microalgae (autotrophs)

Microalgae are algae that are difficult to distinguish with the naked eye. Microalgae contain carbohydrates, proteins, and other substances in their bodies.

Source: Euglena

It contains nutrients, minerals, dietary fiber, and lipids, and the protein content is 35% to 68% by dry weight.

It is said to be on par with meat. Currently, there are many kinds of phytoalexins, such as Haematococcus, Euglena (green algae), Spirulina, Chlorella,

Dunaliella and other crops are being commercialized. These are more sustainable and limited than traditional protein sources.

This allows for efficient use of available resources.

Advantages (points)

•Good amino acid balance. Also has an image of being good for the environment.

- It is rich in essential amino acids and is considered a sustainable alternative to traditional animal and plant proteins.

- Not limited to food, it is expected that it will be used in many areas such as food, health, the environment, and industry (biofuel, fishery feed, environmental purification, colorin

- It grows quickly and can be produced efficiently in a short period of time.

-Because they are single-celled organisms, each cell contains the nutrients necessary for survival.

Specific issues (disadvantages)

- There are geographical and climatic limitations at the productivity stage, and it seems difficult to make it a universal food source with current technology.

- Producing only food-grade proteins is cost prohibitive.

- Costs are high unless mass production is done.

Case study: Producing DHA without reducing fish consumption

AlgaleX Co., Ltd. produces awamori using a technology that mass-ferments algae and microorganisms that contain active ingredients.

A look at the exhibition at SKSJAPAN2024 and rice topped with delicious seaweed dashi soy sauce (photographed by author) ÿ

"Uma-mo" is made by fermenting algae from the residue of fish, and produces the same nutrients (DHA and protein) as fish.

In addition, awamori lees are a so-called unused food, which contributes to reducing food waste.

is.

5-4 Solein

Solein is a process that provides hydrogen, carbon dioxide, and minerals to microorganisms, allowing them to grow and function in the body.

Source: Solar Foods website

This protein is made from organic matter accumulated in the soil. It was developed by Solar Foods in Finland.

In this process, electricity is used to split water, producing hydrogen and oxygen.

They use the energy generated to fix carbon dioxide and convert it into organic compounds, including proteins.

Normally, sugars are used as a nutrient source when microorganisms ferment to produce proteins.

However, CO2 is used to produce Solein.

Advantages (points)

It is sustainable because it uses significantly less land and water than traditional agriculture, is not dependent on natural resources, and uses renewable en

This is a possible method for producing proteins.

- Because raw material costs are low, it could theoretically be a cheap production method.

Specific issues (disadvantages)

•COÿ is electrochemically decomposed to produce hydrogen, and bacteria that eat it are then cultivated, requiring electricity to decompose the COÿ.

•Manufacturing speed is slow. Other issues include the lack of industrial facilities and infrastructure to handle raw materials.

Case study: Solein products sold exclusively in Singapore

Ajinomoto Co., Inc. is selling two products using Solein, mooncakes and ice cream sandwiches, at a shopping center in Singapore.

The product will be sold for a limited time at the company's pop-up store, which will be opened in Tokyo. After the limited sale, the company will make it easier for consumers to try the product.

The company plans to gradually expand its categories from sweets to everyday meals.

The company also plans to expand into other countries and regions outside of Singapore, while also considering expanding its stores.

Mooncakes made with Solein Source: Foove

2-2 | Hearing

In order to build a portfolio that is directly linked to solving the protein crisis in PSMiM, with a limited number of stocks (20 stocks),

We need to understand the current status of PSMiM and identify the issues that need to be resolved.

The PSMiM cases learned from the interviews have already been reflected in the "Exploring the Theme," so they will not be included here.

ÿSMBC Nikko Securities Matsumoto

Branch Interview format: Company visit

Date of implementation: Monday, July 22, 2024

Person in charge: Branch Manager Kenta Saikawa / FC Manager

NO IMAGE

Kaname Michibata Reason (purpose): To improve knowledge of stock investment. We will have an explanation of Nikkei Asia300 and food-related investment methods.

Nikkei Asia300 stocks and sectors to watch

Among the Nikkei Asia300, companies in the "information technology" and "finance" sectors account for approximately 45% of the total, while the "daily essentials" sector, which includes food companies, accounts for approximately 10%

Only about 3% of the companies in the "research equipment" sector make up the Nikkei Asia300.

It may be a good idea to focus on the current situation in

Japan during the food crisis.

There are countries overseas (such as the United States) that can produce so much food domestically that they can export it, but Japan's exports are only 4%.

Therefore, when food imports become impossible, while some countries can produce food domestically for two to three years, Japan will have to meet its food needs within two to three

In addition, since 60% of the world's population is in Asia, the food crisis is more serious in Japan (Asia).

Long-term investment is best. Also, because growth areas are high-risk, dollar-cost averaging is a good option, as it can turn market declines into opportunities.

(*The "risk" in investment includes not only a sudden fall in stock prices but also a sudden rise.)

What is Modern Portfolio Theory?

"In order to achieve a certain level of profit while minimizing risk, it is effective to diversify investments across many stocks."

Use it for portfolio construction and screening ÿ1 (ÿ described in investment policy and management method) For the

above reasons, we will make installment investments using the dollar cost averaging method. In addition, based on modern portfolio theory, we will increase the number of st

Therefore, it is important to diversify your investments.

I was introduced to JETRO through a school program for English language training, and I thought they had a good grasp of various markets and companies around the

We requested a consultation.

ÿ Japan External Trade Organization (JETRO)

Interview format: Zoom

Date: Wednesday, July 24, 2024 Personnel in

charge: Toyama Kaho, Startup Division, Innovation Department / Naoe Ayataro, Strategic Planning Division, Agriculture, Forestry, Fisheries

and Food Department Reason (purpose): To hear about global food trends, the market size of PSMiM, and companies involved in PSMiM in Japan.

Food trends overseas

A negative image has been created about plant-based alternative foods. Although they are not animal-based, they contain a large amount of additives and are harmful to the enviro

Given the burden on the environment, the cost and time it takes, some people, especially overseas, are questioning whether this is really sustainable.

In this way, we are now in an era where we need to look more deeply at the impact on social issues and invest accordingly.

ÿAdvice on how to proceed with research activities

It is important to participate in events to expand your network, hear the real voices of various companies, and be brave and send an email.

We should deepen our knowledge through active fieldwork. We are looking forward to SKSJAPAN2024 as a forum for food tech professionals in Japan.

Participation is encouraged.

Use this in portfolio construction and screening *2 (Measures are listed in the third screening)

Investors are now asking themselves, "Is it really sustainable?" and considering solutions to social issues in addition to profits when making investment

Therefore, instead of a portfolio that is biased toward either profit or problem-solving, we should create a portfolio that satisfies both.

Specifically, when screening, we need to look for companies that are not just focused on profits, but also on solving social issues.

We will incorporate indicators that will leave a positive impression and give them higher scores.

In order to make investments that will lead to problem solving, it is necessary to devise screening indicators.

However, because the topic is a new field,

The above information is still scarce, and even if we find websites or papers, the content is often too technical to understand.

I felt that there was a limit to how much correct knowledge I could obtain through force alone. Therefore, I interviewed people who were knowledgeable about PSMiM to deepen my know

First, I asked someone who had written an easy-to-understand article on precision fermentation to interview me.

ÿBeyond Next Ventures Inc. Interview format: Zoom

Date: Saturday, August 31, 2024 Person in charge: Partner Akisumi Arima

NO IMAGE

Reason for taking part (purpose): To gain correct knowledge about PSMiM. Also, to learn about examples of PSMiM being commercialized.

Lessons learned: Japanese people tend to be resistant to new things and artificial things. Also, compared to Westerners, Japanese people

In reality, there is a relatively low awareness and sense of crisis about food crises and environmental issues, and there are still very few people who are willing to contribute to solving these

There is a tendency that

In an interview with Beyond Next Ventures, Inc., it was revealed that food tech pioneers such as Singapore receive support from their governments

I learned that the support is very generous. Also, in the food industry, it is very difficult for one company to sell a new product on its own, so the cooperation of various companies and organizations is very

Therefore, I visited a representative food tech company to ask about the current situation of Japan's support and the reasons for it.

We requested a hearing with the Food Tech Public-Private Council, a leading organization.

ÿ Foodtech Public-Private Council (interview with Ministry of Agriculture, Forestry and Fisheries officials) Interview format: Teams Date: Monday, September 30, 2024

NO IMAGE

Person in charge: Ministry of Agriculture, Forestry and Fisheries, Minister's Secretariat, New Business and Food Industry Department, New Business and International Group, New Business Creation Planning Team

Mr. Kazuki Yoshida and Ms. Mariko Murakami

Reason for implementation (purpose): To find out the status of support by the government (Ministry of Agriculture, Forestry and Fisheries), which is in a position to support companies, and the rea

To learn about the Dotech Public-Private Council, and to clear up any questions Mr. Arima had after his interview.

About the Foodtech Public-Private Council

The Foodtech Public-Private Council is an organization established by the Ministry of Agriculture, Forestry and Fisheries, and provides a forum for industry, government and academia to collaborate and develop new

It was created with the aim of boosting the food tech sector and increasing support and co-creation for startups and companies.

Because this is a complex field, for example, if a new microbial food product is to be released to the world, it will require the cooperation of companies in various fields, including production, cultivation, equipment, packaging,

The power of industry is needed. Many private companies are involved.

Why Food Tech and PSMiM are not growing much in Japan

Japanese people are not very accepting of new foods, and new foods such as PSMiM are not very receptive to them.

There are many reasons for this, but one of them may be the abundance of food options available. Even with rising inflation, we are able to enjoy tasty and safe f

Since they are available at low cost, there is no need to try new foods. Therefore, first try new foods that you already have.

The new food has to taste as good as existing food. Another problem is that new food is not well known.

There are not many reports or special features on this topic. In order to raise awareness and awareness among a wide range of generations, the relatively popular alternative protein "plant

It may be a good idea to have them try "meat and plant-based foods" to raise awareness of new foods.

In order to attract customers, two things are essential: "affordable price" and "deliciousness". Japanese food companies are trying to enter the overseas market before selling in the Japanes

There are also tech companies.

Government activities to improve public awareness and consciousness

As for PSMiM, there are still very few opportunities to eat it in Japan, and even if we gain a deeper understanding of it,

However, research and development of genome-edited foods and other products that are already on the market is progressing,

We hold seminars and lectures.

Prioritizing "Establishing consumer

understanding" In order to popularize food tech in Japan, it is necessary to create a new market, and for that, consumer understanding is essential.

The Ministry of Agriculture, Forestry and Fisheries has been comparing efforts to address these issues across the agriculture, forestry and fisheries sector (primary industry) and the food industry, and has been prioritizing the

Although the rankings cannot be compared simply, currently, efforts to understand consumers are not being made sufficiently, and it is unclear what methods are appropriate.

We need to carefully consider this and tackle it appropriately.

Lessons learned: To solve the protein crisis at PSMiM, we need to explore new foods while ensuring that they are both affordable and delicious.

It is necessary to eliminate consumer resistance and raise awareness of food tech.

In order to invest in stocks that will help solve the problems of PSMiM, it is important to listen to the voices of actual companies, not just information on the Internet.

I thought I needed to hear more and learn more about the current situation. So I decided to work with JETRO and Beyond Next Ventures Co., Ltd.

I decided to participate in SKSJAPAN2024, which I heard about during the interview. SKSJAPAN is the largest food tech event in Japan.

The event will bring together a variety of food tech players, from large corporations to startups, so you can hear the "real voices of companies."

In addition, you can learn about the types of companies involved in food tech and learn about them through sessions and exhibitions.

In order to achieve results at SKSJAPAN2024 that will make you feel that it was worth participating,

We believe that we should approach SKSJAPAN2024 with as many doubts as possible resolved, and so we have decided to hold a meeting with SKSJAPAN2024 organi

We interviewed UnlocX and the biology teachers at our school.

