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Japan Adds Western Flavor to Its Traditional Diet

Fawzi A. Taha
(202) 219-0610

With rapid economic growth and increasing per capita income, the Japanese are eating more, and what they are eating has more variety.

Over the last 30-plus years, the traditional Japanese diet—heavily reliant on rice and other food grains, sweet potatoes, fish, shellfish, and seaweeds—has become somewhat “Westernized.” Meals now include more red meats, poultry, milk and other dairy products, eggs, fruit, and vegetables, as well as processed food, such as pasta, ham, bacon, catsup, and fruit beverages.

The Declining Role of Cereals

Per capita consumption of cereals—rice, wheat, barley, and other food cereals—declined from 343 to 228 pounds per year between 1955 and 1990. Although rice is the staple of the Japanese diet, consumption of rice decreased from 244 pounds per person in 1955 to 154 pounds in 1990. Japan's per capita wheat consumption, on the other hand, increased from 55 pounds in 1955 to 70 pounds in 1990.

In the 1950's, the Japanese consumed a substantial amount of bar-

ley and corn. However, consumption of these cereals decreased significantly from 44 pounds per capita in 1955 to 4 pounds in 1990. But in the last 10 years, the Japanese have consumed a growing amount of corn in the form of high-fructose corn syrup, corn starch, and corn flakes.

Average daily Japanese food intake increased from 2,240 kilocalories in 1955 to 2,637 in 1990. Cereals supplied two-thirds of the population's total daily caloric intake in 1955, but only 39 percent in 1990. Rice alone provided almost half of the population's total daily calories in 1955, but declined to 26 percent in 1990. Wheat came second, sup-

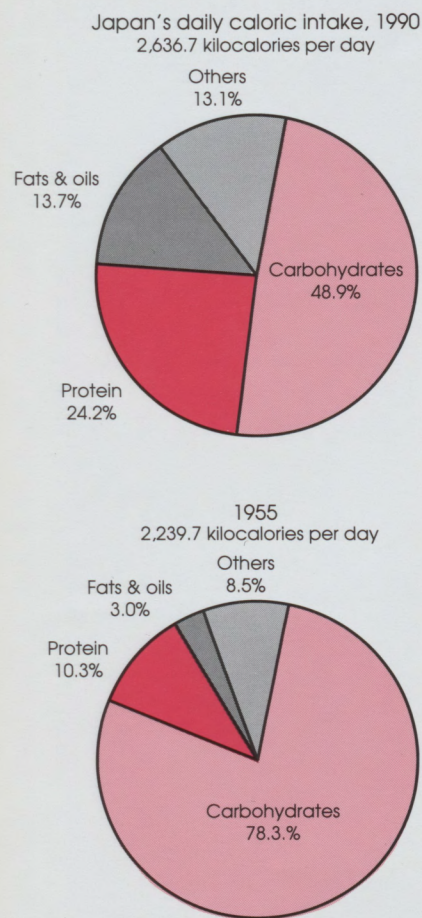


Although still the staple food in Japan's diet, rice is being consumed less. Instead, the Japanese are eating more red meats, poultry, milk and other dairy products, eggs, fruit, vegetables, and processed food.

The author is an agricultural economist with the Agricultural and Trade Analysis Division, Economic Research Service, USDA.

Figure 1

Japanese Diet Expands and Diversifies



plying a little less than 11 percent of the daily caloric intake in 1955, peaked to nearly 13 percent in the mid-1970's, and then decreased to cover only 12 percent of daily calories in 1990. While barley and corn provided 8.3 percent of daily caloric intake in 1955, these cereals now provide less than 1 percent.

Rising Role of Meat

The Japanese consume more fish and shellfish than all meats put together. Japanese per capita consumption of fish and shellfish is second only to that in Iceland, and is five times higher than in the United States.

Japanese consumption of fish and shellfish increased between

1955 and 1990—from 58 pounds per year to 82 pounds. During this time, consumers have shifted away from lower-priced fish, such as sardines, mackerel, and herring, toward higher-priced items, such as salmon, tuna, shrimp, and lobster.

But Japan's taste for meat has risen rapidly, pushing consumption up nearly ninefold during 1955-90—from 7.3 to 63.1 pounds per capita per year. (This is far below the 168 pounds per capita per year consumed in the United States.) Since 1955, per capita consumption of chicken rose 35-fold to 22.7 pounds per capita, followed by pork at 25.4 pounds, beef at 13.4 pounds, and other meats at 1.5 pounds (table 1). Meats are especially popular with Japanese consumers under age 40.

