Surimi Paste, Supply Track
Executive Summary, Q3 2021

Prepared by Urner Barry Consulting for the Genuine Alaska Pollock Producers, GAPP

The following report is only an executive summary of all the data points analyzed. Because of the many ways the data analyzed can be presented, these summaries only provide a general overview of each data series. However, the data requested by the members is available in many ways in the excel files provided. All data can be relatively easily manipulated to fit each member's presentation preference, whether in tables, charts, or raw data.

The nuances for many calculations are many, as these vary widely from species to species, origins, destinations, etc. The methodologies for many species are relatively simple since trade data can be assumed to be a function for its production in many cases. However, this is not always the case for specific countries and species. Also, some calculations with limited data and rudimentary methods had to be used to arrive at a "best estimate." Don't hesitate to contact the analyst directly to make changes, suggestions, or corrections for details on each species or market. After exhausting most options available to obtain reliable data, we firmly believe that the estimates presented here are a good approximation of the species, origins, and destinations requested.

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Table of Contents

UrnerBarry CONSULTING

World Production through Q3

Global surimi production suggests an increase of about 8 percent compared to last year. While 8 percent may seem quite large for a market this size, we must consider that production dipped last year due to the pandemic. If we compare it to 2019, production in 2021 through Q3 only increased by about 2 percent.

We saw noticeable increases from the main species Alaska Pollock, Itoyori, and the category of "other." These estimates also suggest an increase of about 9 percent under all "tropical" surimi, adding up nearly 400 thousand metric tons through Q3 compared to last year; however, it only represents an increase of 3 percent compared to 2019.

According to these estimates through Q3, tropical surimi production accounts for nearly 59 percent of the global supply, while Alaska Pollock covers about 27 percent.
As a side note, we must mention that we were unable to estimate Chinese production of tropical surimi by species; we were only able to estimate these production figures as a whole category.

	2017	2018	Y-o-Y % Chg	2019	Y-o-Y % Chg	2020	Y-o-Y % Chg	2021	Y-o-Y % Chg
AK Pollock	199,942	191,565	- 4.2%	182,523	- 4.7%	158,494	- 13.2%	187,769	+18.5%
Itoyori	45,099	49,949	+10.8%	48,020	- 3.9%	46,425	- 3.3%	62,644	+34.9%
Eso	40,026	43,235	+8.0%	45,621	+5.5%	40,348	- 11.6%	40,048	- 0.7%
Ribbon	38,198	40,760	+6.7%	41,272	+1.3%	39,513	- 4.3%	36,414	- 7.8%
Bigeye	24,543	30,125	+22.7%	29,994	- 0.4%	26,062	- 13.1%	33,577	+28.8%
Carp	20,589	26,863	+30.5%	27,283	+1.6%	27,378	+0.4%	29,016	+6.0%
Pac Whiting	25,638	24,198	- 5.6%	26,785	+10.7%	29,732	+11.0%	25,247	- 15.1%
JP Pollock	23,967	22,248	- 7.2%	32,032	+44.0%	35,309	+10.2%	27,320	- 22.6%
Croaker	17,679	17,292	- 2.2%	25,376	+46.7%	27,184	+7.1%	23,858	- 12.2%
Goatfish	19,350	13,175	- 31.9%	13,927	+5.7%	13,808	- 0.9%	19,435	+40.8%
Seabream	10,239	13,077	+27.7%	14,204	+8.6%	10,508	- 26.0%	10,654	+1.4%
Flying Fish	7,507	10,055	+34.0%	11,492	+14.3%	8,766	- 23.7%	7,865	- 10.3%
Hoki	4,567	4,348	- 4.8%	6,023	+38.5%	4,977	- 17.4%	4,208	- 15.5%
SBW	2,771	1,926	- 30.5%	2,779	+44.3%	2,489	- 10.4%	2,415	- 2.9%
Atka Mackerel	315	1,437	+356.6%	1,549	+7.8%	2,104	+35.9%	3,330	+58.3%
NBW	1,870	2,195	+17.4%	2,195	-	1,544	- 29.6%	1,219	- 21.1%
Sardine	58	128	+120.7%	844	+559.4%	514	- 39.1%	551	+7.2%
Other*	*136,543*	*143,446*	*+5.1%*	*156,171*	*+8.9%*	*154,314*	*- 1.2%*	*165,233*	*+7.1%*
Total	**618,900**	**636,021**	**+2.8%**	**668,088**	**+5.0%**	**629,468**	**- 5.8%**	**680,803**	**+8.2%**

Other includes all tropical surimi produced in China, as well as sardine and other species not listed mainly for tropical surimi*

Table 1. World surimi production estimates by species. Source: Urner Barry Consulting, GAPP.

	2017	2018	Y-o-Y % Chg	2019	Y-o-Y % Chg	2020	Y-o-Y % Chg	2021	Y-o-Y % Chg
Tropical	339,184	361,114	+6.5%	386,077	+6.9%	366,927	- 5.0%	399,728	+8.9%
AK Pollock	199,942	191,565	- 4.2%	182,523	- 4.7%	158,494	- 13.2%	187,769	+18.5%
Carp	20,589	26,863	+30.5%	27,283	+1.6%	27,378	+0.4%	29,016	+6.0%
Pac Whiting	25,638	24,198	- 5.6%	26,785	+10.7%	29,732	+11.0%	25,247	- 15.1%
JP Pollock	23,967	22,248	- 7.2%	32,032	+44.0%	35,309	+10.2%	27,320	- 22.6%
Hoki	4,567	4,348	- 4.8%	6,023	+38.5%	4,977	- 17.4%	4,208	- 15.5%
SBW	2,771	1,926	- 30.5%	2,779	+44.3%	2,489	- 10.4%	2,415	- 2.9%
Atka Mackerel	315	1,437	+356.6%	1,549	+7.8%	2,104	+35.9%	3,330	+58.3%
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Sardine Peru	58	128	+120.7%	844	+559.4%	514	- 39.1%	551	+7.2%
Total	**618,900**	**636,021**	**+2.8%**	**668,088**	**+5.0%**	**629,468**	**- 5.8%**	**680,803**	**+8.2%**

Other Species is included under tropical surimi, including China*

Table 2. World surimi production estimates by species' category. Source: Urner Barry Consulting, GAPP.

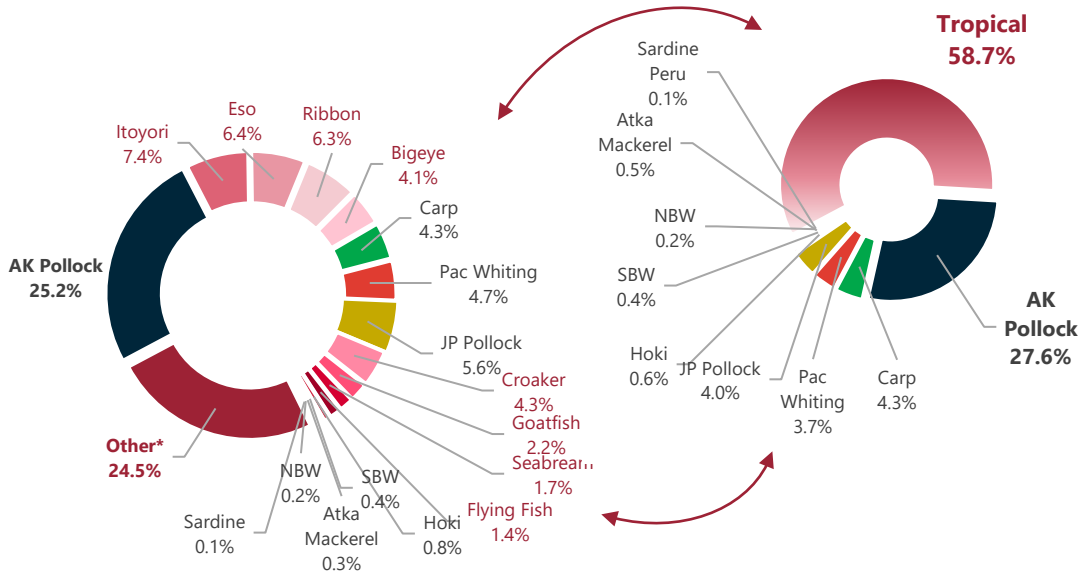

Figure 1 and 2. Pie chart of world surimi production by species and category. Source Urner Barry Consulting, GAPP.

Alaska Pollock Surimi

Production of Alaska pollock surimi through Q3 shows an increase of about 9 percent compared to last year. Due to the pandemic disruption, we expected production to increase in 2020. However, production through Q3 in 2021 is still below pre-pandemic levels seen from 2017 through 2019. Further, Q3 surpassed production levels reached since at least 2018 for those quarters.

US Production, Alaska Pollock Surimi (MT)									
	2017	2018	'18 vs. '17	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Q1	71,352	78,451	+ 9.9%	86,026	+ 9.7%	73,647	-14.4%	59,033	-19.8%
Q2	16,763	26,448	+ 57.8%	13,639	-48.4%	14,912	+ 9.3%	32,804	+ 120.0%
Q3	111,827	86,666	-22.5%	82,858	-4.4%	69,935	-15.6%	95,932	+ 37.2%
Q4	7,392	4,653	-37.1%	16,928	+ 263.8%	19,048	+ 12.5%		
Total	207,334	196,218	-5.4%	199,451	+ 1.6%	177,542	-11.0%		
YTD	199,942	191,565	-4.2%	182,523	-4.7%	158,494	-13.2%	187,769	+ 18.5%

Table 3. Alaska Pollock Surimi Production by Quarter. Source: NOAA Fisheries, Urner Barry. *Q3 2021 data is incomplete.