ÿUnlocX Inc.

Interview format: Teams

Date: Saturday, October 12, 2024 Person in charge:

Director and Co-Founder Tomoyuki Sumi Reason

NO IMAGE

(purpose): To resolve questions regarding participation in SKSJAPAN2024. The main focus was to ask questions about PSMiM and to gain experience in PSMiM.

We will also ask questions about the companies that are involved or supported.

Differences in perspective between private companies and the Ministry of Agriculture, Forestry and Fisheries: Should food tech or solving problems in the primary industry be prioritized?

The Ministry of Agriculture, Forestry and Fisheries is strongly influenced by agricultural cooperatives. The Minister of Agriculture, Forestry and Fisheries is also a member of the Diet, so due to the relationship with the electoral support base, he is doing his best for the cu

The truth is that the private sector is spending money and cannot support new values that conflict with the interests of agricultural cooperatives.

However, a problem unique to Japan is that prices are too low. Japanese people are very sensitive to food prices.

Because of this, people are reluctant to buy new products because they think that they are "highly functional but also expensive."

Another issue is that even if food companies produce food, it is difficult to get it on the shelves of

distributors, and it does not line up in stores. Why is food tech not growing in Japan? ~ Western-specific thinking ~

"Making real food taste better" is also part of food tech, so rather than the food tech sector not growing,

The truth is that new foods such as cheese are not growing. The reason for this is the low level of awareness among Japanese people, but there is also a difference in thinking between the West and J

In the West, "buying environmentally friendly food and feeling that you are directly contributing to the environment expresses your identity."

There are a certain number of people who think like this. With new foods such as plant-based foods, people who think like this are likely to say, "I'm not going to eat them, even if they're n

On the other hand, the needs of purchasing behavior that prioritizes environmental considerations are being fully met, and many consumers want food that tastes good.

Market growth for meat alternatives in the U.S. has stagnated or is in a slow decline as consumers are less willing to buy meat alternatives.

Lessons learned: There is a difference in how the Ministry of Agriculture, Forestry and Fisheries and private companies perceive it. In Japan, in particular, consumers perceive it as "highly functional but also expe

Since it is difficult to insert, the price issue still needs to be resolved.

ÿ Matsumoto Shuho Secondary School Biology

Teacher Interview format: Face-to-face

Date: Monday, October 21, 2024 Person in

charge: Dr. Kazuyuki Takasu

Reason (purpose): To clear up doubts in preparation for participating in SKSJAPAN2024. About the difference between algae and microalgae and mycoprotein

Ask questions and clarify.

What I learned: Algae are different from land plants and refer to seaweed such as wakame seaweed. Microscopic ones are called microalgae, and phytoplankton ar

Includes.

Through the interviews so far, I have been able to learn detailed knowledge about PSMiM, its current situation, and case studies.

What are the issues that cannot be resolved? What stocks should be invested in to resolve those issues?

I would like to think about this in detail.

From past interviews, I thought that the most important issue was the "low awareness of Japanese people," and I came up with a hypothesis.

We decided to request a hearing from the media, whose role it is to convey information to the public.

Hypothesis: The biggest challenge in solving the protein crisis in PSMiM is the lack of awareness among Japanese people.

Unless this change of awareness occurs, we will be unable to accept any particular artifacts, regardless of their preconceptions.

Even if such a tasty and safe PSMiM were developed, would it never become popular?

ÿ Nikkei BP Nikkei Cross Trend

Hearing Format: Teams Date: Tuesday, October 22, 2024

NO IMAGE

Person in charge: Tetsuo Katsumata, Editor-in-Chief of Nikkei Cross Trends

Reason for the event (purpose): To hear the opinions of media personnel on the topic of raising awareness of new foods such as PSMiM in Japan.

The protein crisis and new food awareness among Japanese people

Westerners tend to have high awareness, but Japanese people's awareness is not abnormally low. Also, because the original food culture is different,

It is not necessarily right to have the same level of awareness as other countries. In developing plant-based proteins,

Not only do we create plant-based meat substitutes, but we also manufacture and sell hybrids that use half real meat and half plant-based alternatives.

As a result, the amount of real meat used was halved (a big advantage) and the actual consumption

It is not necessary to have 100% alternative foods, there is also the option of taking "steps".

are looking for something that consumers will accept, so perhaps it would be better to set goals that are unique to Japan.

How will PSMiM take hold in Japan?

For example, microalgae have the great advantage of being non-allergenic in terms of "resistance to artificial things," so they are widely used in nature.

It is thought that.

The background and trigger for the acceptance of meat alternatives overseas

As the SDGs spread, the importance of plant-based meat substitutes has been recognized, adding another option to meat-eating culture.

The technology for making meat has improved and it has developed into a growing industry.

Due to the large number of xitarians and the large amount of investment in food innovation, meat substitutes were developed quickly.

It seems that this was accepted by the

What I learned and what I thought

It is true that Japanese people have low awareness, but the hypothesis is that "the low awareness of Japanese people is the biggest problem" and "No matter how delicious and safe PSMiM i

I realized that I have a biased view that "even if something is developed, it will not spread." Also, I know about it, but I don't want to contribute.

It was found that the problem lies in the lack of awareness of the "protein crisis," rather than simply the lack of awareness.

ÿ Nikkei BP Nikkei ESG

Interview Format: Zoom Date: Wednesday, October 23, 2024

Person in charge: Ms. Baba Miki, Editor-in-Chief of

Nikkei ESG Reason (purpose): To learn about the media's thoughts and current activities regarding the low level of awareness and consciousness among Japanese people

If Japanese people's awareness of the protein crisis changes and people's behavior changes, the stock price movements that will be felt

Since changes in people's behavior tend to occur slowly, it is unlikely that stock prices will react sensitively to them.

Investment is made only when it is deemed worthwhile to invest in a new business, taking into account its future prospects.

Stock prices do not move significantly immediately after a stock is purchased. Also, stock prices tend to fluctuate frequently in areas where investment is made from a short-term perspective, but the

Because the food industry is a long-term growth sector, sudden, large fluctuations in stock prices are unlikely to occur.

About the PSMiM Challenges

"PSMiM" and "genetically modified foods" are technologically created.

The way in which these foods were produced is not widely known or understood.

It is often difficult to find the product, which makes people hesitate to buy it.

As shown in the figure on the right, plant-based foods are

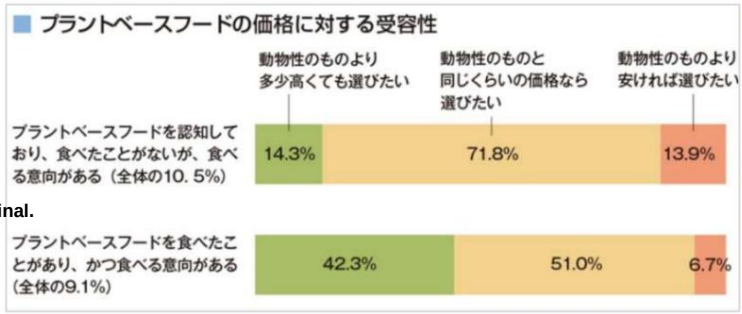
70% of people answered that they would choose it if it was the same price as the original.

Therefore, "improvement of taste" and "production cost (sales price)"

"Price issues," "Communicating how it is made," "Purchase

We are passionate about spreading the good that comes from joining the world.

The challenge is to "make this happen."



ÿ Survey by the General Incorporated Association Plant Based Lifestyle Lab (Source: Nikkei Business)

How will PSMiM take hold in Japan?

Japanese food companies are also starting to develop soy-based foods.

It is possible that the practice will take root after the fact. For the time being, it is better for Japanese industries to wait and see, and then realize the seriousness of the situation and follow other

As foreign food companies are aware of the protein crisis, Japanese companies will likely follow suit.

What I learned: I learned that in addition to "awareness of the protein crisis," the issues of "tastiness" and "productivity" are also important.

The hypothesis turned out to be wrong in many ways. Since this is a portfolio for solving problems, it is necessary to assume

It is necessary to understand PSMiM in more depth and to identify the real issues before investing in stocks.

The goals for SKSJAPAN2024 have been set as follows:

SKSJAPAN2024 Goals

Identifying the real challenges to solving the protein crisis with PSMiM. Talking with many companies

This was a chance to talk to each company, listen to their initiatives and thoughts, and write a report.

I will get hints for my future success. I will also make many connections for the future.

ÿSKSJAPAN2024

Event period: Monday, October 24th to Saturday, October 26th, 2024

The street exhibition will be held on the 26th (Sat) and 27th (Sun)

Location: COREDO Muromachi Terrace 3rd floor, Nihonbashi Muromachi, Chuo-ku, Tok

I participated for two days, on Friday, October 25th and Saturday, October 26th.

ÿAppearing at SHARE OUT!

On Friday, October 25th, at 7pm, he took to the stage at SHARE OUT! and gave a two-minute short presentation.

We explained that we are looking for companies that can assist us in explaining our activities and conducting interviews.

9. Mr. Kenji Abe, Mr. Hiroyuki Saito [SKSJAPAN2024]

Interview format: Face-to-face

Date: Friday, October 25, 2024 Person in charge:

Ajinomoto Co., Inc. Corporate Headquarters R&B Planning Department

Kenji Abe, Senior Manager, Acceleration Group Hiroyuki Saito, Manager, Innovation

Strategy & CVC Group

Reason for the survey (purpose): To ask about your thoughts on the challenges in solving the protein crisis at PSMiM. (We asked for your personal views.)

Lessons learned: There are two challenges to solving the protein crisis in PSMiM. First, consumer demand is low. There are various reasons for this.

However, from the perspective of awareness of the protein crisis, Japan is a country of plenty, and people have no sense of reality in their daily lives and are not very conscious of purcha

It is also difficult to link to public interest in education and the media compared to Europe and the United States. Next, there are problems with PSMiM itself.

There are two perspectives on this issue.

ÿ UnlocX Co., Ltd. [SKSJAPAN2024] Interview format: Face-to-face

NO IMAGE

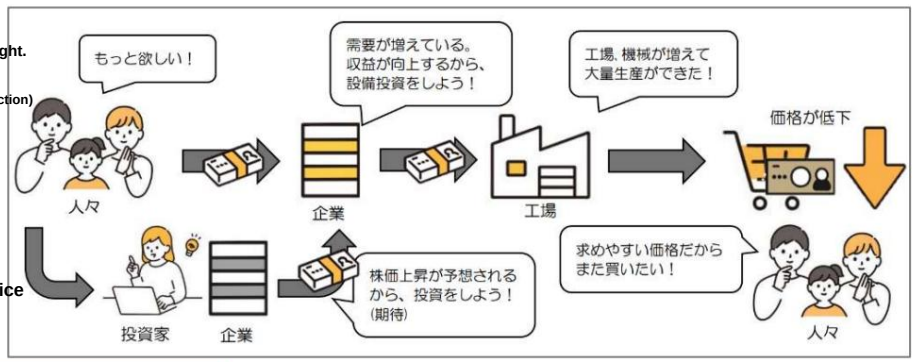
Date: Friday, October 25, 2024

Person in charge: Director and Co-Founder Tomoyuki Sumi

Reason for the survey (purpose): To hear your thoughts on the challenges facing solving the protein crisis at PSMiM.

ÿCreated by the author

The general flow of product price declines is as shown in the figure on the right.



The reason for the decline in product unit price is "improvement in productivity (mass production)

"Sales" is necessary to improve productivity.

Investment and capital investment based on "the expectation that

However, it is not possible to expect

Therefore, investment and funding in PSMiM is still low, and the price

The current situation is that it is not possible to lower the

In order to gain people's purchasing willingness on the basis of factors other than price, it is essential to "improve the taste."

"It's good" is not added value. If there are two types of products, one that is environmentally friendly, expensive, and has a subtle taste, and the other that is ordinary, inexpensive, and

Most people will buy the latter. Some people may buy the former out of curiosity, but they probably won't buy it on an ongoing basis.