Whale meat has nearly disappeared from the Japanese diet due to an international ban on commercial whaling. Per capita consumption was 2 pounds in 1955, increased to a peak of 5.3 pounds in 1962, but declined steadily to less than 0.1 pound in 1990.

Caloric intake from meat, poultry, fish, and shellfish gained substantially in Japanese diets. These four protein sources contributed 4.5 percent of daily calories in 1955 and 12 percent of daily calories in 1990.

'Western' Foods More Popular

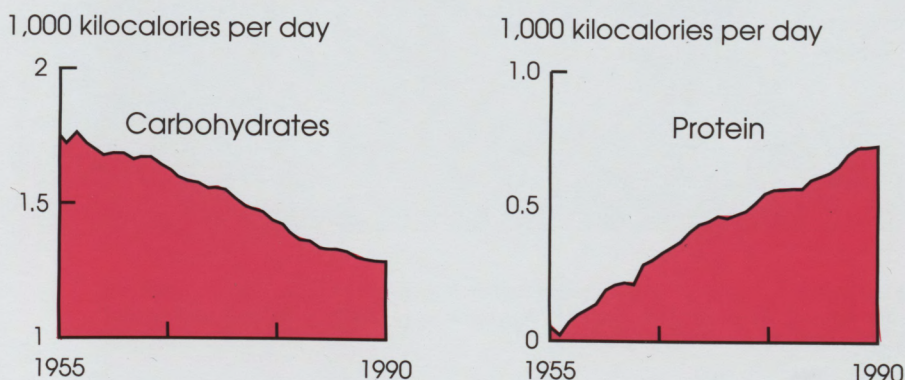
Japanese consumption of milk and dairy products increased six-fold from 1955 to 1990—from less than 27 pounds per capita to over 183 pounds. In comparison, Americans consume over two and half times as much milk and dairy products.

Egg consumption increased five-fold between 1955 and 1990—from 7.5 to 36.4 pounds per year. Japanese consumers eat 6.8 pounds more eggs a year than do Americans, despite mounting concern about cholesterol.

The Japanese consume about half the Americans' daily level of fats and oils. However, Japan's per capita consumption increased substantially from 6 to 31.5 pounds between 1955 and 1990. And, fats and oils' contribution to caloric intake more than quintupled. Health and nutritional considerations have encouraged consumers to substitute vegetable oils for animal fats such as lard and tallow. Cooking with vegetable oils has become commonplace, with palm oil the largest single imported oil. Rapeseed oil and soy oil consumption is much higher than palm oil. These are milled and extracted domestically from imported seeds.

Figure 2

Japanese Diets Include Fewer Carbohydrates, More Protein



Per capita consumption of starches and flours—notably from potatoes and corn—grew from 10.1 to 35.3 pounds a year during 1955-90. Similarly, consumption of fruit increased from 27.1 to 82.2 pounds per capita, and vegetable consumption (minus potatoes) grew from 182 to 236 pounds per capita. Growth in fruit and vegetable consumption was strongest between 1955 and 1970, but slowed in 1980-90. Because they are low in calories, fruit and vegetables added only marginally to caloric intake—from 4 to 5.2 percent of total daily calories between 1955 and 1990.

Consumption of pulses (mostly soybeans in the form of products, such as tofu and miso, but also peas, lentils, adzuki beans, and others) remained relatively constant at 20.5 pounds per year (after peaking at 23 pounds in 1969).

Among foods being eaten less often is sugar. Per capita sugar consumption first increased from 27.1 pounds in 1955 to a peak of 62 pounds in 1973, then declined to

Table 1
Japanese Consumption Includes More Meat and Fish, Less Cereal

Food	1955	1970	1990
	Pounds per year		
Cereals	343.5	282.6	228.2
Rice	244.1	209.7	154.3
Wheat	55.3	67.9	69.9
Other cereals	44.1	5.1	4.0
Meats	7.3	29.5	63.1
Beef and veal	2.4	4.6	13.4
Pork	1.8	11.7	25.4
Poultry	.7	8.4	22.7
Whale	2.0	3.3	.1
Other meats	.4	1.5	1.5
Fish and shellfish	58.0	69.7	81.8
Eggs	7.5	32.6	36.4
Milk and dairy products	26.7	110.5	183.4
Fruit	27.1	82.9	82.2
Vegetables	181.7	254.9	236.3
Potatoes	101.6	35.5	45.4
Starches	10.1	17.9	35.3
Pulses	20.7	22.3	20.5
Sugar	27.1	59.3	46.3
Fats and oils	6.0	19.8	31.5

Source: Japan's Statistical Yearbook of the Ministry of Agriculture, Forestry, and Fisheries, 1990-91 and previous issues.