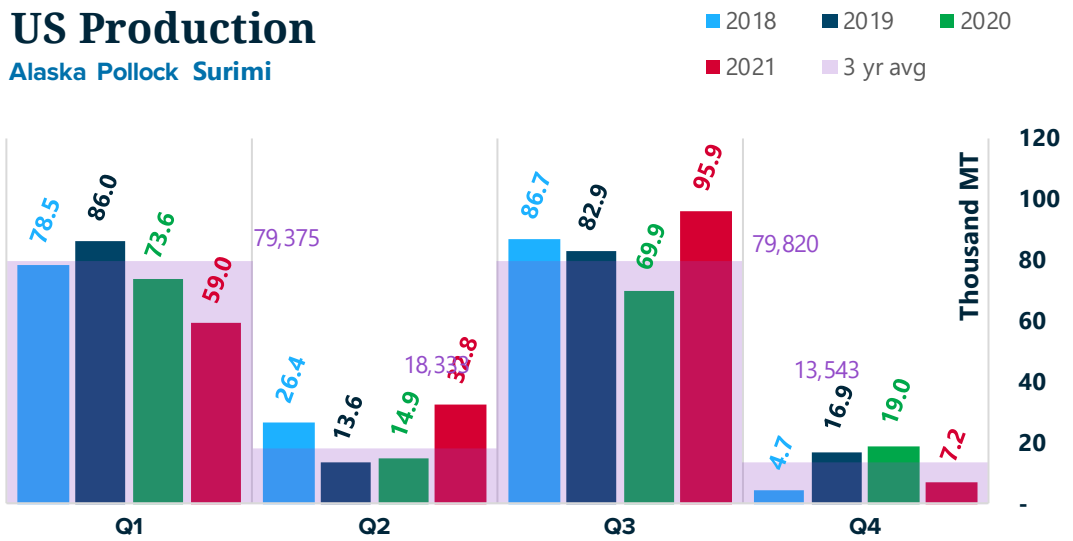

Figure 3. Alaska Pollock Surimi Production by Quarter. Source: NOAA, Urner Barry. *Q4 2021 data is incomplete.

Figures through week 44, which includes part of Q4, show an increase of about 10 percent compared to 2020, and only shy by 1 around thousand metric tons of the figures reached in 2018 totaling 195 thousand metric tons.

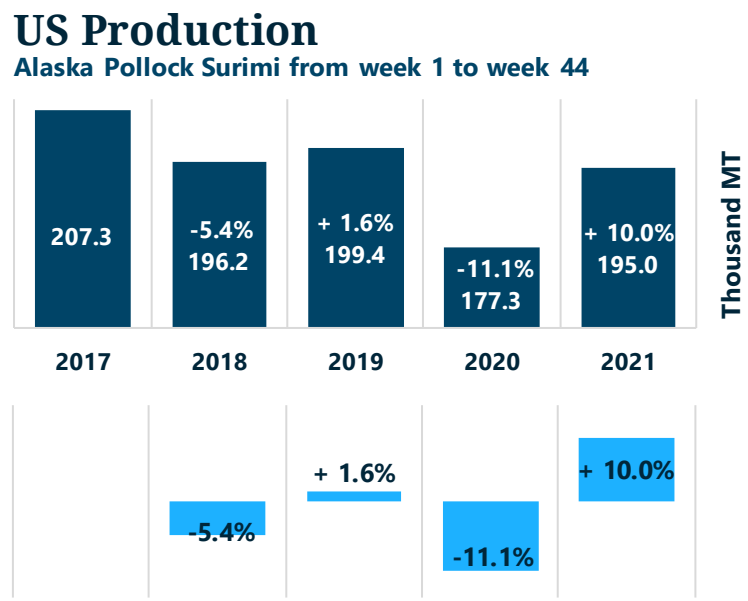

Figure 4. Total Alaska Pollock Surimi Production and YTD through week 32. Source: NOAA Fisheries, Urner Barry Consulting.

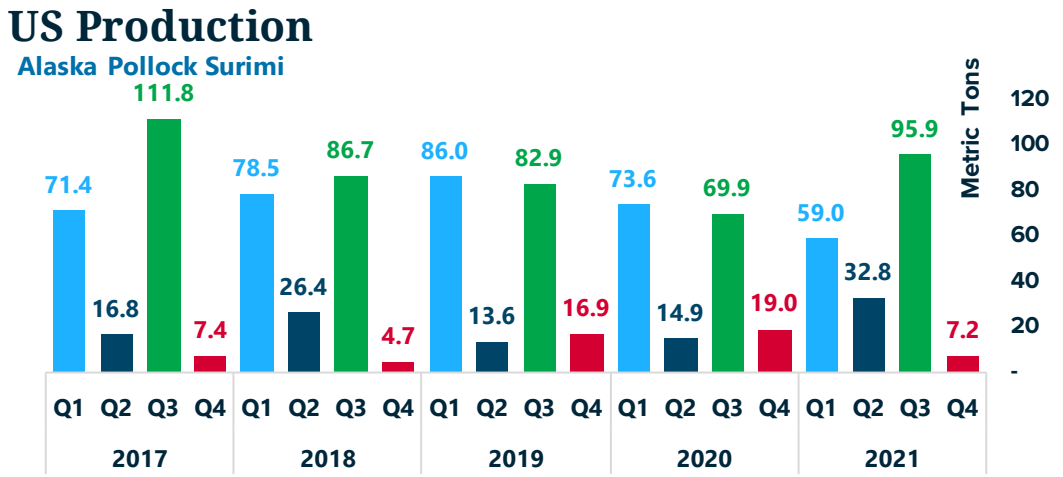

Figure 5. Alaska Pollock Surimi Production by Quarter, linear. Source: NOAA Fisheries, Urner Barry. *Q 2021 data is incomplete.

Alaska Pollock Surimi Trade (Imports)

Countries declaring imports of Alaska pollock surimi increased by 1.6 percent through Q3. Imports in Q3 showed a considerable increase of about 13 percent compared to last year, but almost on par with the volumes declared in 2019.

Alaska Pollock Surimi Imports	*YTD from (Q1 to Q3)						
All Countries							
	2018	2019	'18 vs. '19	2020	'19 vs. '20	2021	'20 vs. '21
Q1	24,349	18,726	-23.1%	15,333	-18.1%	17,201	+ 12.2%
Q2	56,801	57,757	+ 1.7%	53,638	-7.1%	49,361	-8.0%
Q3	42,550	34,814	-18.2%	30,683	-11.9%	34,694	+ 13.1%
Q4	53,111	47,683	-10.2%	46,338	-2.8%		
Total	176,811	158,980	-10.1%	145,992	-8.2%		
*YTD	123,700	111,297	-10.0%	99,654	-10.5%	101,256	+ 1.6%

Table 4. Alaska Pollock Surimi Imports. Aggregate by declaring countries' customs.

Total volume amounted to just over 100 thousand metric tons, which is still lower than the volumes seen in 2018 and 2019 when imports surpassed 110 thousand metric tons. However, due to the increase in production seen in Q2 and Q3, we suspect that imports could show a considerable increase in Q4 this year.

Alaska Pollock Surimi Imports	(Q1 to Q3)						
By Declaring Country through Q3							
	2018	2019	'18 vs. '19	2020	'19 vs. '20	2021	'20 vs. '21
Japan	80,535	74,632	-7.3%	56,560	-24.2%	60,888	+ 7.7%
South Korea	18,277	14,776	-19.2%	15,465	+ 4.7%	15,649	+ 1.2%
France	9,481	9,279	-2.1%	11,412	+ 23.0%	10,234	-10.3%
Spain	3,050	3,644	+ 19.5%	4,926	+ 35.2%	4,600	-6.6%
Lithuania	2,095	2,355	+ 12.4%	4,021	+ 70.7%	5,178	+ 28.8%
Thailand	6,442	3,410	-47.1%	3,573	+ 4.8%	2,008	-43.8%
Poland	921	827	-10.2%	741	-10.4%	951	+ 28.3%
Taiwan	1,564	967	-38.2%	1,728	+ 78.7%	1,023	-40.8%
Norway	360	262	-27.2%	154	-41.2%	160	+ 3.9%
Belarus	610	673	+ 10.3%	836	+ 24.2%	525	-37.2%
Ukrain	365	472	+ 29.3%	238	-49.6%	40	-83.2%
Total	123,700	111,297	-10.0%	99,654	-10.5%	101,256	+ 1.6%

Table 5. Alaska Pollock Surimi Imports by declaring country.