We need to aim to create products that are recognized as having value even when ignoring the "good" aspects.

Lesson learned: For Japanese people, "environmentally friendly" is not an added value, so I think that environmentally friendly foods are better than real foods.

It is necessary to aim for a quality that will be recognized as valuable. Also, improving productivity is essential to lowering prices.

The challenges in solving the protein crisis in PSMiM became clear on the first day of participating in SKSJAPAN2024. (Blue part)2

On the second day, we will consider through interviews what stocks to invest in in order to solve the problem.

ÿ UnlocX Inc. [SKSJAPAN2024]

NO IMAGE

Hearing format: Face-to-face

Date: Saturday, October 26, 2024

Person in charge: Director and Co-Founder Tomoyuki Sumi

Reason for implementation (purpose): To consider what type of companies can lead to solving the issues that have emerged.

Investment targets for "improving taste"

It is expected that AI will become more widespread in the future. AI will likely be used more frequently when developing new foods.

AI is not good at specializing in specialized fields or scientific fields. Therefore, in a world where AI is more prevalent,

Companies that have this will be stronger. Therefore, the "Tasty Day" is about how people perceive deliciousness with their five senses, such as taste and smell.

Companies that have their own data have a bright future.

Key points for building a portfolio [1] ~ Trial and error after putting it together ~ (ÿ described in the investment policy)

Decide on an index and create a portfolio. Then, think about how you can improve that portfolio and make improvements.

It would also be a good idea to have people from companies you meet at SKSJAPAN2024 look at your portfolio and get advice.

Use in portfolio construction and screening ÿ3 (ÿ described in the first screening)

In order to solve the issue of "taste," we invest in "companies that have their own data on taste."

On the second day of SKSJAPAN2024, I was able to get some hints on how to select a company based on the aspect of "tastiness."

We need to think about companies that invest in media, education (food education), and productivity. In addition to the media, we need to provide food education to educational inst

I wanted to hear your thoughts on this.

In terms of "improving productivity," what issues need to be resolved to improve productivity?

To find out what it means to improve our workforce, I emailed and LinkedIn contacted several companies I had met at SKSJAPAN2024.

We also requested a hearing from Euglena regarding the production of alternative meat using microalgae.

ÿMatsumoto Hideho Secondary School Principal

Hearing format: Face-to-face

Date: Tuesday, November 5, 2024

Person in charge: Principal Munakata Satoshi

Reason for conducting this survey (purpose): We wanted to hear your thoughts on food education.

What I learned: When we hear "food education," we tend to think of it as something that is given to children and students, but in PSMiM, food education for adults is very impor

During childhood, parents have the right to choose ingredients, so approaching parents and adults leads to immediate consumer behavior.

Japanese people tend to be afraid of things they cannot see, so when providing food education to junior and senior high school students, the first thing to do is to clearly communicate s

It is important to have this kind of education from an early age, which may influence the consumer behavior of children when they become adults.

ÿEuglena Co., Ltd. Hearing format:

Zoom

Date: Wednesday, November 6, 2024

Person in charge: Junichiro Kuraumi, 2nd year student, Faculty of Policy Management, Keio University

Reason for implementation (purpose): To clear up doubts about the development of alternative meat from microalgae. Also, to learn about the challenges facing PSMiM.

NO IMAGE

Is it technically difficult to make meat substitutes from microalgae in Japan? (Answer from a Euglena employee)

It depends on the company, but there are currently many issues. There is a term called QCD (Quality, Cost, Delivery), which is said to be the key to commercializa

The current status of QCD in PSMiM is as follows:

Quality: There are issues with taste, lack of safety guarantees, and whether it meets needs (demand).

Cost: The high manufacturing costs mean that the selling price is also high.

Delivery: The manufacturing process takes time and money, making it difficult to manage delivery times and lead times from retailers.

In this way, PSMiM has determined that there are still issues with all aspects of QCD. Also, unlike new sweets,

It is essential for alternative foods such as PSMiM to compare their QCDs with existing foods.

It is believed that the business will not develop unless it goes beyond organic foods and plant-based foods.

About "Next Euglena Yakiniku" (Answer from Euglena's employees)

"Next Euglena Yakiniku" is a mixture of soy meat (tempeh) and Euglena, and is classified as plant-based and derived from microorganisms.

Also, this project was a temporary collaboration with another company (Next Meats) and has now ended.

What I learned and what I thought: I learned about the current state of QCD in PSMiM. However, to summarize the current state of each, Qÿdeliciousness

Improvement of quality, public awareness of safety, Cÿproductivity improvement, Dÿproductivity improvement.

I thought the four points I learned (the blue parts; replace "falling prices" with "increased productivity") were correct.

yKenji Abe and Hiroyuki Saito

Interview format: LinkedIn message

Date: November 5th (Tuesday) and 6th (Wednesday), 2024

Person in charge: Ajinomoto Co., Inc. Corporate Headquarters R&B Planning Department

Kenji Abe, Senior Manager, Acceleration Group Hiroyuki Saito, Manager,

Innovation Strategy & CVC Group

Reason for implementation (purpose): To learn what is necessary to improve productivity and to get hints for investing in companies that can lead to this (personal opinions wer

Use in screening ÿ4 (ÿ described in the first screening)

To improve productivity in PSMiM, there are three steps: 1) soft aspects: improving the performance of the strain and optimizing the fermentation and treatment process condition

ÿHardware: There are two points to consider when devising fermentation equipment. ÿ is for food, flavoring, and biotechnology companies. ÿ is for equipment compa

Invest in.

ÿ Takeshi

Sawano Interview format: LinkedIn message

Date: Wednesday, November 6, 2024

Contact person: Mitsui Global Strategic Studies Institute, Technology and Innovation Information Department

Consumer Innovation Office Project Manager Takeshi Sawano

Reason for implementation (purpose): To obtain hints for investing in companies that have strengths in improving the productivity of PSMiM products (personal opinions were aske

What is productivity improvement in PSMiM? What kind of corporate power is needed to solve it?

Many startups do not have the financial means to build their own factories and therefore need to outsource production.

In addition to the fact that there are few and aging plants in the world, there are also few plants suitable for food production in the first place.

In light of this, companies that undertake the development and manufacturing of various fermented foods are beginning to attract attention.

In order to lower the quality of the product, it is necessary to produce it in large quantities with a high yield.

It is a good idea to look for companies that have strengths in scaling up production, such as optimization and large-scale production.

Key points for building a portfolio [2] – What is the real challenge? Creating a portfolio that creates synergies – (ÿ described in the investment policy)

When putting together a portfolio, the ideal structure would be one that creates synergy by compensating for the challenges each company faces with the strengths of other comp

It is necessary to examine the problem (check for omissions and duplications) to see if the problem is set appropriately or if there is a more fundamental p

By extracting these issues and examining the relationships between each of them, it is possible to clarify choke points.

Use in portfolio construction and screening *5 (See investment policy and first screening)

In addition to the above, taste is also important for the spread of sustainable food.

I learned that agent informatics (a technology that uses data science and AI to develop food products) is a hot topic.

We will invest in companies that have data on the relationship between food and deliciousness. In terms of improving productivity, we will develop and select microorganisms for producti

I learned that it is best to invest in companies that are strong in optimizing production process conditions and scaling up production.

Invest in equipment companies.

From advice on portfolio construction, we will build a portfolio that will lead to problem solving through investment.

This brings us back to the origins of the Nikkei Stock League. Since the portfolio is constructed with a limited number of stocks, up to 20 stocks,

Ultimately, there must be a clear reason for investing in each company that is included in the portfolio.

In order to avoid including unsuitable companies in the portfolio, the indicators for the first screening are set in detail.

ÿ Fujiwara Techno Art Co., Ltd.

Interview format: Email Date: Wednesday, November 6, 2024 Person in charge:

Reiko Hisaoka, Corporate Planning Office

NO IMAGE

Reason for implementation (purpose): To learn what is necessary to improve productivity and get hints for investing in companies that can lead to this.

What is productivity improvement in PSMiM? What kind of corporate power is needed to solve it?

1. The ability to stably procure the necessary amount of raw materials: Raw material suppliers

In order for microorganisms to produce substances, they need to be given a nutrient source, or raw materials. For rice koji, this is rice, and for soy sauce koji, this is barley and soy

No matter how great a product is, if the raw materials are rare and difficult to obtain, it will be difficult to popularize it.

It is inefficient to visit many trading companies to gather materials, and they may not be available due to seasonal or world situations (war, etc.).

Therefore, it is very important to have a company that can supply raw materials in the quantities needed, when needed.

2. Ability to produce a lot at once with a small amount of energy: Consulting, equipment companies

It takes time for one person to carry out all the steps in production. Even in food production, some tasks are done by robots or machines rather than by humans.

In the case of substance production using microorganisms, the type of microorganism and how it is cultivated are important factors in determining the production time.

Since it has a great impact on efficiency, the fermentation and culture conditions of the microorganisms and the design of the facilities to realize them are extremely important.

There are many consultants who provide guidance, and manufacturers of mass-produced equipment and systems (including automation, digitalization, and robotics).

Education for employees and managers, as well as training for engineers, is also important, so school education and training programs are also important.

3. Smooth procurement of raw materials, production, and distribution of finished products: logistics companies

It is most efficient to have all processes from harvesting to consumption in the same place. To achieve this, we need to develop towns and factories in this way.

Even if there are some challenges for their own company, there are companies that say they will do it for the good of society and companies that are willing to cooperate with the

There is also a need for companies that can efficiently handle this.

Use in portfolio construction and screening ÿ6 (See 1st screening and 3rd screening)

In terms of "improving productivity," we realized that the cooperation of companies from many different industries was necessary, so we worked with raw material manufacturers, consulting firms, and equipment compa

We will also add "employee training" to the third screening criteria. We thought that logistics companies were also important, but

This is important for any product, and we must create a portfolio with a maximum of 20 stocks.

We have determined that this is not an industry that should be prioritized for inclusion.

ÿTokyo University of

Science Hearing format: Zoom

Date: Friday, November 8, 2024 Person in charge:

Professor Eiichiro Kimura Reason

(purpose): To hear his thoughts on food education as a university professor.

As an educational institution, what are your thoughts on food education?

Today's dietary education focuses on the nutritional aspects of "food," but we can learn from communication and networking opportunities related to "food."

They feel the value of well-being (Professor Kimura expresses this with the word "dining place") and sustainability.

I believe that we should communicate more about the importance of "food" in health and well-being.

In this environment, food is extremely important in creating value for people's well-being. Can

PSMiM's current issues with taste and flavor be resolved? Also, is government support necessary?

There is potential. However, social demand, that is, safety and security, is also important, and unless this is spread, it will not affect consumer behavior.

Financial support from the government is necessary in terms of investment in research and development and production facilities. In addition, safety assurances from the government and third-party organizations are also

Since sexual assurance can also improve social acceptance, a forum for consumer communication is also necessary.

Use in portfolio construction and screening ÿ7 (ÿ described in the third screening)

I found that although there are NPOs and academic societies related to food education, there are not many companies related to food education.

Instead of simply investing in stocks related to food education, we will add "whether the company implements food education" as a third screening indicator.

ÿMajor raw material manufacturer

(Company A) Interview format: Email

Date of implementation: Friday, November 8,

2024 Reason (purpose): To learn what is necessary to improve productivity and get hints for investing in companies that can lead to this.

Important business partners of raw material manufacturers

Company A is a supplier of intermediate food ingredients and a contract manufacturer of food products. The raw materials used are very numerous, and it is unclear which raw materials a

A lack of these ingredients can cause problems in product development, but sugar and salt, which are the basis of flavor, rank highly.

What is productivity improvement in PSMiM? What kind of corporate power is needed to solve it?