Japan's taste for meat is rising rapidly, especially among Japanese consumers under age 40. Between 1955 and 1990, for example, per capita consumption of chicken rose 35-fold to 22.7 pounds.

reach 46.3 pounds in 1990 as other sweeteners partially substituted for sugar. Japanese per capita consumption of caloric sweeteners—including sugar, high-fructose corn syrup, glucose, and dextrose—was 68.7 pounds in 1990, compared with 137.7 pounds in the United States.

Sugar provided 5.7 percent of daily caloric intake in 1955 and increased to 11.5 percent in the mid-1970's. But due to declining consumption, sugar provided only 8.4 percent of total daily calories by 1990.

During the 1970's and 1980's, french fries became popular, contributing to rising oil and potato consumption. Per capita consumption of potatoes, which first declined steadily from 102 pounds in

1955 to 34.6 pounds in 1974, rose to nearly 45.4 pounds by 1990. However, daily caloric intake from potatoes went down from 6 percent of total calories to less than 2 percent during 1955-90. In 1955, sweet potatoes made up 72 percent of total potato consumption, but decreased to 26 percent in 1990 because of the declining preparation of traditional dishes using sweet potatoes.

Self-Sufficiency Down

Japanese farmers have achieved high levels of output from the average unit of land. However, with limited arable land and rising food requirements, Japan has become less self-sufficient in the production of many foods. Imports, particularly from the United States, are taking up the slack.

Self-sufficiency describes how well a country's domestic production meets its needs for a particular product. For example, a self-sufficiency rate of 100 for a commodity means a country produces enough to cover national consumption without the help of imports.

Following World War II, the Japanese Government initiated several programs to achieve self-sufficiency in rice production in order to compensate for the loss of its rice-producing colonies (Korea and Taiwan) and to avoid repetition of the severe food shortages experienced during the war. By the late 1960's, rice imports were eliminated, and Japan has since been essentially self-sufficient in rice.

By 1971, Japan had become the world's fourth largest rice exporter, selling 966,178 tons, or 10.5 percent of world shipments, at heavily subsidized export prices. Under pressure from other major rice exporters, Japan reduced its rice production to cover domestic needs.

Self-sufficiency decreased to 100 percent in 1990 (table 2), but tiny

Table 2

Japan Has Become Less Self-Sufficient in the Production of Many Foods

Food item	1955	1970	1990
		Percent ¹	
Cereals	87.7	48.1	29.9
Rice	109.8	106.2	100.1
Wheat	40.6	9.1	15.2
Barley ²	61.6	28.4	12.5
Naked barley	87.3	73.5	92.0
Corn ²	51.3	.6	0
Meats	99.7	89.3	69.5
Beef and veal ^{3,4}	99.3	89.5	50.6
Pork ³	100.0	97.9	74.2
Chicken ³	100.0	97.7	82.3
Whale	100.0	100.0	66.7
Other meats	100.0	8.3	3.1
Fish and shellfish	106.6	101.9	78.9
Eggs	100.3	97.2	98.0
Milk and dairy products	89.9	89.4	77.5
Fruit	103.7	83.9	63.1
Vegetables	100.0	99.4	91.0
Potatoes	100.5	100.1	92.5
Starches ³	117.8	96.5	95.0
Pulses	51.0	13.0	7.8
Sugar ⁵	0	2.9	34.0
Fats and oils ⁶	79.4	81.9	87.0

Notes: ¹Self-sufficiency rate is the proportion of domestic production to total consumption. ²Includes both food and feed. ³Relies partially on imported feed grains and/or oilseeds, which reduces self-sufficiency rates. ⁴Does not include imported beef diaphragm. ⁵Japan shifted from importing refined sugar to importing totally raw sugar. ⁶Higher rates reflect increased oil-crushing capacity and use.

amounts of specialty rice are imported and converted into other products, such as Awamori (an alcoholic drink) and rice cakes.

Japan has depended on imports for wheat supplies, despite policies making wheat production very profitable. With self-sufficiency increasing to only 15 percent by 1990 (the rate reached a low of 4 percent in 1973), Japan was the fourth largest wheat importer when it bought 5.5 million tons in 1990. Most barley and corn were also imported, due to domestic production declining to only 323,000 and 1,000 tons, respectively, in 1990.