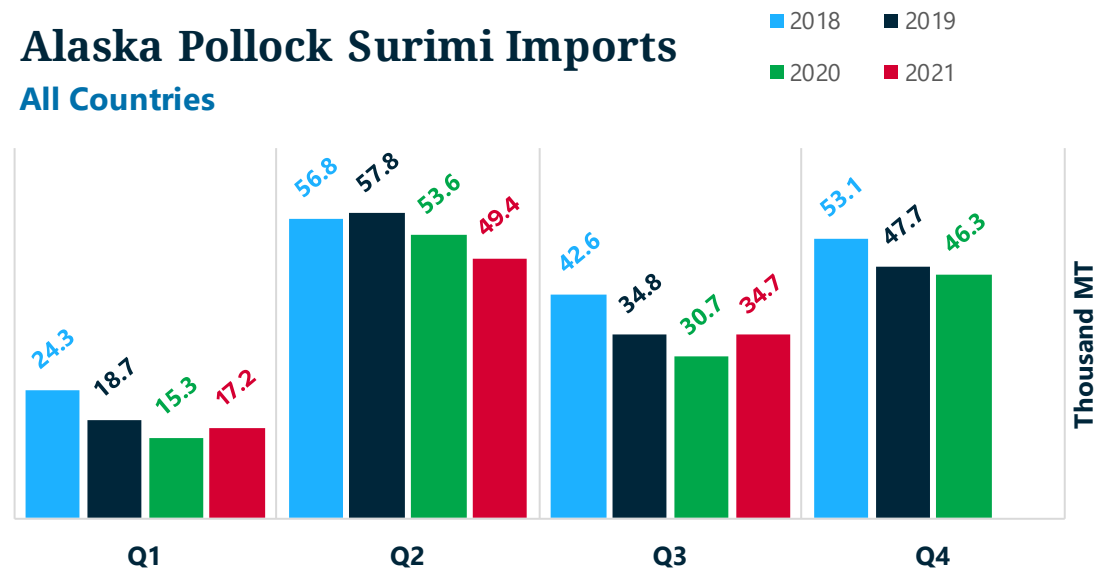

Figure 6. Alaska Pollock Surimi Imports. Aggregate of declaring countries by quarter.

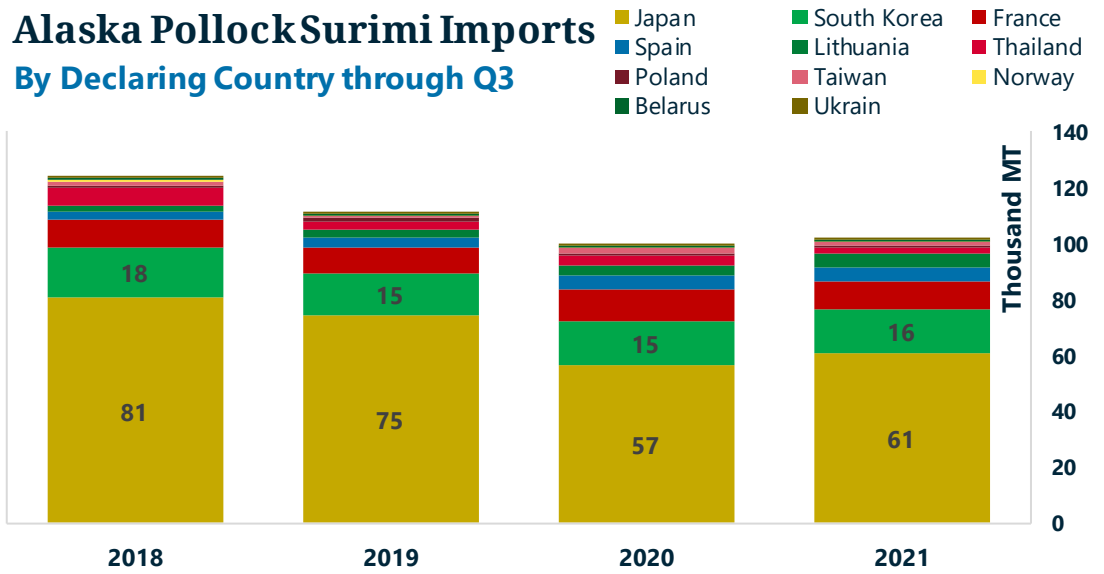

Figure 7. Alaska Pollock Surimi Imports by declaring country.

Alaska Pollock Surimi Trade (Imports), cont.

Although Japanese imports of Alaska pollock surimi increased by about 8 percent compared to 2020, we must consider the significant decrease in volumes of this market in 2020. Imports from South Korea remained relatively unchanged compared to 2020 and 2019. Imports from Spain increased by 29 percent compared to 2020, totaling over 5 thousand metric tons.

When using the declared value by the importing country, we notice a considerable increase in price per metric ton in 2021. In the case of Japan, by far the largest market in terms of volume, prices have hovered around record highs for three straight quarters. South Korea and Thailand also show a similar trend.

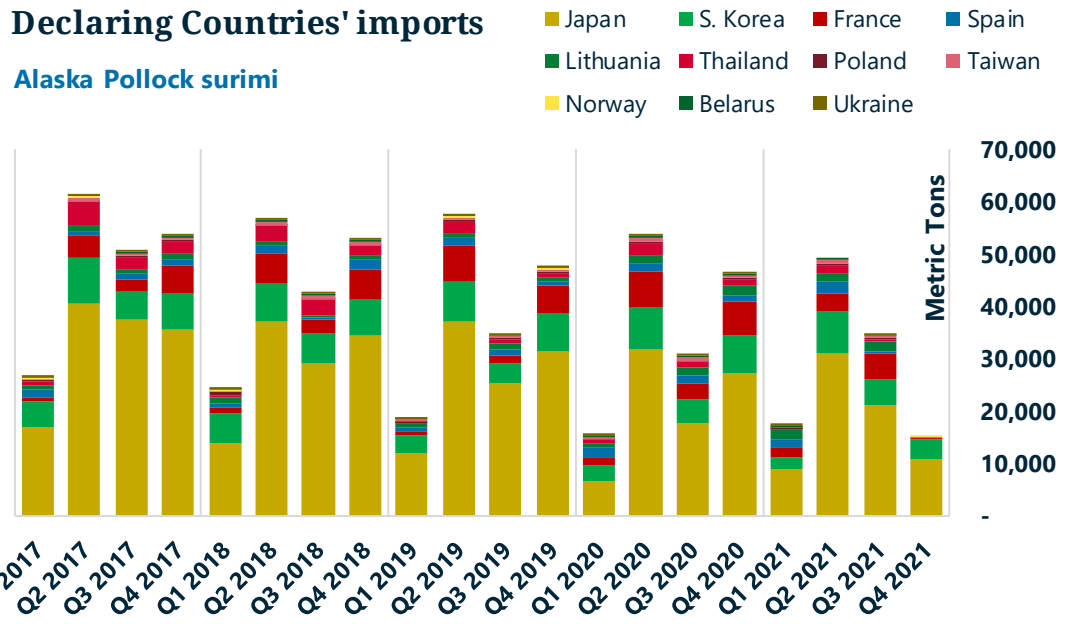

Figure 8. Alaska Pollock Surimi Imports. Linear imports by declaring countries. *Q4 2021 data is incomplete.

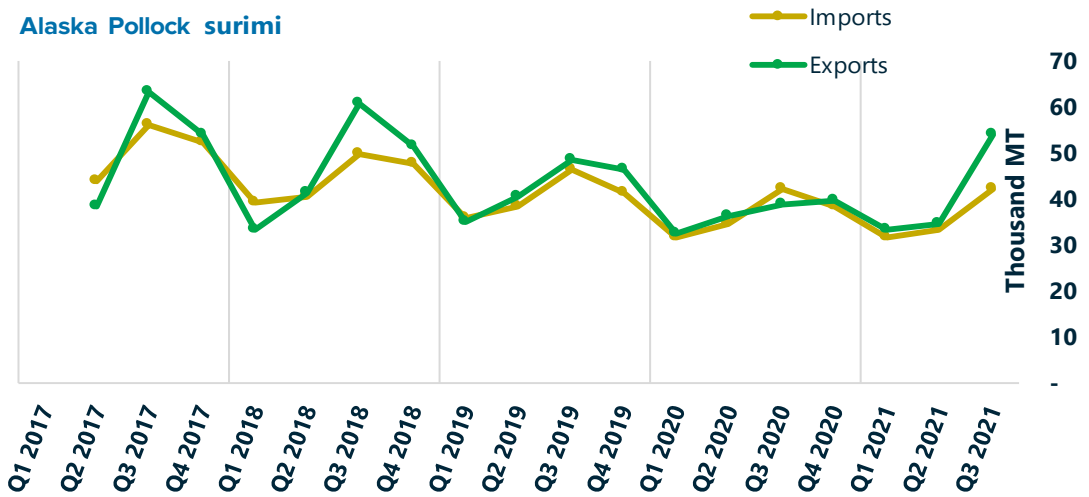

Figure 9. Alaska Pollock Surimi Imports vs. U.S. Alaska Pollock Surimi Exports. Smoothed average.