There are two main points to consider in order to improve the productivity of PSMiM: (1) efficiency and (2) acceptance. Regarding (1), it

is necessary to obtain (screen) microorganisms that produce large amounts of the target substance, and to optimize the microorganisms to mass-produce the targ

Establishment of optimal culture conditions, scaling up small-scale research-level production to actual manufacturing levels, and automation to reduce the need for human labor in manufactur

It is important to maximize the efficiency of these items.

Regarding ÿ, even if a technology is excellent, it cannot be fully utilized unless it is in an approved environment.

There is a "genetic engineering technology" that can introduce genes into microorganisms with higher proliferation ability to improve productivity, but it must comply with the laws and regulations of ea

Actual production is not possible. Therefore, it is necessary to pay attention not only to the "technology" but also to the state of readiness of the country in which it will be produced.

Use in portfolio construction and screening ÿ8 (ÿ described in the first screening)

As we realized that the presence of raw material manufacturers was important, we decided to invest in them. In addition, we will invest in sugar and salt manufacturers, which are the basis of flav

We also learned that this is particularly important, so we also invested in sugar and salt manufacturers.

In terms of productivity, we thought that we should make sufficient investments in equipment companies to improve efficiency. Therefore, we have multiple equipment compar

I learned that there is a need to consider the country's readiness to accept foreign workers, but this is not something that can be resolved through investment.

It was determined that:

2-3 | Awareness survey

Through research and interviews, it was found that the solution to the protein crisis in PSMiM requires the awareness of the protein crisis itself and each food in PS

We found that it is also essential to improve awareness. When we asked about the current state of awareness during the interviews, we found that there were differences in how it was perceived depending on the cor

Feeling the need for a survey, we conducted an awareness survey using the following method.

Method: Distribute forms to students and teachers at school	Street survey in front of Matsumoto Station	Web Survey
Target: All students and teachers (402 people)	145 people in their teens to 80s	172 people in their teens to 70s
Period: November 2nd to 8th, 2024	November 6-9, 2024	October 23, 2024 - November 30, 2024

The same questions were asked in both cases. Total valid responses: 719 (682 Japanese + 37 foreigners)

ÿResults (partial list) (The composition ratios are rounded off to the first decimal place, so the total may not necessarily be 100.)

Q: Are you aware of the protein crisis? Yes: 184 (25.7%) Yes: 238 No: 535 (74.4%) No: 481 (66.9%)

Q: Have you heard of microbial foods? (33.1%)

Q If meat is the same price, which one would you buy? Regular meat: 461 (63.98%) Alternative meat (environmentally friendly): 40 (5.66%)

Hybrid meat (regular meat + meat substitute): 28 (3.90%) No preference: 190 (26.4%)

ÿConsideration

The awareness of the protein crisis is about one-quarter of the total, which is by no means high. On the other hand, the awareness of microbial foods is

The fact that knowledge exceeded 30% is probably due to the popularity of traditional Japanese fermented foods.

"I buy regular meat," he said.

Based on the above, the results show that "tampering does not add value."

We will adopt an index that gives bonuses to companies that are disseminating information on the "quality crisis" and PSMiM. We will also invest in the media.

3-1 | Investment Policy

First, we will build a portfolio taking into consideration the following points:

•Since the portfolio is constructed with a maximum of 20 stocks, the number of companies ultimately included in the portfolio is limited.
There must be a clear reason to invest in the company. (From *5)

•Based on modern portfolio theory, invest in as many stocks as possible and avoid bias in the industries of the stocks you include. (From *1)

Our ultimate goal is to "solve the protein crisis with PSMiM," and we have been conducting research and fieldwork.

From point [2], we explored what the real problems were that needed to be solved in order to achieve the final goal.

Through this work, we have identified the following four “real challenges” that need to be achieved in solving the protein crisis in PSMiM.

ÿLow consumer awareness of the protein crisis ÿLack
of enthusiastic media coverage ÿLack of education (dietary education) on food tech and the protein crisis from an early age ÿProblems with
microbial foods themselves
ÿHigh prices due to low productivity 4. Pursuit of deliciousness that can compete with the real thing

In order to ensure that we invest in stocks that can solve these four problems, we first set detailed indicators for the first screening.

By making full use of the knowledge and ideas gained in the field work, only stocks that can solve problems can pass the first screening.

Therefore, stocks that pass the first screening are not likely to have an extremely low level of theme relevance.

Therefore, the second screening is conducted on the financial side. The third screening is conducted on the theme-related and corporate value side.

Based on key point [1], we first create a provisional portfolio.

After constructing the portfolio, we received advice on the provisional portfolio from the investment department of a major food manufacturer.

Then, we will adjust the stocks that pass the first screening and the indices to construct the final portfolio.

Based on modern portfolio theory, we decided to invest in stocks in various sectors, but the screening results showed that the key point was the sector.

There is a bias depending on the company (especially the financial indicators). Therefore, in the second and third screening, we just let the top companies

By allowing the top-ranked companies in each sector to pass through, rather than just the companies that pass through the index, we decided to prevent bias towards a particular sector among the stocks that pass through.

We will also introduce a unique system called "feeling brand." This is based on the knowledge we have accumulated through research and fieldwork.

Based on experience, several companies are allowed through regardless of their scores in each screening.

I don't think that a company can be evaluated from all perspectives based on indicators alone. The company was not selected because it received a low score in screening based on limited in

Therefore, we asked them to provide information on their current activities, future prospects, the number of times their company was mentioned in interviews with other companies,

The confidence and passion for their activities that we felt from the companies that cooperated with us in the survey made us want to invest in them.

However, it is possible that a company does not have a high score in terms of financials, themes, or corporate value.

Since this is true, the amount of asset allocation should be small. (For details, see 3-6 Asset Allocation.)

This time, we will build a portfolio aimed at solving the protein crisis in Japan.

There are companies such as Pokphand Group (CP) and Thai Union that have been nominated as candidates for inclusion. However, the ultimate goal this time is to "solve the issue glo

Since this is a "solution that can be found in Japan," we decided not to invest in Nikkei Asia300 companies, but to invest in (support) Japanese companies.

Portfolio Construction Overview

First screening: In order to pass only companies that can solve the problem, eight unique indicators are used for screening.

Second Screening: Screening based on financial aspects. The top 34 companies in each sector pass.

Third Screening: Screening based on "theme-related/corporate value". 17 top companies in each sector and companies with "feelings"

Three companies were selected as "Stocks." A tentative portfolio was constructed using these companies.

Portfolio Restructuring We received advice on a tentative portfolio from the investment department of a major food manufacturer.

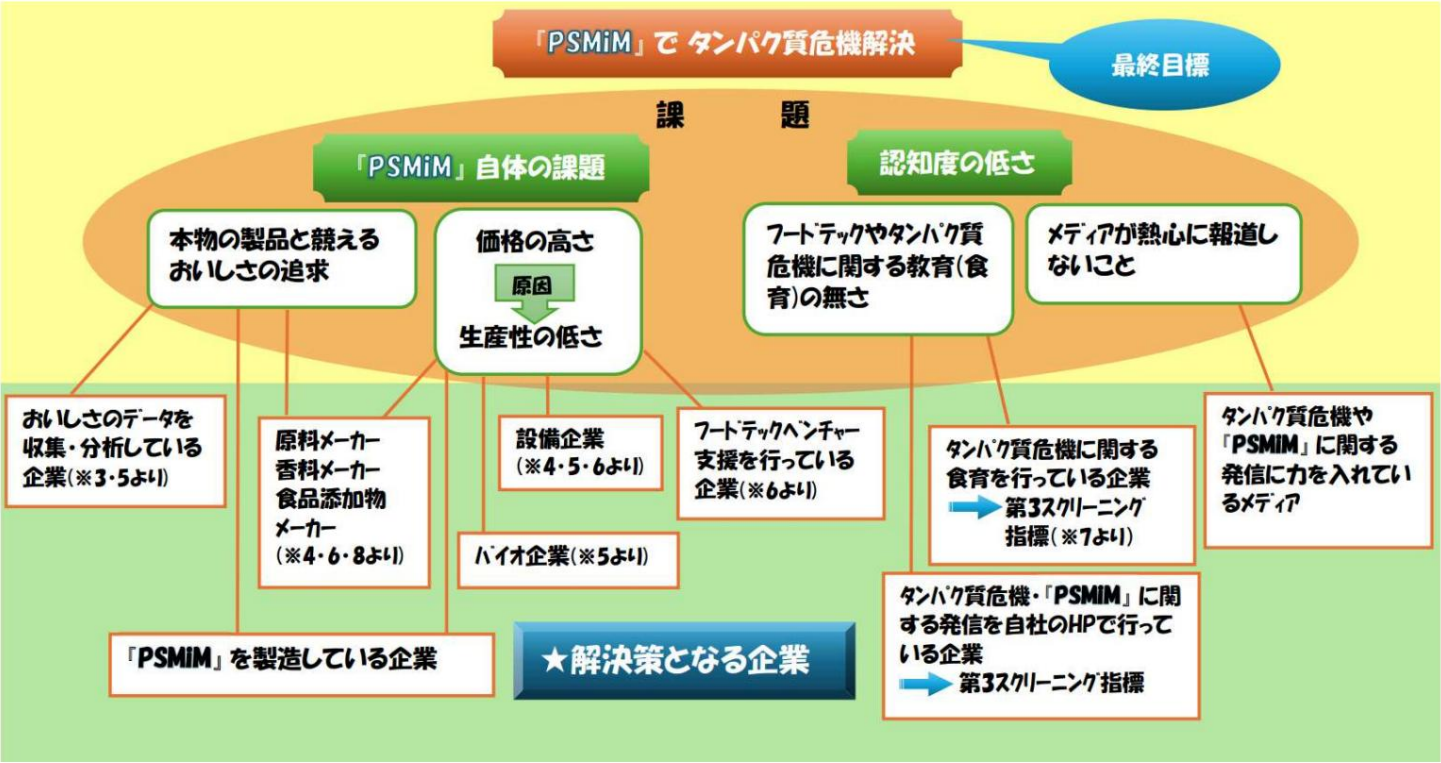
Add stocks that pass screening and second screening indicators. Restructure the portfolio.

Asset allocation and management method: Set an allocation class and allocate assets. Make regular investments using the dollar cost averaging method.

Portfolio completion: Each company will show the businesses that were included in the portfolio and the contents of the interviews.

3-2 | First screening

As mentioned in the investment policy, in the first screening, we decided to pass only "stocks that will lead to problem solving." Based on what we have learned through our research and fieldwork, we have identified the following stocks as being able to solve problems.



Based on these, we created an index. Companies that meet any one of the following eight indicators will pass the first screening.

Indicators	Reasons for adoption
ÿCompanies that manufacture PSMiM	The quickest way to support companies that manufacture PSMiM is to invest in them.
ÿ Venture support (trading companies, investments, venture capital)	Many PSMiM companies are unlisted startups. We invest with the support of companies that invest in such companies.
3) Venture support (non-monetary support, such as consulting and providing a place for connections)	I thought that startup companies needed more opportunities to meet companies that could support them, and more companies that could provide support such as consultants. (From *6)
4) Because it is an essential company for improving the taste and quality of food. (*3) It is a company that collects and analyzes data on taste.	
ÿRaw material, flavoring, and food additive manufacturers	A stable supply of raw materials leads directly to improved productivity. In addition, we learned that sugar and salt, which are the basis of flavor, are particularly important, so we will also invest in sugar and salt manufacturers (see 4, 6, 8).
ÿBiotechnology companies	The technology of biotech companies, such as optimizing fermentation conditions, is essential to improving PSMiM's productivity. (From *4 and *5)
ÿ Equipment companies	In the first place, without the equipment, PSMiM cannot be produced. Also, having bioreactors and other equipment will lead to improved productivity of PSMiM. (From 4, 5, and 6)
8. Media focusing on disseminating information about the protein crisis, alternative foods, and PSMiM	Awareness surveys revealed that awareness of the protein crisis and PSMiM was very low. We thought it would be difficult to raise awareness without the power of the media, so we decided to invest in media that were already putting effort into disseminating information.