Self-sufficiency in livestock products declined in 1955-90, as production lagged behind increasing demand. In 1955, Japan was self-sufficient in pork, chicken, whale, other meats, and eggs; 99.3 percent self-sufficient in beef; and 90 percent self-sufficient in milk and dairy products. But by 1990, Japan imported 50 percent of its beef supply, 25 percent of pork, 18 percent of chicken, 22 percent of milk and dairy products, and 2 percent of eggs. Domestic production of livestock products has increased at a slower rate since the mid-1980's, due to high production costs in the Japanese livestock sector and reduced barriers to trade.

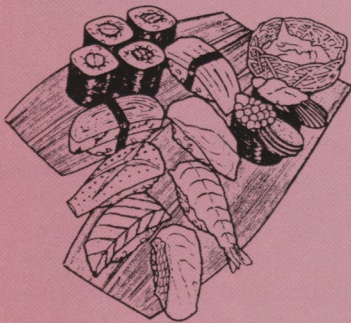
Growth Rates Varied Between Foods

Growth rates for per capita consumption and daily caloric intakes reported in this article reflect rates during 1955-90. However, some rates varied within that period. The table below reports average annual growth rates of various food groups over four periods: 1955-60, 1960-70, 1970-80, and 1980-90.

Daily caloric intake in Japan increased at an average annual rate of 0.44 percent over the 35-year period. Most gains, however, occurred in the 1960's. Caloric intake stagnated during the 1970's, then increased annually by 0.36 percent during the 1980's.

Rice

Rice consumption declined at an average annual rate of 1.69 percent during 1955-90. After increasing 0.63 percent in 1955-60, average annual per capita rice consumption fell in the remaining three periods.



Wheat

Wheat consumption increased at an annual rate of 0.08 percent over the 35-year period. Wheat consumption grew most rapidly during 1960-70, but declined at an annual rate of 0.14 percent during 1980-90.

Cereals

Consumption of other cereals, such as barley and corn, declined on average 6.8 percent per year in 1955-90, with a larger decrease from 1955 to 1970 and a small increase in 1980-90 due to rising corn consumption.

Meat and Poultry

Red meat and poultry consumption grew 6.08 percent annually over the 35-year period. Chicken had the strongest growth, with an annual rate of 11 percent, followed by pork at 7.26, beef at 5.11 percent, and other meat at 4.2 percent. Growth rates for beef and veal increased steadily over the four periods, while growth in chicken and pork con-



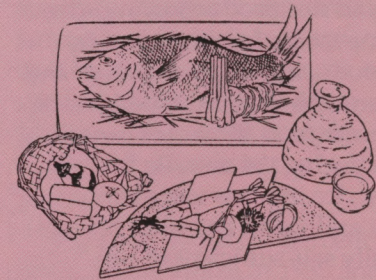
sumption slowed during the 1970's and 1980's. These results could mean that Japanese beef consumption is picking up, while that of pork and chicken will grow more slowly toward the end of this decade.

Fish and Shellfish

Per capita consumption of fish and shellfish grew slowly, at an average annual rate of 1.06 during 1955-90. The strongest rise in fish consumption was in the 1950's at a 1.79-percent rate, before slowing to less than half that rate between 1960-80. Consumption grew nearly 1 percent per year in the 1980's.

Milk and Dairy, Fats and Oils

Consumption of milk and dairy products, as well as fats and oils, grew at annual rates of over 4 percent during 1955-90. The strongest growth occurred in 1955-60, with slower, steady growth through 1990.



Japan's self-sufficiency in fish and shellfish also declined—from 107 percent in 1955 to 79 percent in 1990. In value terms, fish and shell-

fish imports accounted for \$9.58 billion, which exceeded both the import value of cereals (\$4.1 billion) and of meat and processed meat products (\$4.83 billion).

Japan is no longer self-sufficient in fruit. The self-sufficiency rate dropped from over 100 percent in 1955 to 63 percent in 1990, reflect-

Fruit and Vegetables

Per capita consumption of fruit and vegetables grew at annual rates of 2.33 and 0.7 percent, respectively, during 1955-90. However, growth was flat or

slightly negative during the 1970's and 1980's along with shifts from lower priced bulky items to more expensive, high-quality exotic items.

Sugar

Sugar consumption increased in the 1960's, but fell in the 1970's and 1980's.