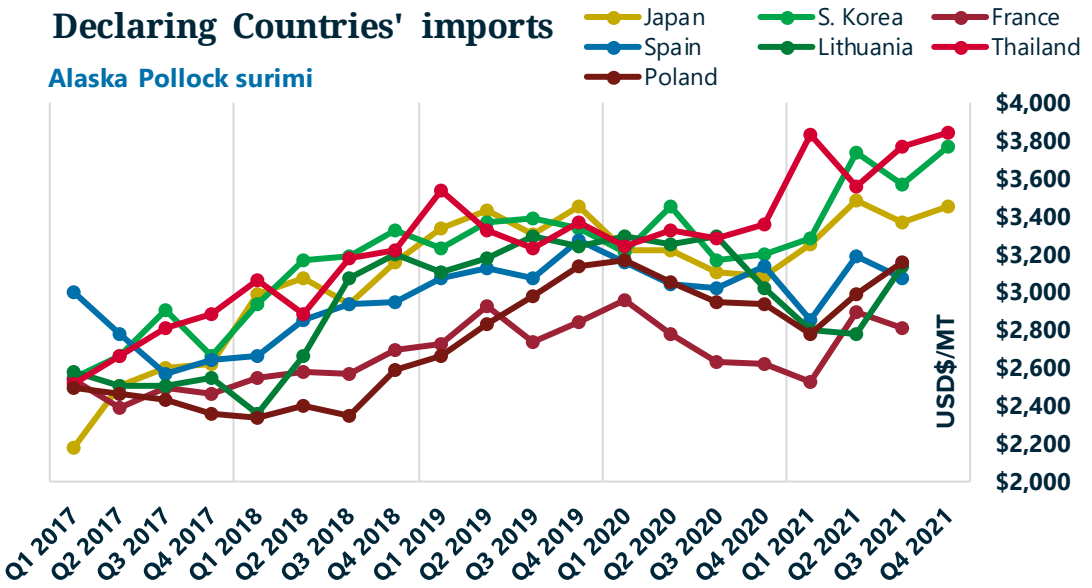

Figure 10. Alaska Pollock Surimi Import Price per MT by declaring country. Q4 2021 data is incomplete.

Alaska Pollock Surimi Trade (U.S. Exports)

When looking at Alaska pollock surimi exports declared by U.S. customs, we noticed a massive increase in Q3. Such an increase suggests a potential increase in imports declared into Q4. Overall exports through Q3 show an increase of about 19 percent compared to 2020. However, they are still lower than 2019 by about 10 thousand metric tons or 5 percent.

When comparing destinations, we believe it is of more value to look at countries declaring imports for a better assessment.

U.S. Alaska Pollock Surimi Exports *YTD from (Q1 to Q3)							
All Countries							
	2018	2019	'18 vs. '19	2020	'19 vs. '20	2021	'20 vs. '21
Q1	47,863	53,299	+ 11.4%	41,806	-21.6%	34,010	-18.6%
Q2	35,070	28,123	-19.8%	30,634	+ 8.9%	34,944	+ 14.1%
Q3	86,180	69,145	-19.8%	46,755	-32.4%	72,953	+ 56.0%
Q4	16,885	23,564	+ 39.6%	32,705	+ 38.8%		
Total	185,998	174,131	-6.4%	151,900	-12.8%		
*YTD	169,113	150,567	-11.0%	119,195	-20.8%	141,907	+ 19.1%

Table 6. Alaska Pollock Surimi Exports (U.S.) by quarter. U.S. Customs, Urner Barry.

U.S. Alaska Pollock Surimi Exports (Q1 to Q3)							
By Declaring Country through Q3							
	2018	2019	'18 vs. '19	2020	'19 vs. '20	2021	'20 vs. '21
Japan	67,792	61,520	-9.3%	36,498	-40.7%	46,185	+ 26.5%
South Korea	62,868	55,514	-11.7%	47,784	-13.9%	64,928	+ 35.9%
France	11,565	12,027	+ 4.0%	11,163	-7.2%	10,056	-9.9%
Thailand	1,453	1,984	+ 36.5%	812	-59.1%	335	-58.7%
Lithuania	2,811	5,489	+ 95.3%	6,487	+ 18.2%	4,019	-38.0%
Netherlands	5,299	2,864	-46.0%	3,900	+ 36.2%	8,075	+ 107.1%
Spain	5,216	3,115	-40.3%	5,085	+ 63.2%	333	-93.5%
China	6,272	3,659	-41.7%	3,319	-9.3%	2,825	-14.9%
Germany	3,295	2,422	-26.5%	1,260	-48.0%	1,960	+ 55.6%
Taiwan	1,914	1,186	-38.0%	1,615	+ 36.2%	1,602	-0.8%
India		47		909	+ 1834.0%	730	-19.7%
Total	169,113	150,567	-11.0%	119,195	-20.8%	141,907	+ 19.1%

Table 7. Alaska Pollock Surimi Exports (U.S.) by destination declared.

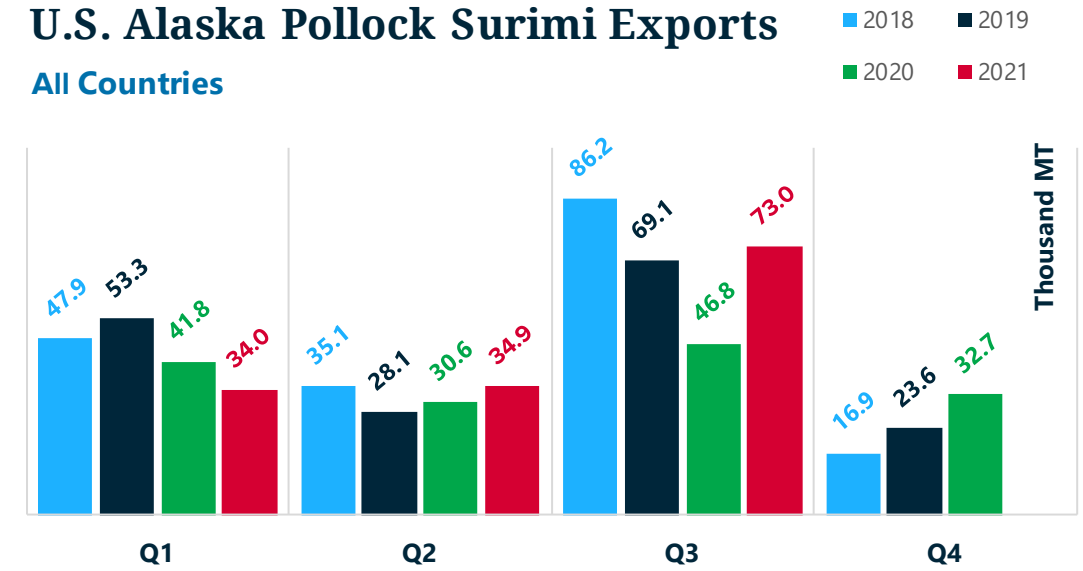

Figure 11. Alaska Pollock Surimi Exports. Aggregate of destination countries by quarter.

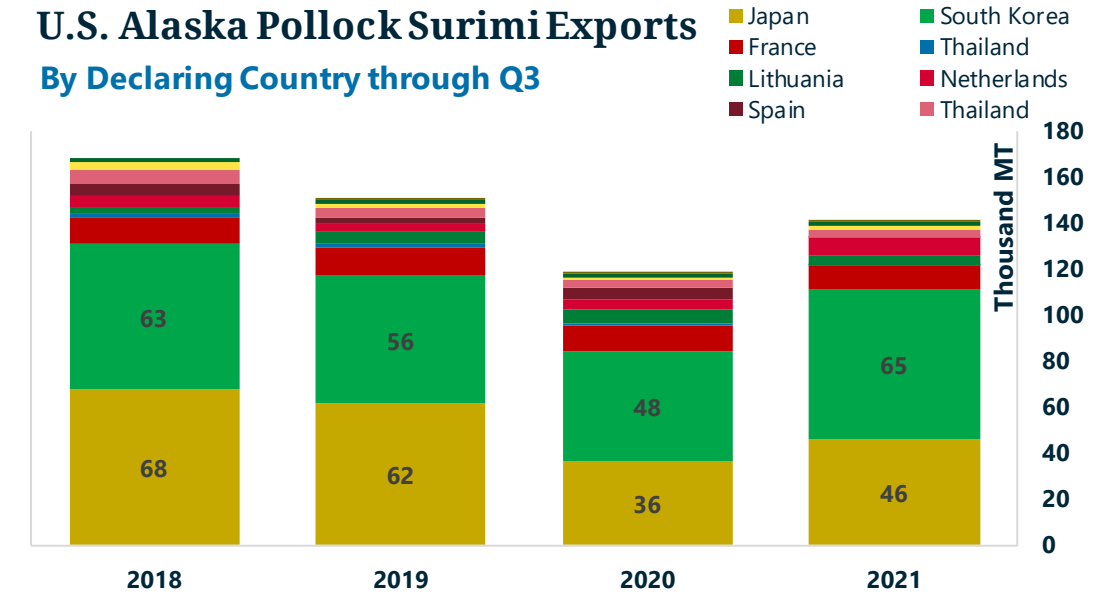

Figure 12. Alaska Pollock Surimi Exports by destination country.

Japanese Pollock Surimi

Despite a considerable increase in Japanese pollock surimi production last year, 2021 figures suggest a significant decline. According to our total estimates, Japanese pollock surimi is down 22 percent compared to last year through Q3. All quarters have shown a decrease compared to last year. Production from Hokkaido, is also down about 20 percent year-over-year. According to Tom Asakawa, such a decline is playing an essential role in the surge in prices seen across the surimi market in Japan.