As a result, the following 49 companies passed the first screening.

Takasago Thermal Engineering	DM Mitsui Sugar	HD Ajinomoto	Oisix ra daichi	Fujifilm	Takuma	Yokogawa Electric	Mitsubishi Foods	Sumitomo Mitsui Fudosan	
Taikisha	Ensuikou Sugar	S&B Foods	Air Water	Takasago Fragrance	Ebara Jitsugyo	Keyence	Itochu	Mitsubishi Corporation	Tokyo Tatemono	Daidan	Fuji Nippon
Nippon Shokuhin Kako	Mitsui Chemicals	Hasegawa Fragrance	Fukushima Gas	Relay	Espec	Marubeni	Mitsubishi UFJFG	Sigmaxys			
Toyo Sugar	Wellneo Sugar	Taiyo Chemical	Mitsubishi Chemical Group	Toyo Seikan	Mitsubishi Electric	Shimadzu	Nagase & Co., Ltd.	Sumitomo Mitsui Financial Group	TV Tokyo HD		
Nippon Beet Sugar	Kirin Holdings	Euglena	Organic Synthetic Chemicals	Daikin	Omron	Toppan Holdings	Mitsui & Co.	Mizuho Financial Group			

*In stock code order

3-3 | Second Screening

For the reasons stated in the investment policy, financial indicators are used in the second screening. Since this is a savings investment in which a fixed amount is purchased regardless of whether the stock is overvalued or undervalued, the weighting for undervaluation is low.

Safety			Profitability			Growth potential
Debt-to-Equity Ratio	Equity ratio Current ratio		ROE	ROA Operating profit margin Operating		profit growth rate
This is an indicator that shows the ratio of interest-bearing debt to equity capital, and measures the safety of a company's medium- to long-term financial position, with the lower the ratio the more sound and stable the financial situation.		An indicator to measure short-term financial stability (ability to repay).	An indicator that measures profitability from a shareholder's perspective.	An indicator that measures overall profitability.	It means that profits are being generated efficiently, and is an indicator used to evaluate a company's profitability and management efficiency.	An indicator showing the percentage increase in operating profit for the current period compared to the previous period.
0 4P ～0.5 3P ～0.99 2P 1.00以上 0P	60以上 5P 45～ 4P 30～ 2P 30以下 0P	200以上 5P 150～ 3P 100～ 1P 100以下 0P	14.0以上 5P 10.1～13.9 4P 6.1～10.0 2P 6.0以下 0P	5.0以上 5P 3.0～ 4P 1.0～ 2P 1.0以下 0P	6.0以上 5P 4.0～ 3P 2.0～ 2P 2.0以下 0P	20.0以上 5P 15.0～ 3P 1.0～ 1P 1.0以下 0P

Affordability		Efficiency	Cash Flow Investment		
PER	PBR Total capital turnover		sales		Finance
An indicator that measures the undervaluation of stock prices based on net income for the current period.	An indicator that measures the undervaluation of a stock based on its net assets.	An indicator that the higher the turnover rate, the more efficiently total capital is utilized.	Cash generated from operating activities This is an indicator of cash flow related to fund procurement such as capital investment and asset management, and shows the flow of cash from investment activities. If it is a premium, it is an indicator of the increase or decrease in cash from the main business, and the financing CF is an indicator that adjusts the operating CF and the capital CF. If an investment is made, it can become negative. In some cases, it can become negative.		
15～20.0 4P 10～14.9 2P 20.1～23.9 2P 9.9～0 1P 24以上 1P 0以下 0P	0.7～1.00 3P 1.01～1.59 2P 0.69以下 0P 1.6以上 0P	1,51以上 5P ～1.5 4P ～1.0 3P ～0.5 2P	本業で利益が出ている ＋＝2P 本業で赤字 －＝0P	積極的な投資を控えている ＋＝0P 事業拡大のため資金を使っている －＝2P	資金を調達 ＋＝0P 借入金を返済 －＝2P ※安全性を重視したいので－で加点 営業CF＋、投資CF－、財務CF－ ＝3P

As a result, 34 stocks passed the second screening.

3-4 | Third Screening In the third

screening, we narrowed down the companies based on themes and corporate value. Since there are no established indicators (certification, etc.) to evaluate efforts against the protein crisis, we set a unique indicator for the third screening: "The number of companies that communicate about the protein cri

The following questions were added: "Is it posted on the website?", "Are there any initiatives for nutrition education regarding the protein crisis?", and "Are there any employee training programs?" (ÿ2, 6, 7, from the awareness survey)

[Related to the topic]		Did you participate in SKSJAPAN2024 and have a session or exhibit?		Did: 3P / Didn't: 0P
		Are you posting information about the protein crisis and PSMiM on your company's website?		Yes: 3P / No: 0P Related business: 1P
		Number of items that fall under the first screening indicator (excluding ÿ and ÿ)		1 item applies: 1P
Corporate Value Society	[CSR]	Presence or absence of initiatives related to SDGs		Yes: 2P / No: 0P
		Presence or absence of dietary education initiatives regarding the protein crisis		Yes: 2P / No: 0P
	ÿtellÿ	Is the website easy to view and has good communication skills?		Ingenious: 2P / Average: 0P
	E S GÿGovernance		MSCI Japan ESG Select Leaders Index	Constituent stock: 2P / Non-constituent stock: 0P
		environment	Taking environmental action and seeing results: 3P / Disclosing environmental reports (data): 2P / None: 0P	
			Employment of women (Elboshi mark, Nadeshiko brand)	Both: 3P / One: 2P / None: 0P
			Childcare (Kurumin certified)	Platinum Kurumin certified company: 2 points / Kurumin certified company: 1 point / None: 0 points
			Health and Productivity Management Excellent Corporations - White 500/Bright 500	Certification: 2P / No certification: 0P
		Governance	Employee training	Yes: 2P / None: 0P
			Existence of an internal reporting system	Yes: 2P / None: 0P

As a result, 17 stocks passed the third screening. We added three companies as “stocks we had strong feelings about” to these stocks, and constructed a tentative portfolio of a total of 20 companies.

3-5 | Portfolio Restructuring

After hearing from the residents of UnlocX Co., Ltd., we received advice on a tentative portfolio from the investment department of a major food manufacturer.
Then, we will revise the indices and other factors to construct the final portfolio.

ÿHiroyuki Saito

Hearing format: Zoom Date:

Wednesday, November 27, 2024

Mr. Hiroyuki Saito

After working for Tokio Marine & Nichido Fire Insurance Co., Ltd. (now Tokio Marine & Nichido Fire Insurance Co., Ltd.),
In April, he joined Japan Asia Investment Co., Ltd. and was involved in industry-academia collaboration investment and the first agricultural investment project in Japan at that time.
In February 2013, he established and managed a stock-based fund that targets the industrial and environmental fields.
Participated in Agriculture, Forestry and Fisheries Industrialization Support Organization (A-FIVE) as a founding member
He joined Ajinomoto Co., Inc. in February 2021.
The CVC will be involved in domestic and international startup investment, collaboration promotion, strategy planning support, etc.
He has over 20 years of investment experience and is using investment to solve social problems.
We want to create a social impact such as:

ÿ Points to note about the provisional portfolio

If I had to say, it would be that dairy companies are incorporated.
The point is that precision fermentation (casein)
Investing in startup companies such as
I think there were several companies that were doing this. (I was given some specific examples.)

ÿAsset allocation

Without food and beverage companies and equipment companies, it would be impossible to create a PSMiM in the first place, so it is a good idea to allocate a larger
On the other hand, it may be a good idea for supporting companies to allocate less to them.

ÿ First screening and second screening (financial)

First of all, listed companies rarely go bankrupt suddenly unless there is a major natural disaster or scandal.
I think it was a good idea to narrow down the investment targets considerably through the first screening and then conduct financial screening.
In this case, it may be a good idea to check whether the company has performed well for the past two or three years (net income, etc.).
However, when a company is struggling, the best they can do is to protect the company.
I don't have the luxury of trying new things. Therefore, I think it's best to choose a company that is doing well or is expected to do well.
vinegar.

Key points for portfolio construction [3] ~ Can you explain why you chose that stock? Ultimately, it's your own sensibility ~ (ÿ described in asset

allocation) The most important thing is to be able to explain why you chose that stock. You need to be able to understand the reason and be able to expla
In the end, it's important to follow that feeling and build your portfolio accordingly.
In stocks that are not, invest less. Considering this balance is probably the essence of a portfolio.

Through hearing

From ÿ, among the companies that Mr. Saito told us about, we looked into food tech companies such as precision fermentation.
Companies that have been confirmed to have investments in startup companies will be added to the first screening.
We decided to conduct a third screening.
Of course, I let the company pass, and I contacted the companies that were not specified by email.
"Holdings" was added to the first screening.
We added new stocks and redid the second and third screening for all stocks.

Growth potential
Net profit 3rd term ratio
To make continuous profits A finger to measure whether you are doing well Target. Continuously making profits Companies that are You can challenge Therefore, points will be added.
22年＜23年＜24年　5点 23年＜22年＜24年　3点 22年＜24年＜23年　3点 22年＞24年　0点

The stocks included in the restructured portfolio are as follows. In addition, Taiyo Chemical, Toyo Seikan Group, and Nagase & Co., Ltd. are stocks I have a strong prefe

Construction	Meiji HD	Chemical	Daikin	Shimadzu Corporation	Nagase & Co., Ltd.	Information and Communications
Daidan	Ajinomoto	Hasegawa Fragrance	Yokogawa Electric	Further Products	Real Estate	TV Tokyo HD
Food	Kirin HD	Metal Products	Electrical Equipment	TOPPAN HD	Mitsui Fudosan	
DM Mitsui Sugar HD	SB Foods	Toyo Seikan G	ESPEC	Wholesale		service
Fuji Japan	Taiyo Chemical	machine	Precision Equipment	Itochu Corporation	Sigmaxys HD	

*In stock code order

working for two years to solve the protein crisis, as we deeply agree with the “essence of the portfolio” in the asset allocation key

I decided to rely on the experience I have gained and the new knowledge I have gained this year and allocate assets according to my own instincts.

First, we prepared allocation classes A to C. (Investment amount: C < B < A) And, among the stocks included in the portfolio, we chose stocks that we have a strong attachment to

The 17 companies that were ranked were ranked one by one. As a result, the companies were classified into A rank: 7 stocks, B rank: 6 stocks, and C rank: 4 stocks.

Thought process for ranking ÿ

Without the power of food brands, PSMiM cannot be created, so
The allocation class is A. However, one of the two taste and flavor companies is also A.
Therefore, one of the two companies, Company A, which is a sugar and food additive company,
Replace with taste and flavor company. From screening score, DM Mitsui Sugar
HD is B and Hasegawa Fragrance is A. Another flavor and aroma company
Itochu Corporation is classified as B.
ÿ Based on the results of the awareness survey, we will raise awareness of the protein crisis and PSMiM.
However, such a program was not planned.
In the interview, we learned that these documents are often created at the request of the company.
Therefore, TV Tokyo HD is rated B.
3) Shimadzu Corporation had the most PSMiM initiatives among all equipment companies.
The remaining stocks are classified as B and C.
ÿ Divide the remaining companies into support companies and equipment companies. Support companies are
The three companies are TOPPAN HD, Mitsui Fudosan, and Sigmaxyz HD.
Sys HD is involved not only in the food tech business of large corporations, but also in food tech ventures.
The company also provides support to charter companies and has a wealth of past cases.
Because it has the highest screening score among all the support companies,
Let us call it B. The other supporting company will be C.
ÿ Four equipment companies remain. Equipment companies have
Since it is an essential stock, half of it will be B.
Since it is unclear whether this manufacturer's equipment will be used, the equipment company
Classification by cleaning score. As a result, Yokogawa Electric and Daidan received B, ESPE
and Daikin was given a C.