Pulses

Per capita consumption of pulses remained unchanged for the overall period 1955-90, but grew at a rate of 4.36 percent from 1955-60.

Daily Caloric Intake Stagnated During the 1970's, Then Increased Slightly in the 1980's

Food supply	Average change per capita per year				1955-90
	1955-60	1960-70	1970-80	1980-90	
	<i>Percent</i>				
Cereals:	-0.71	-1.62	-1.32	-0.87	-1.34
Rice	.63	-2.33	-1.93	-1.22	-1.69
Wheat	1.07	2.40	.44	-.14	.08
Other cereals	-14.9	-9.90	-2.52	.55	-6.80
Meats	8.60	8.49	4.90	2.73	6.08
Beef and veal	1.68	3.67	4.79	5.23	5.11
Pork	10.80	11.66	5.78	2.34	7.26
Chicken	4.11	19.5	7.12	3.32	11.05
Whale	12.30	-3.59	-12.90	-14.85	-6.80
Other meats	16.57	11.2	1.76	-4.95	4.20
Fish and shellfish	1.79	.79	.71	.99	1.06
Eggs	6.69	9.47	-.06	1.55	4.32
Milk and dairy products	11.88	7.91	2.87	2.39	4.78
Fruit	10.04	5.93	.01	-.24	2.33
Vegetables	3.15	2.11	-.20	-.33	.66
Potatoes	-6.86	-7.24	1.00	1.88	-2.14
Starches	6.83	2.24	3.28	3.08	3.20
Pulses	4.36	.27	-2.22	1.39	-.09
Sugar	3.56	5.39	-1.18	-.80	1.51
Fats and oils	8.85	7.36	3.17	1.08	4.65

ing consumers' growing appetite for exotic, foreign fruit.

Self-sufficiency in vegetables, potatoes, starches, and sugar dropped slightly from over 100 to

over 90 percent in 1955-90, while that of pulses went down from 51 percent to only 7.8 percent during the same period. It is cheaper to im-

port pulses than to produce them locally.

Fats and oils is the only group to increase in self-sufficiency—from 79.4 percent in 1955 to 87 percent

in 1990. This is mainly due to rapid growth in its oil-crushing industry, which must rely on imported oil-seeds for supplies.

Imports From United States Take Up the Slack

Japan is the second largest importer of agricultural products, behind Germany, accounting for 8.1 percent of total world trade in agricultural products in 1990.

Japan is also the largest market for many U.S. agricultural products, including cereals, soybeans, meats, feedstuffs, cotton, tobacco,

citrus fruit, vegetables, and fish and shellfish. Japan's agricultural imports totaled \$28.7 billion in 1990, 38 percent of which came from the United States.

The United States exported nearly 20 million tons of cereals to Japan in 1990. With 73 percent of this market, the United States is easily the largest cereal exporter to Japan (table 3).

Of the 1.3 million tons of imported red meat and poultry, the United States supplied 80 percent of Japan's edible offals, 43 percent of beef and veal, 34 percent of poultry, and 13 percent of pork. In 1990, Japan imported 2.2 million tons of

fish and shellfish, 23 percent of which came from the United States.

Fruit imports totaled 3.4 million tons in 1990, with the U.S. share averaging 30 percent. The U.S. share is much higher for particular fruit—98 percent for oranges, 96 percent for lemons and grapefruit, and 75 percent for dried fruit.

Likewise, vegetable imports went up from 12,000 tons to over 1.5 million tons, with the U.S. share around 23 percent.

The United States supplied 18 percent of the 572,000 tons of fats and oils Japan imported in 1990 and 74 percent of the 4.7 million tons of soybeans.

The United States also supplied a third of all potatoes exported to Japan, amounting to 128,300 tons. Over 81 percent of these were frozen french fries.

Table 3

Japan Has Become a Large Market for U.S. Food Products

Agricultural product	1990 imports 1,000 tons	U.S. Share Percent
Cereals		
Corn	16,008	88
Sorghum	3,763	75
Barley	1,272	0
Soybeans	4,681	74
Wheat	5,474	56
Meats		
Beef and veal	376	43
Pork	343	13
Chicken	301	34
Edible offals	108	80
Other	107	3
Prepared or preserved meat	54	56
Fish and shellfish	2,207	23
Eggs	17	28
Milk and dairy products	2,237	8
Fruit	2,979	30
Citrus fruit	406	97
Vegetables	1,551	23
Potatoes	399	32
Sugar	1,691	0
Fats and oils	572	18

Source: United Nations trade data, 1991.

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