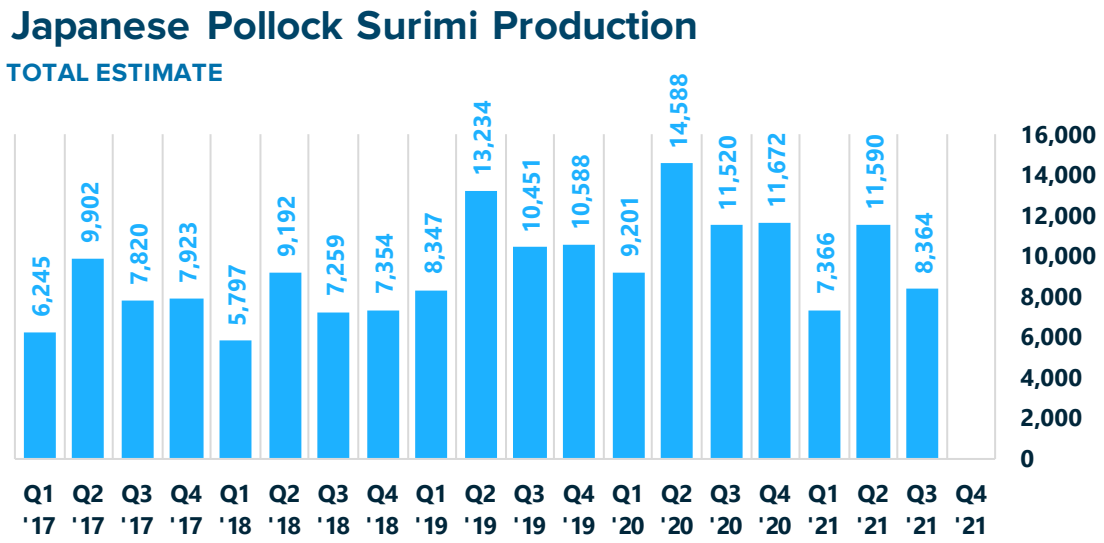

Figure 13. Japanese surimi production estaimates. FAO, Japan MOF, Tom Asakawa, TA Pacific Co., and Kambako News, Urner Barry Consulting.

Despite a rapid recovery in inventories from April through June, July and August registered back-to-back declines from the previous month. No data after August was available.

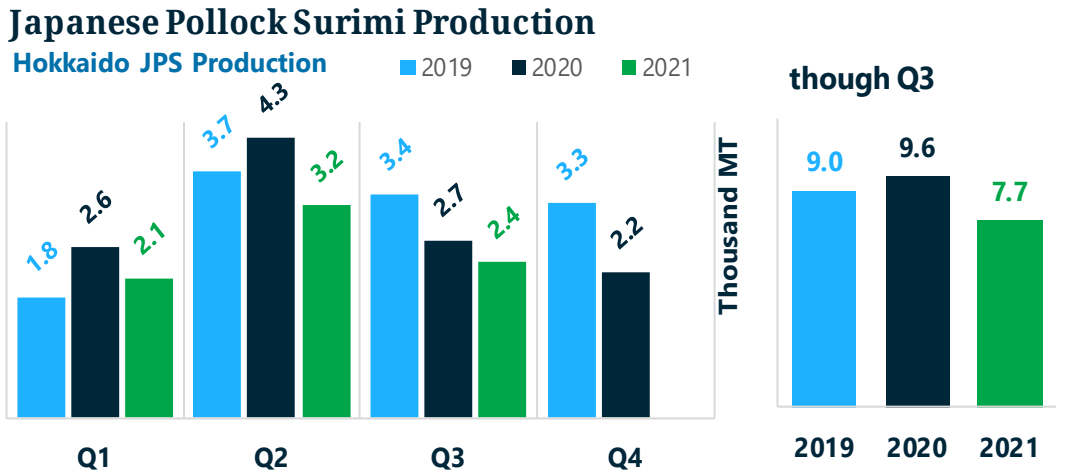

Figure 14. Hokkaido, Japanese pollock surimi production, Tom Asakawa, TA Pacific Co., and Kambako News, Urner Barry. *Q2 2021 data is incomplete

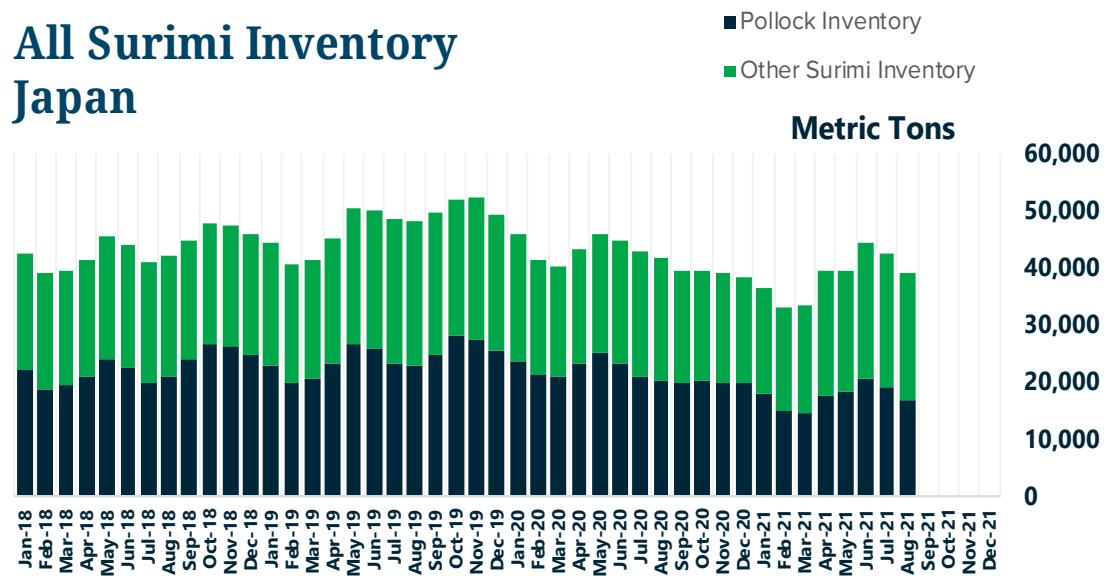

Figure 15. All surimi inventory in Japan. Tom Asakawa, TA Pacific Co., Japan MOF. Urner Barry. Monthly through April 2021.

Japanese Atka Mackerel Surimi

According to our estimates, although nearly insignificant compared to Japanese pollock volumes, Atka mackerel surimi production has increased considerably over the last few years. Such increase is consistent with production numbers for Hokkaido, which are about 20 percent greater than last year through Q3.

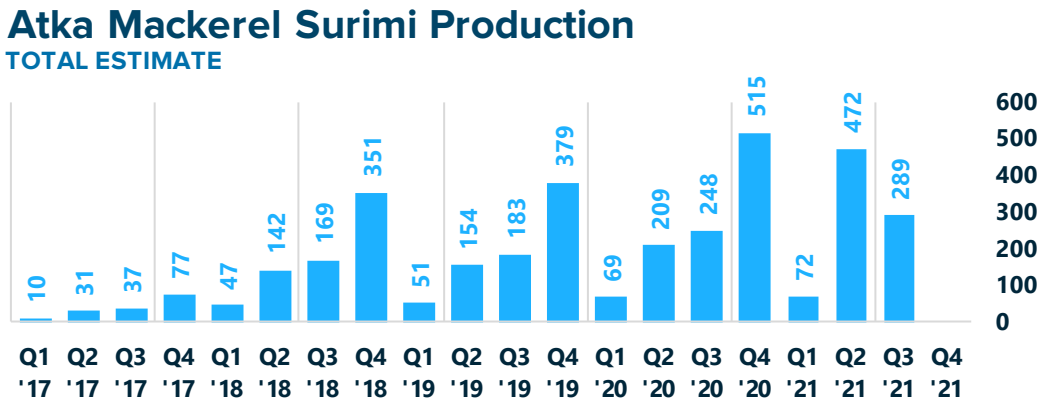

Figure 16. Japanese Atka Mackerel Harvest. FAO, Japan MOF, Tom Asakawa, TA Pacific Co., and Kambako News, Urner Barry.

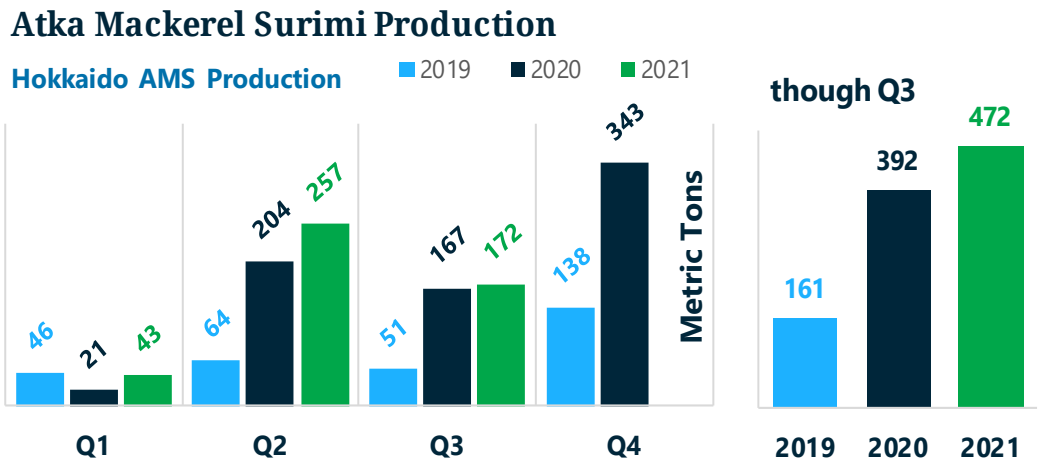

Figure 17. Hokkaido, Atka Mackerel surimi production, Tom Asakawa, TA Pacific Co., and Kambako News, Urner Barry.