Investment amount for each rank and favorite stock

If 5 million yen is divided equally among three classes, 1
The class will cost 1.66 million yen, leaving 20,000 yen left over...ÿ
4.98 million yen will be divided into three classes.
If the ratio of A:B:C is 3:2:1, then A:B:
C = 2.49 million: 1.66 million: 83 million. The second of each stock,
There was no significant difference in the total scores for the third screening.
Therefore, the allocation of each stock will be different within the class.
I can't.
A: 2.49 million yen ÷ 7 stocks = 355,714… yen B: 1.66
million yen ÷ 6 stocks = 276,666... yen
C: 830,000 yen ÷ 4 stocks = 207,500 yen
Since A and B are not divisible, the allocation of one stock is
A: 350,000 yen B: 270,000 yen
350,000 yen x 7 brands = 2,450,000 yen, 270,000 yen x 6 brands
The total of the fractions of A and B is (A allocation
2.49 million yen + B allocation 1.66 million yen) - (2.45 million yen +
1.62 million yen) = 80,000 yen...ÿ
The allocation of stocks with particular interest is ÿ20,000 yen + ÿ80,000 yen = 10
The total amount will be divided into three stocks. Allocation of each stock
Divide the amount by 12 months and round up to the nearest 5 million.
The 4 yen mark is a screening of popular stocks.
The stock with the lowest scoring score was deducted from the December investment.
Adjustments will be made based on the amount (including fees).

3-7 | Operation method

Our portfolio is dominated by food stocks.

Food products are purchased regardless of the economic situation.

Therefore, it is basically a defensive stock.

Innovative stocks grow as fast as tech stocks

And stock prices rarely fluctuate significantly.

Therefore, I learned about the regular investment method from SMBC Nikko Securities.

In addition, a fixed number of shares are purchased each time.

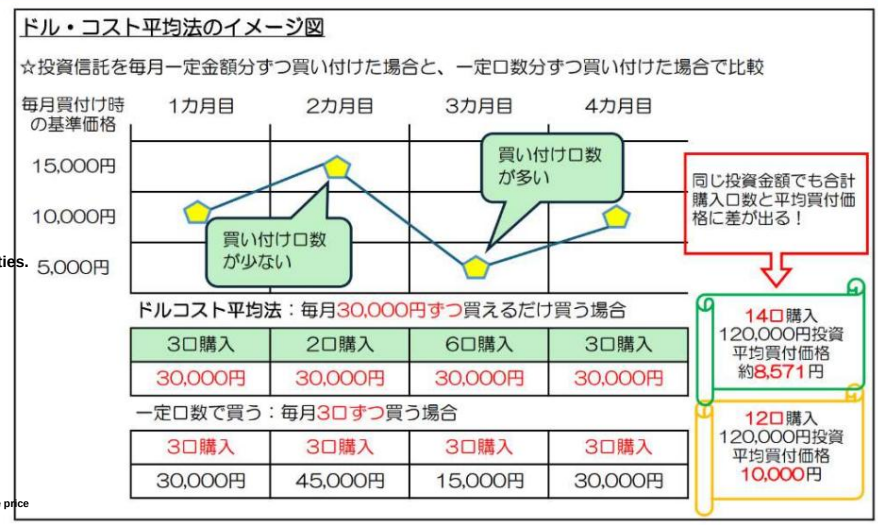
Instead, use dollar-cost averaging to calculate a fixed amount.

Buy as much as you can (ÿ1) Using dollar-cost averaging

Since you can buy a lot of shares in a downtrend,

As shown in the figure, even with the same investment amount, the number of shares purchased and the average purchase price

There will be a difference in price.



Created by the author based on Nikko EasyTrade Investment Trust Accumulation Plan

We sent an email requesting interviews to all incorporated companies, and some of the responses we received are listed here.

Daidan [1980] Construction industry ÿInvestment allocation class: B

A long-established comprehensive equipment company since the Meiji era. We handle electrical and communications equipment, air conditioning, water and sanitation for large buildings (hospitals, factories, research institutes, public buildings, commercial fa

In order to build a PSMiM factory, we need not only the power of machinery companies, but also the power of construction companies.

He is a member of the Food Tech Public-Private Council.

DM Mitsui Sugar Holdings [2109] Food ÿInvestment Allocation Class: B

Japan's largest sugar manufacturing company. Equipped with analytical equipment for taste and odor, it can perform quantitative analysis of ingredients, which is not possible with senso

This makes it possible to improve the taste of processed foods. The taste analysis technology that we have developed can be used to analyze the taste of various foods and seasonings in addition

It can be applied to taste control. We are also developing gelling agents for plant-based foods, so we can improve the taste of PSMiM.

I would like to invest in this

area. Fuji Nippon [2114] Food ÿ Investment allocation class: A

A mid-sized sugar manufacturing company that developed inulin, a dietary fiber made from sugar.

In the "Food Science Business," we respond to the needs of companies by using a wide

range of technologies to process food additives and functional ingredients into easy-to-use formulations.

is.

Source: Fuji Nippon website

Meiji Holdings [2269] Foods ÿ Investment allocation class: A

In addition to the "food" and "pharmaceutical" businesses, in recent years the company has been promoting open innovation.

In collaboration with universities, hospitals, etc., we will leverage ideas, new technologies, business models, and various assets owned by Meiji Holdings.

We are creating products and business models by combining the value chain and the food tech.

The company also invests in funds that invest in start-up companies.

Ajinomoto [2802] Food ÿ Investment allocation class: A

The world's leading amino acid manufacturer with a wide range of businesses centered on the food and bio & fine chemical businesses

The company has expanded its Solein business globally. In addition to possessing advanced fermentation technology, the company has also agreed to a strategic partnership with Solar Foods, the developer of Solein, and in August 2024 began selling mooncakes and ice cream sandwiches made with the same ingredients at a commercial facility in Singapore. The company boasts an overseas sales ratio of approximately 60%, and operates in 130 countries and regions. The company is considered to be a well-established company, with overseas production bases and sales routes, a large number of patents held, and ample experience in intellectual property.

NO IMAGE

[Company Interview] December 20, 2024 Mr. Saito answers using the ASV Report (Integrated Report) 2024

Q: What are your company's future prospects for microbial foods?

As a food system aimed at spreading new food lifestyles, we are promoting environmentally friendly food systems such as plant-based and air-based p

We will begin with product development using materials that have been developed using these technologies. We will also develop technologies and materials with an eye to the future when the use of precision fermentation, cultured meat, etc. will become more

By 2030, we will refine technologies that contribute to improving quality and reducing costs, leading to the development of delicious, affordable products.

The development base for the global expansion of such products is located in the area where approvals for new food systems are being granted and where consumer demand is relativ

We have chosen Singapore, where we expect to see a positive response, and will provide and promote our new products.

We will combine this with "fine technology" to build a food system for higher added-value alternative protein foods.

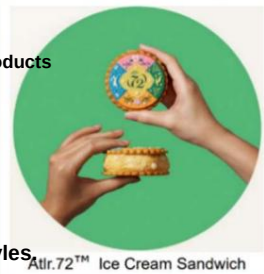
Q: What does your company think is necessary to solve the protein crisis? What is required of companies and society?

I would like to know two things.

Creating and exploring optimal channels to stimulate demand for new ingredients over time, and developing new promising food products

In addition, given the reality that "coexistence with the Earth" is not a direct purchasing motive for the average consumer, we thought it would be great to make a proposal that would foster respect for nature and consideration for loved ones in daily life. We will develop our business in key areas of the value chain, which is our strength, and contribute to society by pursuing food culture, new ways of eating, and food that suits individual tastes and lifestyles.

We will create social value and value for consumers.



Atlr.72™ Ice Cream Sandwich

Solein ice cream sandwiches (Source: same report)

Kirin Holdings [2503] Foods ÿ Investment allocation class: A

By combining the original beer-making techniques (fermentation and brewing technology) with biotechnology, we have developed a wide range of microorganisms, including lactic acid ba

It has been applied to the cultivation of organisms, leading to the discovery and extraction of useful substances (functional substances) in the field of health science.

They have the skills to develop fermentation control, flavor design, taste chemistry, and other areas, and are working to improve the taste and productivity of PSMiM.

We have determined that this company is connected to the above.

S&B Foods [2805] Food ÿInvestment Allocation Class: A

It has been leading the spice market for over 100 years. It has the largest market share, accounting for 60% of the total. It covers a wide range of cooking genres and has a wide range of pr

The number of items is about 3,000. In August 2022, the company also entered the plant-based curry roux and retort products market.

By collaborating with the spice industry, we have been able to improve our research level and development speed.

Even though they have standard products, they continue to challenge themselves to develop new food products, so I definitely wanted to invest in them.

Taiyo Chemical [2902] Foods ÿ Investment allocation class: Attachment

Manufacturer of food and cosmetic ingredients. In addition to functional health ingredients such as L-theanine, we also manufacture essential ingredients for maintaining the quality of processed foods.

The museum analyzes human senses from both an emotional and scientific perspective, and this data is used to support new product development for major food manufacturers and major retailers, promote new products, and analyze plant-based foods.

[Company Interview] December 19, 2024 Marketing Headquarters Marketing Group

Q: In the future, as the development of microbial foods progresses in Japan, are you considering your company getting involved in improving the taste of microbial foods?

There is a good possibility of entering into the analysis of the palatability of microbial foods. For example, to what extent has the palatability (texture, flavor) of microbial foods already been e

It is possible to analyze whether the taste of microbial foods is similar to that of existing foods, or whether it has a new taste that is not found in existing foods.

We hope that our deliciousness analysis technology can be put to use in this regard.

Q: What does your company think is necessary to solve the protein crisis? What is required of companies and society?

I would like to know two things.

We believe it is important to promote the deliciousness of microbial foods. Until now, they have been discussed in terms of how close they are to real meat.

Although plant-based foods and microbial foods have been the norm, the deliciousness that can only be achieved through plant-based foods and microbial foods is

It is important for companies to communicate this new value, and I believe that society also needs to recognize and accept it as valuable.

Hasegawa Fragrance [4958] Chemical ÿInvestment Allocation Class: A

It boasts the second largest share in the domestic flavorings market. As a solution to food resource shortages, the company has focused on flavorings that can replace food, and has been developing savo

We are developing a flavor series that allows for the substitution of natural ingredients and blended fragrances that substitute for citrus essential oils.

For base foods, the distinctive flavor is reproduced using PlantReact. PlantReact uses the same ingredients without using animal ingredients.

It is a material that can give a flavor and deliciousness as if ingredients were used. It is made from natural vegetable oils and fats using the power of enzymes.

The juice that comes out of the juice gives food a rich, full-bodied flavor, helping to reduce the amount of ingredients used and conserving natural resources.

The company has a capital and business alliance with DAIZ, the maker of the meat "Miracle Meat." It is debt-free.

Toyo Seikan Group Holdings [5901] Metal Products ÿ Investment Allocation Class: Attachment

We are the leader in packaging containers such as beverage cans and PET bottles. In addition to container design, we also provide technical support for food processing, filling, sealing, steriliza

The company is aiming to transform into a high-added-value company that provides not only goods but also services in the future.

The company launched a new service called "Fura" to support customers who have no experience in food processing or filling.

We are proposing preserved foods that are easy to prepare, plant-based meat substitute products that are difficult to make with retort foods, and products that use unused fish.

By increasing the number of customers, we are contributing to the solution of food waste. As a place to create the food of the future, we will utilize food tech technology and create products that truly benefit our

We will support the creation of valuable products. We will also exhibit at SKSJAPAN2024.

Daikin [6367] Machinery ÿInvestment Allocation Class: C

We are one of the world's leading air conditioners. We are overwhelmingly popular in Japan for commercial use. For corporations, we provide air conditioning for factories and offices, and we also provide products that maintain the quality

We have a wide range of energy-saving air conditioners that are useful for the following: Commercial air conditioners are used in the food industry for cream, milk filling, cheese kneading, etc

It is used in food processing and packaging. In 2021, the company also developed a technology to purify the air in food factories and extend the expiration date.

In one case, the expiration date was doubled by using a small air conditioner to increase the air pressure inside the booth to prevent the intrusion of bacteria and other contaminants.

Yokogawa Electric [6841] Machinery ÿ Investment allocation class: B

The company's main products are control systems for various plant production facilities, such as petroleum and chemical plants. It has strengths in automating factories and large-scale p

We provide solutions to solve problems. We also manufacture cell culture equipment (bioreactors), and are providing services to pharmaceutical companies and research

They also participate in food tech events such as "Food Tech Japan" and "Agri-Food Tech Expo Asia".

There are many years of participation, so interest in food tech is considered to be high. Ranked 1st in total points for the second and third screenings.

ESPEC [6859] Electrical Equipment ÿ Investment Allocation Class: C

The company is a leader in testing equipment that analyzes the effects of environmental changes such as temperature and humidity,

and in the food industry, it provides testing equipment used to set expiration dates and best-before dates. It will also exhibit at

SKSJAPAN2024. It is also involved in food tech businesses such as plant factories that can systematically cultivate safe, pesticide-free vegetables and land-based aquaculture.

I am.

Source: ESPEC website

Shimadzu Corporation [7701] Precision machinery ÿ Investment allocation class: A

A major precision equipment manufacturer. Customers come from a wide range of industries, including food, medical, pharmaceutical, chemical, and other fields.

Energy, infrastructure, electrical equipment, automobiles, aviation, semiconductors, and many more. Their

main analytical and measuring instruments are used in the food industry to analyze aromas and flavors and

evaluate texture. As the founder wrote, "Whatever your taste, we can manufacture it," they develop products by understanding the demands of their customers and society.

NO IMAGE

[Company Interview] December 26, 2024 Mr. Takahiro Ueki, Public Relations Group, Corporate Communications Department

Q: What kind of business is the technology featured in the "Food Science Solutions" section of your website used in?

We have a wide range of customers (companies and research institutions that have purchased our analytical and measuring equipment) from large companies to startups, universities, and national research i

Our products are mainly used for research and development and quality control. Our customers are mostly manufacturers of food, beverages, and flavorings.

There are also companies that work on plant-based foods.

Q: What are the future prospects for the "Food Science Solutions" business?

The demand for food is proportional to the population. As the population increases, there is also a growing concern about food shortages, so research and development and quality control related to food are being c

The importance of this is unshakable. We would like to contribute with various analytical and measuring instruments.

Shimadzu has established the NARO Shimadzu Testing Lab, an in-house laboratory to support the development of new drugs.

However, our analytical and measuring instruments are used in a wide range of industries and applications.

For example, a testing machine for measuring the firmness of meat is used by a chemical manufacturer to develop new materials.

This may be the case.

Q: In the future, as the development of microbial foods progresses in Japan, are you considering your company getting involved in improving the taste of microbial foods?

From the perspective of "improving the deliciousness of food," it makes no difference to us whether the ingredients are derived from microorganisms or not.

Our products are widely used in the development and production of various products. In that sense, we entered the market several decades ago.

There are also many technologies and products related to things.

TOPPAN Holdings [7911] Other products ÿ Investment allocation class: C

Based on printing technology, we are expanding into semiconductor materials, packaging materials, etc. We are also developing bioresources such as algae, which are expected to replace fossil resources, and biote

In October 2024, we will enter into a capital and business alliance with the Chitose Group to realize a bioeconomy that utilizes biotechnology and promotes circular economic a

Itochu

Corporation [8001] Wholesale ÿ Investment allocation class: B

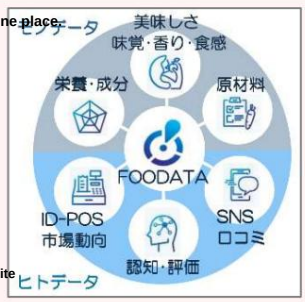
A major general trading company. In partnership with the Taste and Fragrance Research Institute, they collect data on purchases, taste, consumer surveys, and SNS in one place.

We provide a system called "FOODATA" that can analyze data from the top of the food industry.

We have supported the use of data in marketing operations such as product planning.

As a service, the company has begun offering "FOODATA SNS Marketing," a service that provides comprehensive support for SNS

marketing for food companies.



Source: Created by the author based on the FOODATA website

Nagase & Co., Ltd. [8012] Wholesale industry ÿ Investment allocation class: Attachment

Nagase & Co., Ltd. deals in dyes, chemicals, synthetic resins, machinery, electronic materials, cosmetics, health foods, and medical equipment.

NO IMAGE

We are a trading company specializing in chemical products, and we handle the import, export, and domestic sales of these products.

The group companies include manufacturers of chemicals, food, etc.

[Corporate Interviews] November 21st and 25th, 2024 Nagase Bio Innovation Center, Mr. Fumiki Nomoto

Q: Is your company's development of technology for overexpressing proteins using microorganisms a technology that can help address the protein crisis?

Our "protein overexpression technology using microorganisms" can be used to produce a variety of proteins.

Up until now, our company has mainly focused on enzymes as proteins. By using enzymes, we can make sugar from starch and

It is possible to improve the taste and texture of food, produce health foods, and contribute to food.

We have not yet been able to produce edible proteins.

I think that's an extremely difficult thing to do.

Q: I understand that the products made using your company's microbial protein overexpression technology improve the taste and texture of food ingredients. Are you also a raw material manufacturer that has data on taste and texture?

Our company owns enzymes that are used to tenderize meat, improve the texture of bread, and make sugar from starch.

When developing an enzyme, data on taste and texture may also be collected.

Mitsui Fudosan [8801] Real estate industry ÿ Investment allocation class: C

As a general developer, we handle office buildings, commercial facilities, hotels and resorts, logistics, and housing.

NO IMAGE

&mog, which is part of the "Nihonbashi Revitalization Plan," provides "food business development support," and

contributes to the development and expansion of food businesses by utilizing its own facilities in the Nihonbashi and

Yaesu areas to provide marketing opportunities that can reach consumers directly and to create business opportunities through holding exhibitions, etc.

[Corporate Interview] December 23, 2024 Mr. Akira Kakino, Nihonbashi Urban Development Promotion Department, Mitsui Fudosan Co., Ltd.

Q&mog - What kind of businesses have you supported in the past? Do you support food tech-related businesses?

&mog supports "food business development" and sees "food tech" as "one tool" for developing new food businesses.

We aim to develop food businesses by reaching consumers through our assets, such as commercial facilities and apartments, which we operate.

One of the projects we have supported in the past is the "Enjoy the Food of Famous Restaurants Selected by Mitsui Fudosan Anytime, Anywhere" project.

These include "mitaseru," a mail-order gourmet service that delivers carefully selected meals to your door, and "CAN EAT," which provides allergy management ser

Q: What does your company think is necessary to solve the protein crisis? I would like to know what is expected of companies and what is expected of society. What is expected of companies: While

solving the protein crisis is obviously an important issue, it is also important to not only solve the food problem, but also to address the issues that have b

I think it is important to solve these problems while maintaining the joy and excitement that food has brought to people.

Although this inevitably leans towards a product-out approach, I believe that the food industry is in fact the ultimate market-in industry.

I think it is important to aim for a world where consumers can be satisfied while solving problems. What

society expects: The food industry is a mature industry, so I think there is a conservative side to both companies and consumers.

Even if development is possible, it is often difficult to bring it to market. Of course, it is also important to maintain the existing framework.

At the same time, however, I believe it is important to welcome new businesses, technologies, and players, and create a society in which co-creation is promoted even more than it is

Sigmaxyz Holdings [6088] Services ÿInvestment Allocation Class: B

Mid-level consulting firm. Strengthens project management (PM) that supports everything from business strategy planning to system implementation. New businesses in the food and coo

We provide business creation/launch support, market and corporate research related to cutting-edge food tech, and business strategy formulation.

We provide market research, business due diligence for food tech ventures, and support a wide range of businesses from large corporations to ventures.

There are project examples of

TV Tokyo Holdings [9413] Information and communications industry ÿ Investment allocation class: B

Ranked 5th among major commercial broadcasting stations. Affiliated with the Nihon Keizai Shimbun. Strong in business and economics programs, including "News Morning Satellite" and "WBS (World

"Ness Satellite" is a flagship program on TV Tokyo. In addition, "Mirai Gohan" aired on Monday, September 16, 2024,

The program covered topics related to the protein crisis and food tech, including cell-cultured meat and Zeroco, as well as protein-based foods.

The Tokyo Stock Exchange in 2024 is expected to experience historic volatility.

1. On February 22nd, the price reached its highest level during the bubble period.

38,915 yen (1989) is surpassed for the first time in 34 years.

On July 11, it hit a record high of 40,000 yen.

The price rose to 42,426 yen.

The Keizai Stock Average fell by 4,451 yen, the largest drop on record.

On the 12th, the price rose by 3,217 yen, the largest increase on record.

The closing price on the 30th was 39,894.54 yen, down 1.1% from the end of the previous year.

The price rose by 6,430 yen to 1,000 yen. It was truly a year of volatility.

See the Nikkei average price movements for the year up to 2024 (top right)

Although it fluctuated wildly in the summer, it has been gradually increasing steadily since then.

Therefore, regarding the Nikkei average,

Is "One-time January Investment" better than "One-time January Investment"?

From 2000 to 2023, TOPIX will

About 80% of the investors invested in the S&P 500 in a lump sum in January, while about 90% invested in the S&P 500 in a lump sum in January.

There is also data showing that it outperforms "monthly installment investment."

However, I recommend a lump-sum investment in January, not a regular investment.

It is risky to do so because the economy is expected to continue to grow steadily.

No one knows if the market will last.

Only after you have checked the prices, you will understand whether they were cheap or expensive.

Even if you predict that the Nikkei average will exceed 40,000 yen,

Many people are wary of high prices.

I wrote about the results of my regular investment in a STOCK league report.

In the meantime, stock prices will likely continue to rise, so next

I didn't think about making a lump sum investment.

And this year we made monthly installment investments.

The closing price on December 30th was 226,824 yen.

By the way, if you make a lump sum investment in January, the amount will be 698,934

The yen's gain was a landslide victory.

I compared the movements. The Nikkei average was strong, but of course the stock

Some of them are on a downward trend.

As the market was doing well, both investment methods generated solid profits.

On the other hand, stocks that ended the day on a downward trend, such as Meiji Holdings,

Looking at the figure, the valuation loss for the "January lump sum investment" is

The amount of the impairment loss was larger than that of the Modern Portfolio Theory.

The portfolio is based on sector diversification and investment

By diversifying your investments over time, you can diversify your investments.

We were able to reduce the risk.

I can't keep up with the volatile market movements this year, so I just watch.

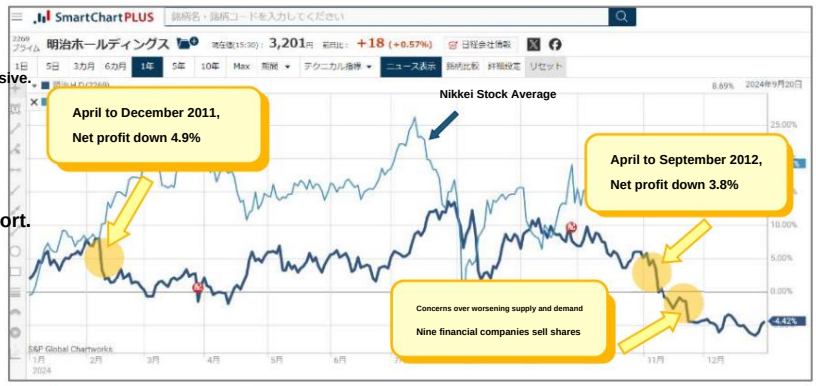
However, "monthly installment investment" uses time to your advantage.