2021 Q3 Surimi Consumption Trend in Japan

by Tom Asakawa

Surimi products production continues to slide down every year according to various statistics in Japan. During the COVID pandemic, many restaurants had to limit the number of guests and reduce the business hours. It decreased demands for high-valued seafood customarily served at restaurants. However, due to the nesting, supermarkets' sales increased, and so did e-commerce. Still, some consumers who demanded restaurant-grade seafood ordered high-valued seafood, which they usually do not eat at home. The COVID emergency restrictions were relaxed because the number of patients decreased drastically, and guests gradually returned to restaurants and drinking places.

Looking at the sales statistics of the Tokyo Central Wholesale Market, surimi products seem to be an exception to the above. Although the sales volume dipped in 2019, it increased in 2020. In 2021 Q3, July sales performed the best in the same month of last five years at 1042 tons valued at JPY 653.7 million ($5.74 million), average price JPY 627/kg ($5.50/kg) – the second-best in the same period. The sales in August dipped slightly but, in September, they improved to the second-best at 1071.28 tons and JPY 707.36 million ($6.20 million) with the average price JPY 660/kg ($5.79/kg). It appears to be a good sign toward the busiest year-end sales season. The seafood sales regularly increase by about 85% from October to December in volume, about 2.8 times in value and 50% in average price. In 2020 amid the pandemic, Q4 total sales were 4732.2 tons and JPY 4.09 billion ($35.91 million), averaging JPY 864/kg ($7.58/kg).

Japanese Government in November relaxed the pandemic restrictions on restaurants and drinking places, public events, movies, and concerts, sports events, traveling, and quarantine restrictions on travelers from abroad. These actions will increase seafood purchases by foodservice, especially in December and January for the year-end and New Year parties. Retailers will also push sales of high-valued surimi products for the New Year's special meals. Surimi product manufacturers in tourist destinations expect a sales increase in local specialty products as domestic traveling restrictions relaxed.

While consumption of traditional surimi products is declining, Japanese surimi products manufacturers are diversifying their product lines.

The Japan Kamaboko Association in November 2020 announced the "Fish Protein" logo to increase sales of surimi products as a superfood rich in protein. Six hundred association members can use the logo to their products in retail sales.

In October 2017, Nippon Suisan Kaisha and University researchers presented a joint research result that Alaska pollock protein helps increase muscle in women 65 years or older. This age group is said to lose annually one to two percent muscle. Still, the researchers confirmed that daily intake of Alaska pollock protein for three months increased muscle, and the quality of Alaska pollock protein is superior to wheat and eggs. In July 2021, broader research with 18 universities and laboratories confirmed the same result with college-age women and high school athletes.

As of October 21, 2021, the Association recognized 39 member companies use the logo on 284 items. Those products must contain fish protein 8.1g/100g or more or 4.1g/100kcal or more.

Seafood analogs based on surimi

Last year some national brand surimi products manufacturers announced grilled kabayaki eel analogs. Wild and farm-grown eels have been subject to resource sustainability issues. The manufacturers offer consumers the reasonably priced alternative to wild-caught eels and farm-grown captured glass eels. As the manufacturers improve the quality, the eel analogs are accepted favorably by consumers. They have been producing crab leg analogs, but also scallop and squid analogs.

The latest product is the sea urchin analog. Ichimasa Kamaboko of Niigata Prefecture introduced "Next Seafood Sea Urchin Flavor" in a limited quantity from November 1, 2021. It reproduces the rich taste and smooth texture of raw sea urchin roe with surimi.

Pacific Whiting Surimi

Production estimates of pacific whiting surimi through Q3 suggest a decrease of 15 percent compared to last year. However, when considering partial Q4 data, surimi production of this species suggests an increase of about 2 percent compared to last year.

Another round of changes in how regional offices of the NMFS report this information complicated this process further. As a result, we recurred to even more rudimentary methods to calculate surimi production by category.

Pacific Whiting Surimi Production

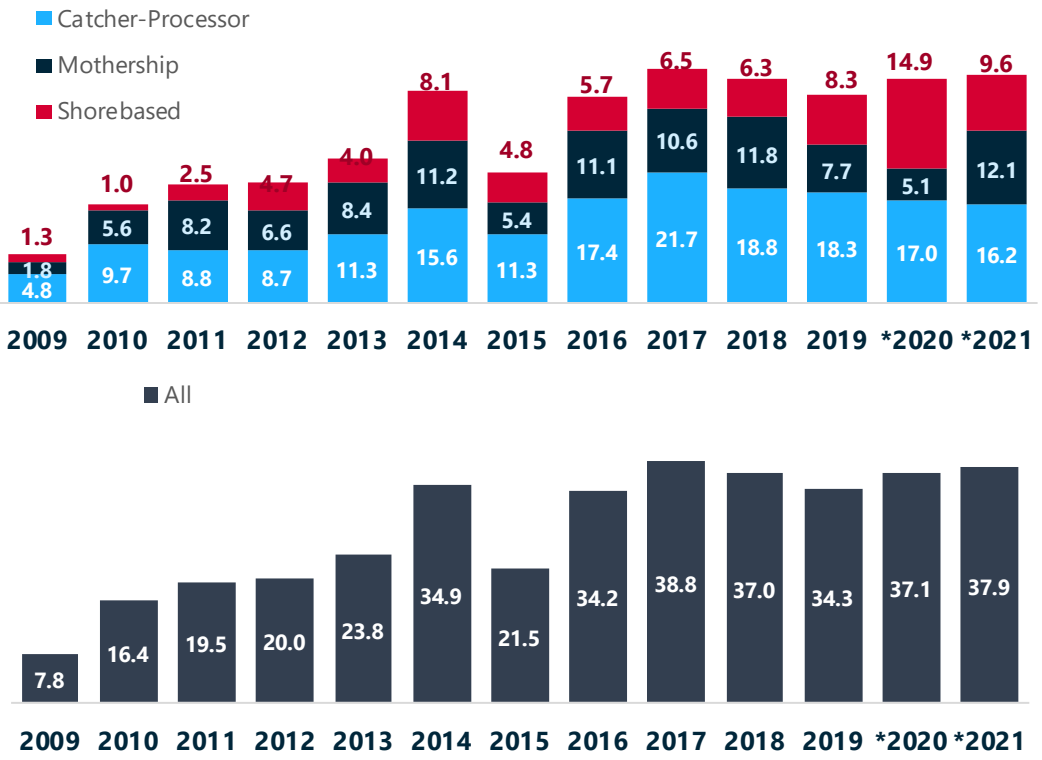

Figure 18. Pacific Whiting Surimi Production. NOAA Fisheries, Northwest Fisheries Science Center, and UB Consulting estimates for *2020 and *2021

UB Estimated Production, Pacific Whiting Surimi						**YTD (Q1 to Q3)			
	2017	2018	'18 vs. '17	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Q1									
Q2	14,504	19,021	+ 31.1%	25,717	+ 35.2%	19,191	-25.4%	10,763	-43.9%
Q3	11,134	5,177	-53.5%	1,068	-79.4%	10,541	+ 886.5%	14,484	+ 37.4%
Q4	13,851	13,429	-3.1%	7,527	-43.9%	7,341	-2.5%	12,616	+ 71.9%
Total (UB Est.)	39,489	37,626	-4.7%	34,312	-8.8%	37,073	+ 8.0%		
*Official thru '18	**38,784**	**37,010**	-4.6%	**34,312**	-7.3%	**37,073**	+ 8.0%	**37,863**	
**YTD	25,638	24,198	-5.6%	26,785	+ 10.7%	29,732	+ 11.0%	25,247	-15.1%

*** UB Estimates**

Table 8. Estimated Production from Pacific Whiting Monthly Landings. NOAA Fisheries, Northwest Fisheries Science Center, Urner Barry Consulting. *Q3 2021 through mid-July only.

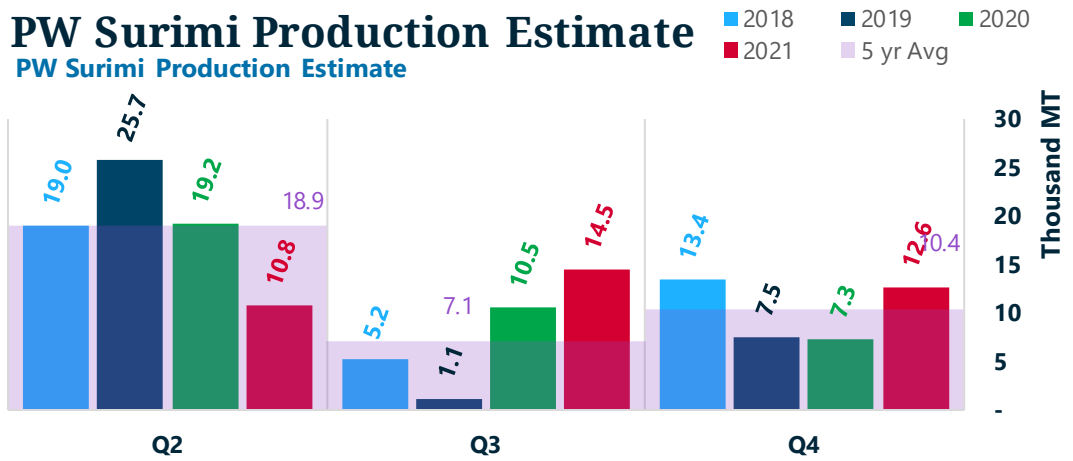

Figure 19. PW Surimi Production Estimate. NOAA, Northwest Fisheries Science Center, Urner Barry Consulting. *Q2 2021 through May only.

Disclaimer: There have been no updates on NOAA's Northwest Fisheries Science Center data beyond 2020. As a refresher, although shore-based production figures were suppressed before the most recent update that included 2020 production figures, total production figures were available, making it easy to calculate the remaining variable. However, "All" was also suppressed in the update mentioned above, making it difficult to approximate the missing values. As a result, we had to estimate the remaining figures by using a previously used method. Although this method is relatively rudimentary due to the lack of available data, we feel this approximation is a decent "best estimate" given the limitations.
As of August 2021, the FISHEYE app is no longer being regularly updated. Data were last updated on August 4, 2021. Therefore, our estimate method changed again.

Pacific Whiting Surimi Trade (Imports)

Countries declaring imports of pacific whiting surimi through Q3 declined steeply compared to 2020. Such decrease departs from an overall recovery trend seen for most species, especially Alaska pollock, where trade showed a recovery in 2021. Imports of pacific whiting surimi decreased by nearly 25 percent through Q3; most main markets contracted, including Lithuania, Spain, and Japan.

Pacific Whiting Surimi Imports *YTD from (Q1 to Q3)							
All Countries							
	2018	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Q1	6,912	8,339	+ 20.6%	4,817	-42.2%	3,269	-32.1%
Q2	6,452	5,101	-20.9%	3,680	-27.9%	3,291	-10.6%
Q3	9,876	7,745	-21.6%	6,424	-17.1%	4,699	-26.9%
Q4	6,976	7,008	+ 0.5%	4,911	-29.9%		
Total	30,216	28,193	-6.7%	19,832	-29.7%		
*YTD	23,240	21,185	-8.8%	14,921	-29.6%	11,259	-24.5%

Table 9. Pacific Whiting Surimi Imports, all declaring countries, from the U.S.—each country's customs, Urner Barry Consulting.

Even from a seasonal trend perspective, countries declaring imports continue to show a decrease year-over-year.
Prices in Poland and Spain saw significant increases in Q3 2021, with levels hovering the $3,000 per metric ton.

Pacific Whiting Surimi Imports *(Q1 to Q3)							
By Declaring Country							
	2018	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Lithuania	5,658	5,591	-1.2%	4,439	-20.6%	4,373	-1.5%
Spain	9,444	7,136	-24.4%	5,207	-27.0%	3,650	-29.9%
Japan	4,994	4,984	-0.2%	1,967	-60.5%	1,356	-31.1%
Poland	1,332	1,482	+ 11.3%	1,056	-28.7%	824	-22.0%
France	538	891	+ 65.6%	1,657	+ 86.0%	535	-67.7%
Canada	297	305	+ 2.7%	214	-29.8%	286	+ 33.6%
Taiwan	490	282	-42.4%	83	-70.6%	229	+ 175.9%
Latvia	11	22	+ 100.0%	70	+ 218.2%	6	-91.4%
S. Korea	476	481	+ 1.1%	223	-53.6%		
*Total	23,240	21,185	-8.8%	14,921	-29.6%	11,259	-24.5%

Table 10. Pacific Whiting Surimi Imports, by declaring country, from the U.S.—each country's customs, Urner Barry Consulting.

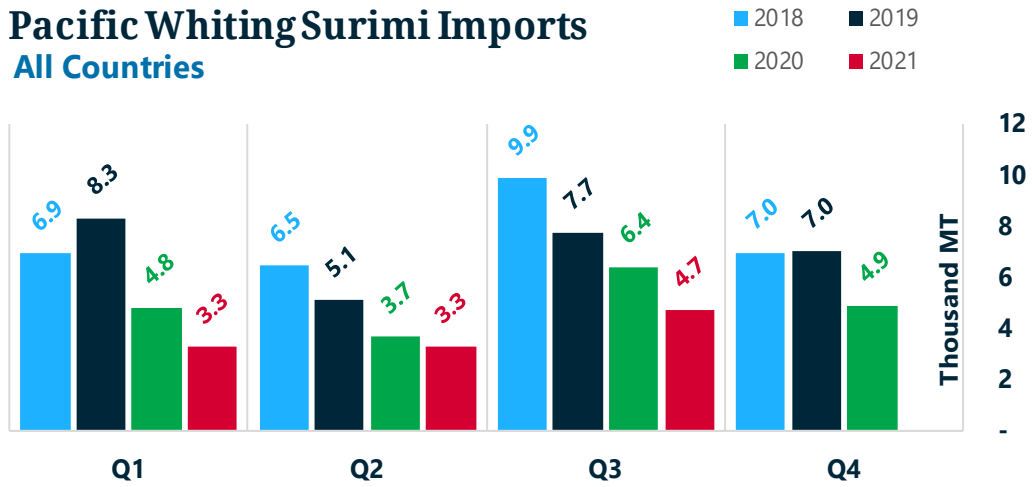

Figure 20. PW surimi imports, all countries by quarter from the U.S. —each country's customs, Urner Barry Consulting.

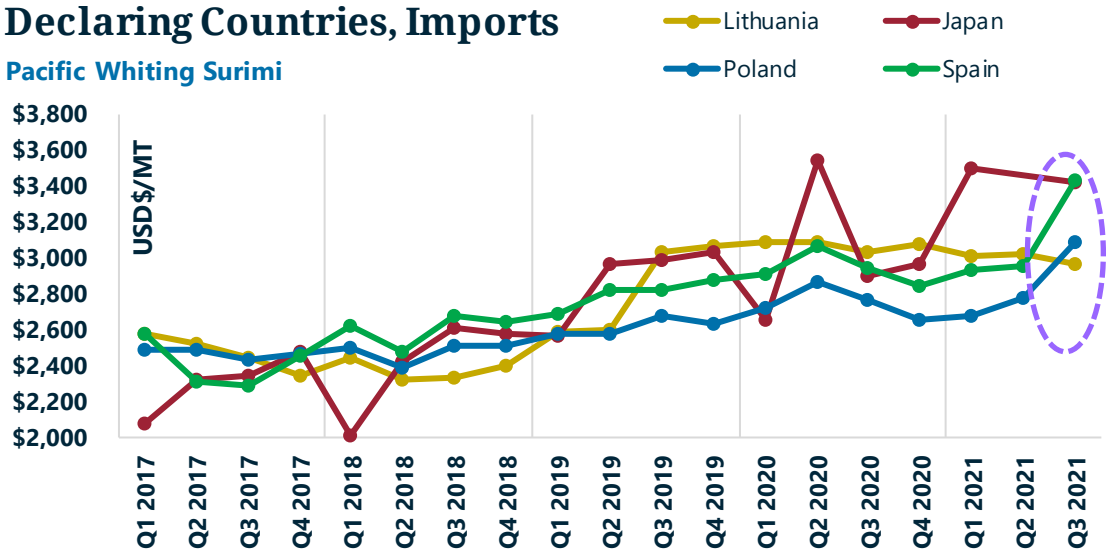

Figure 21. PW surimi import $/MT—each country's customs, Urner Barry Consulting.

Pacific Whiting Surimi Trade (Exports)

U.S. export data shows a very different picture from countries declaring imports. In 2021, export data showed an 83 percent increase compared to 2020. Similar to most species, a recovery was expected in 2021 due to the pandemic, and the data showed that.

Such disparity between countries declaring imports and U.S. export data tells us there is a massive disconnect in how these export codes are reported for this species. But it also tells us that compared to surimi, production figures could be overstated, and imports and exports underreported—aside from being misreported.

It is not easy to assess this data from a pure data analysis perspective. Still, the relatively decent correlation between landings and surimi production released in the past by the regional offices from the NMFS suggests production figures estimates are likely to be closer to real numbers.

Pacific Whiting Surimi Exports *YTD from (Q1 to Q3)							
All Countries							
	2018	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Q1	1,914	782	-59.1%	495	-36.7%	1,801	+ 263.8%
Q2	4,488	2,350	-47.6%	1,779	-24.3%	3,218	+ 80.9%
Q3	2,310	4,016	+ 73.9%	859	-78.6%	741	-13.7%
Q4	3,421	1,115	-67.4%	2,383	+ 113.7%		
Total	12,133	8,263	-31.9%	5,516	-33.2%		
*YTD	8,712	7,148	-18.0%	3,133	-56.2%	5,760	+ 83.8%

Tables 11. Pacific Whiting surimi Exports. All countries. U.S. Customs, Urner Barry Consulting.