By attaching it to the market, you can invest without getting too excited or upset about market movements.

The solution to the protein crisis is a long-term investment.

Therefore, risk diversification through "monthly installment investment" is appropriate.

I believe there is.



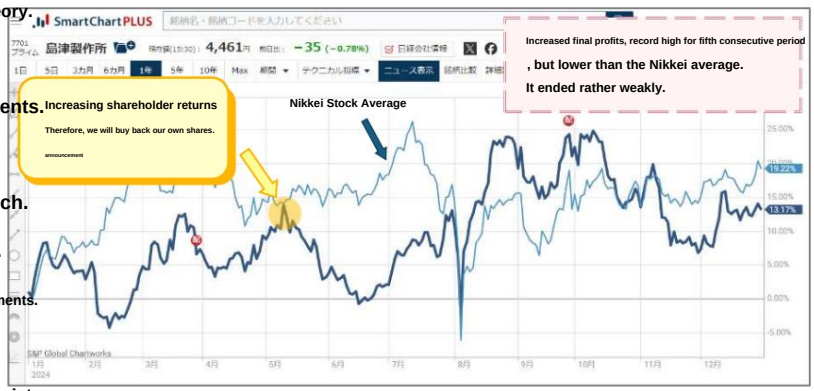


Chart source: Nikkei Smart Chart Plus

4 Appealing to investors

Nearly three billion people in every region of the world still lack access to a healthy diet. Hunger also drives conflict. Investing in transforming food systems will help transform our world. It is one of the smartest and most necessary investments we can make.

Excerpt from UN Secretary-General António Guterres' Statement on Food Systems (12 July 2021).

PSMiM is very promising in solving the protein crisis, reducing environmental impact, and expanding the food tech and meat alternative market. These technologies not only support a sustainable food supply, but also represent attractive business opportunities for investors.

1. Responding to the protein crisis

PSMiM can provide large amounts of protein in a sustainable way and therefore make a significant contribution to solving the protein crisis. According to the Food and Drug Administration (FDA), microbial protein is more nutritious and less expensive to produce than animal protein. It is considered to be low.

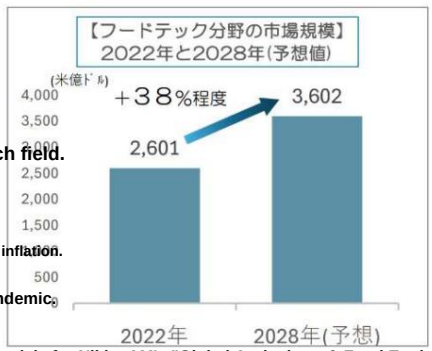
2. Low environmental impact of PSMiM production

The amount of water required to produce 1 kg of microbial protein is approximately 1/10 of that required to produce animal protein (e.g. beef). In addition, it has been shown that meat substitutes produced using microbial fermentation technology can reduce CO2 emissions by up to 99% compared to traditional beef pro And because microbes grow primarily using sugars and fermentation, they reduce the amount of land needed for crop harvesting and feed production. It is possible to produce protein without the use of electricity, reducing land use by up to 90% compared to conventional agriculture and livestock production. Theoretically, bioreactors could be installed in soils that are not suitable for agriculture, such as deserts, and could produce not only food but also feed, fuel, chemic It is said that PSMiM can produce various materials. In this way, it can significantly reduce land use, water resources, and energy consumption. This makes it an excellent alternative to animal-based proteins with a smaller environmental footprint.

3. Food tech market is expected to expand

It is expected to play a key role in solving the worsening global protein crisis, and is a market leader in the food tech field. The scale of the market is expected to expand significantly in the future.

The investment amount is expected to increase due to concerns about the prolonged Russian invasion of Ukraine, conflict in the Middle East, and high inflation. This decline was due to a number of factors, including the continued high interest rate environment and the impact of the COVID-19 pandemic. Investment in the field is generally on the rise.



Created by the author based on sales materials for Nikko AM's "Global Agriculture & Food Equity Fund

The alternative meat market is growing rapidly and PSMiM is an important part of it. By 2023, the alternative meat market is expected to be worth approximately US$21 It is expected to grow to approximately US$28 billion by 2028. Microbial meat substitutes are expected to play an important role in this market. In particular, the market size of precision fermentation is expected to reach US$2.1 billion in 2022, which is still in the growth stage, but by 2032, it is projected to reach US$1.2 The global market for microalgae is expected to grow to US$11.8 billion by 2023, with an average annual growth rate of 45%. The PSMiM market is expected to grow at a CAGR of 8% to reach 25.4 billion US dollars in 2033. Thus, the PSMiM market is expanding rapidly. For investors, early entry is a good way to anticipate big returns in the future. This is a chance to see the protein crisis coming. Since food is an inseparable part of human life, Each of these markets is expected to continue to expand in the future.

4. Improving nutritional value and functional foods

Microorganisms can increase nutrient density and enhance certain functional components (e.g., probiotics and dietary fiber) compared to traditional agricultural p Therefore, PSMiM is not only used to provide protein, but is also being used as a functional food. For example, fermentation technology can be used to produce foods that are rich in nutrients such as vitamins, minerals, and omega-3 fatty acids.

5. The appeal of the portfolio itself

When we hear about "solving the protein crisis," attention tends to turn to food companies and equipment companies developing alternative foods, but our port It also covers supporting companies such as media companies and real estate companies. Therefore, it is a comprehensive guide to solving the protein crisis with P In addition, diversifying investments across 11 sectors is believed to have a risk mitigating effect.

1. Exploring PSMiM

Each food product from PSMiM is made using innovative technology, but I was particularly surprised by the precision fermentation. The technology itself has been around for a long time, and Ajinomoto's amino acids are a good example. I was very surprised that in theory, any protein can be made if you know the gene sequence that codes for the protein you want to make, and that it is not actually the latest technology. I was shocked that such an innovative technology with so many possibilities is not well known in Japan, whereas in Singapore and other places, foods containing ingredients produced by precision fermentation are already on the shelves of supermarkets and are available to anyone. On the other hand, through interviews and awareness surveys, I learned that PSMiM has some challenges. This time, we were able to build a portfolio that can greatly contribute to solving those challenges, even though it was trial and error. The food tech field, including PSMiM, is not yet well known. Someone I spoke to at SKSJAPAN2024 said, "SKSJAPAN is the largest food tech event in Japan, and it's getting bigger every year. However, food tech events overseas are incomparably larger in scale than SKSJAPAN, and the number of players participating is on a whole different level," he said. Everyone I met at SKSJAPAN2024 was passionate about the food tech field. There are many people in Japan who are working to prepare for the inevitable protein crisis and to improve people's diets. However, not many people know about their existence, activities, and results. It would be my greatest wish if this report could help as many people as possible learn about PSMiM, food tech, the protein crisis, and the existence of people in the food tech field who are working hard every day behind the scenes. I hope that Japan's food tech field will become more popular and continue to develop. (Sakata)

2. Reviewing the activities

From April when I decided to try again in the Nikkei Stock League until today, the Nikkei Stock League has been the center of my life. We planned our activities by making use of the lessons learned from last year. Every interview was meaningful and we learned something new. In particular, it was a great inspiration for me to go to SKSJAPAN2024, talk to working people, and feel the passion of many of them. In addition, obtaining permission from the relevant parties and conducting a street survey in front of Matsumoto Station was also a valuable experience Many people helped and supported us. There were many times when we worried and shed tears, but just like last year, I want to be respectful to everyone who helped me, and I have a strong desire (passion) to write a great report and repay them for their help. I was able to stay motivated for the last nine months because of that. I treasure all the kind words of encouragement I received. I believe that even after the 25th Nikkei STOCK League is over, they will continue to support me. My life has changed completely. I have made many new friends and experienced many new things. I am so glad that I took the courage to enter this cont I want to continue taking on new challenges and gaining new experiences and learning new things. (Sakata)

This was my second time participating in the Nikkei Stock League, and I felt that my investment values had changed. Originally, I had the image that "investment = gambling", but through this contest, I realized how much investment can be a star. I felt that they have the power to develop Japanese society by incorporating startups. With the goal of expanding the future of food in Japan, we are introducing the projects that various companies are working on and the results of those p I was able to learn more about their thoughts. Also, when I think about the future from the consumer's perspective, I realized that it is important to make investments that can support co I realized that there is real value in having the opportunity to participate in the Nikkei Stock League. I would like to thank everyone who gave me this valuable opportunity. (Hanaoka)

At first, I didn't have much interest or knowledge in economics or investment, but I took the courage to join the Nikkei Stock League and gained a wealth of experience that I couldn't find anywh It was a wonderful experience. First of all, I learned about current social issues, especially the protein crisis, animal welfare, and environmental pollution Instead of just researching the issues and solutions on the Internet like in school, students should take the issues personally and learn by listening to interviews and res Also, the theme of this time was PSMiM, a field that will continue to develop and spread, so I was able to fully I was very excited to learn about technologies and ideas that I had never heard of before. I think there are some interesting technologies and ideas, so I would like to look into them. This time, I focused on how to use microorganisms in the food indu I learned about other ways to use it in biology, so I would like to explore those as well. Also, by participating in the Nikkei Stock League, I hope to be able to meet the needs of many workin I was able to broaden my horizons by connecting with my classmates. Participating in SKSJAPAN2024 was particularly meaningful, and I gained a lot of experience in the Japanese food tech i I felt that listening to sessions by people at the forefront of the field and being able to ask questions directly would be beneficial for my future. (Koizumi)

6 Thanks to everyone who helped

ÿ Mr. Kenji Abe, Ajinomoto Co., Inc. ÿ Mr. Hiroyuki Saito, Ajinomoto Co., Inc. ÿ Mr. Toshihiko Fukumatsu, Ikeda Tohka Kogyo Co., Ltd. ÿ Mr. Takahiro Kamiki, Shimadzu Corporation ÿ Person in charge, Taiyo Kagaku Co., Ltd. ÿ Mr. Eiichiro Kimura, Tokyo University of Science ÿ Mr. Fumiki Nomoto, Nagase & Co., Ltd. ÿ Ms. Haruna Futaba, Nikkei BP Inc. ÿ Mr. Tetsuo Katsumata, Nikkei BP Inc. ÿ Ms. Miki Baba, Nikkei BP Inc. ÿ Ms. Kaho Toyama, Japan External Trade Organization ÿ Mr. Ayataro Naoe, Japan External Trade Organization ÿ Mr. Kei Kobayashi, Japan External Trade Organization ÿ Mr. Kazuki Yoshida, Ministry of Agriculture, Forestry and Fisheries ÿ Ms. Ohno Yuko, House Foods Group Holdings Inc. ÿ Ms. Hisaoka Reiko, Fujiwara Techno Art Co., Ltd. ÿ Mr. Kakino Haru, Mitsui Fudosan Co., Ltd. ÿ Mr. Sawano Takeshi, Mitsui & Co., Ltd. ÿ Mr. Raikai Junichiro, Mirai Advisory Board, euglena Co., Ltd. ÿ Ms. Ueda Noriko, Megmilk Snow Brand Co., Ltd. ÿ Mr. Arima Akizumi, Beyond Next Ventures Inc. ÿ Mr. Saikawa Kenta, SMBC Nikko Securities Inc. ÿ Mr. Michibata Kaname, SMBC Nikko Securities Inc. ÿ Ms. Mimura Akiko, SMBC Nikko Securities Inc. ÿ Mr. Sumi Tomoyuki, UnlocX Inc. ÿ People we spoke to at SKSJAPAN2024 ÿ People who cooperated with our awareness survey *Only people who have given us permission to post are featured

I would like to conclude this article by expressing my gratitude to the various companies and government agency officials who kindly agreed to be interviewed, as well as to Nihon Keizai Shimbun and Nomura Holdings, who provided us high school students with this wonderful learning opportunity.

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