Pacific Whiting Surimi Exports							
Spain							
	2018	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Q1	726					716	
Q2	1,767	1,360	-23.0%	781	-42.6%	1,821	+ 133.2%
Q3	344	916	+ 166.3%				
Q4	1,999	120	-94.0%	1,228	+ 923.3%		
Total	4,836	2,396	-50.5%	2,009	-16.2%		
YTD	2,837	2,276	-19.8%	781	-65.7%	2,537	+ 224.8%

Table 12. Pacific Whiting surimi exports to Spain. Source: U.S. Customs, Urner Barry Consulting.

Pacific Whiting Surimi Exports *(Q1 to Q3)							
By Reported Destination Country through Q3							
	2018	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Spain	2,837	2,276	-19.8%	781	-65.7%	2,537	+ 224.8%
Netherlands	853	819	-4.0%	618	-24.5%	1,872	+ 202.9%
Canada	340	549	+ 61.5%	330	-39.9%	516	+ 56.4%
S. Korea	2,052	1,545	-24.7%	348	-77.5%	424	+ 21.8%
Thailand	476			93		274	+ 194.6%
India		212				117	
Lithuania		1,269		777	-38.8%	11	-98.6%
France							
China	156			48			
*Total	8,712	7,148	-18.0%	3,133	-56.2%	5,760	+ 83.8%

Table 13. Pacific Whiting surimi exports by country U.S. Customs, Urner Barry Consulting.

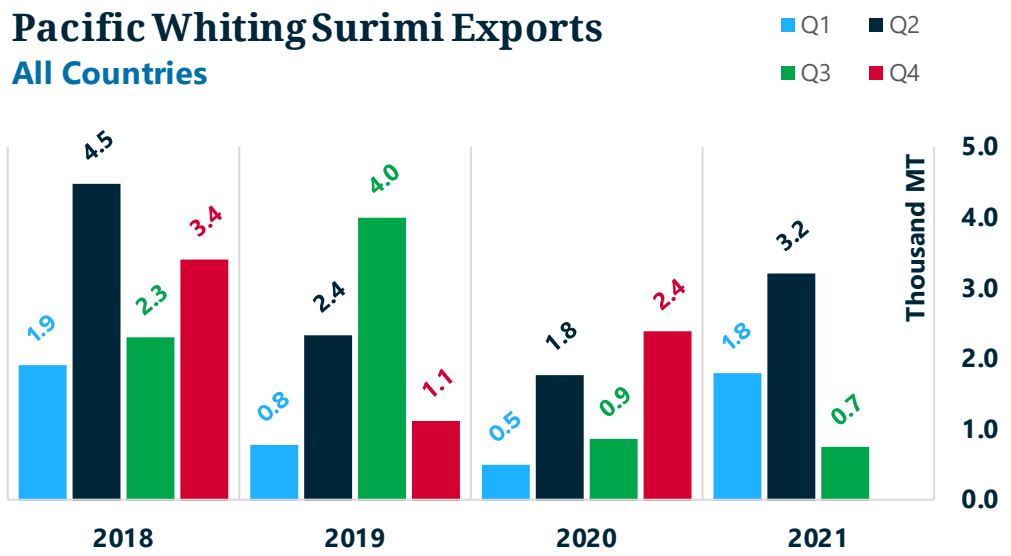

Figure 22. Pacific Whiting surimi exports by quarter. U.S. Customs, Urner Barry Consulting.

Southern Blue Whiting & Hoki Surimi Production

Production of southern blue whiting surimi through Q3 decreased nearly 3 percent compared to last year. Production from Argentina has decreased 22 percent year-over-year, with all three quarters registering double-digit decreases compared to last year. If seasonality recovers in 2021, we could see a seasonal increase in December from New Zealand and Chile that could offset some of the overall losses seen thus far.

Southern Blue Whiting Surimi Production				*YTD from (Q1 to Q3)			
All Countries							
	2018	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Q1	767	952	+ 24.2%	934	-1.9%	1,199	+ 28.4%
Q2	696	1,004	+ 44.2%	865	-13.9%	695	-19.6%
Q3	463	823	+ 77.8%	690	-16.1%	521	-24.5%
Q4	2,117	1,635	-22.8%	1,119	-31.5%		
Total	4,043	4,414	+ 9.2%	3,608	-18.3%		
*YTD	1,926	2,779	+ 44.3%	2,489	-10.4%	2,415	-2.9%

Table 14. Southern Blue Whiting surimi estimated production.

Southern Blue Whiting Surimi Production				(Q1 to Q3)			
Production by Country							
	2018	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Argentina	1,926	2,779	+ 44.3%	2,392	-13.9%	1,851	-22.6%
Chile				97		564	+ 481.4%
New Zealand							
Total	1,926	2,779	+ 44.3%	2,489	-10.4%	2,415	-2.9%

Table 15. Southern Blue Whiting surimi estimated production by country, year-to-date.

Hoki Surimi Production				*YTD from (Q1 to Q3)			
All Countries							
	2018	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Q1	1,636	2,431	+ 48.6%	1,727	-29.0%	1,384	-19.9%
Q2	1,557	1,733	+ 11.3%	1,680	-3.0%	1,440	-14.3%
Q3	1,155	1,859	+ 60.9%	1,570	-15.6%	1,384	-11.9%
Q4	1,952	1,228	-37.1%	1,400	+ 14.0%		
Total	6,300	7,251	+ 15.1%	6,377	-12.1%		
*YTD	4,348	6,023	+ 38.5%	4,977	-17.4%	4,208	-15.5%

Table 16. Hoki surimi estimated production by country, year-to-date.

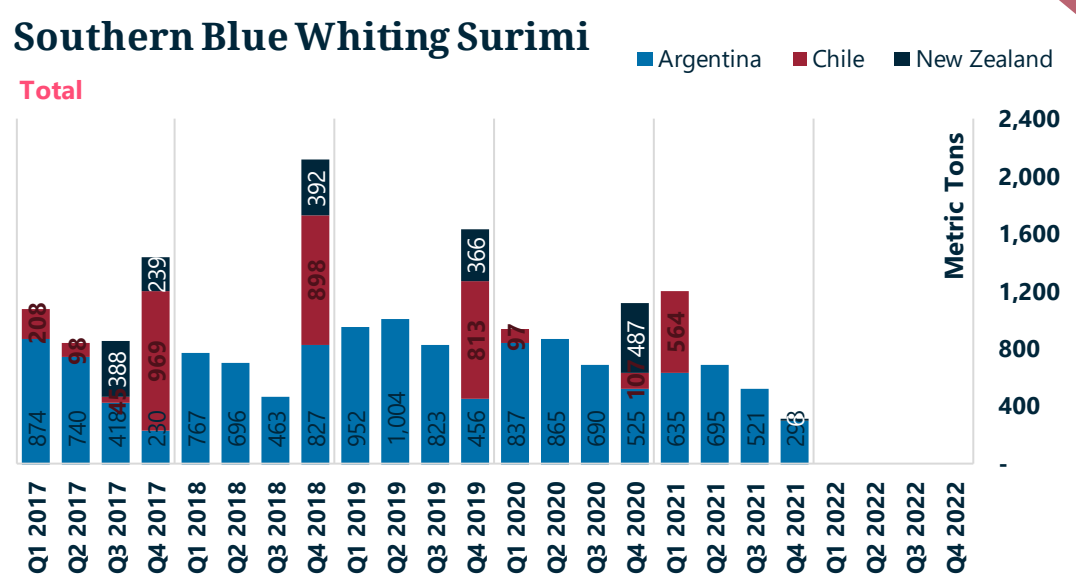

Figure 23. Southern Blue Whiting surimi estimated production by country. *Q2 2021 data is incomplete.

Hoki surimi production is also down compared to last year through Q3. Such decrease represents a 15 percent decrease compared to last year, or about 700 metric tons. Production from Argentina has decreased considerably since 2019; production is now about two-thirds of what it was two years ago. While production out of Chile has increased, it represents almost an insignificant amount of the overall market share. Volumes from New Zealand are flat compared to last year at about 1,350 metric tons.

Disclaimer: Southern blue whiting (SBW) and Hoki surimi production were assumed as a function of trade. There was consensus in which domestic markets for the three leading producers—Argentina, Chile, and New Zealand—were too small to be significant. As such, we utilized the following methodology:

- Use recipient countries' volumes of surimi from Argentina and assume a 60/40 percent split between Hoki and SBW surimi, respectively
- Use Chilean exports as declared, which are divided by species.
- Use New Zealand exports as declared, which are also divided by species.

Southern Blue Whiting and Hoki Surimi Production

Hoki Surimi Production (Q1 to Q3)							
Production by Country							
	2018	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Argentina	2,889	4,168	+ 44.3%	3,587	-13.9%	2,777	-22.6%
Chile	134	85	-36.6%	38	-55.3%	77	+ 102.6%
New Zealand	1,325	1,770	+ 33.6%	1,352	-23.6%	1,354	+ 0.1%
Total	**4,348**	**6,023**	+ 38.5%	**4,977**	-17.4%	**4,208**	-15.5%

Table 17 . Hoki surimi estimated production by country. Each country's customs, Urner Barry Consulting.

From a linear perspective, the overall trend of Hoki surimi production remains slightly downward.

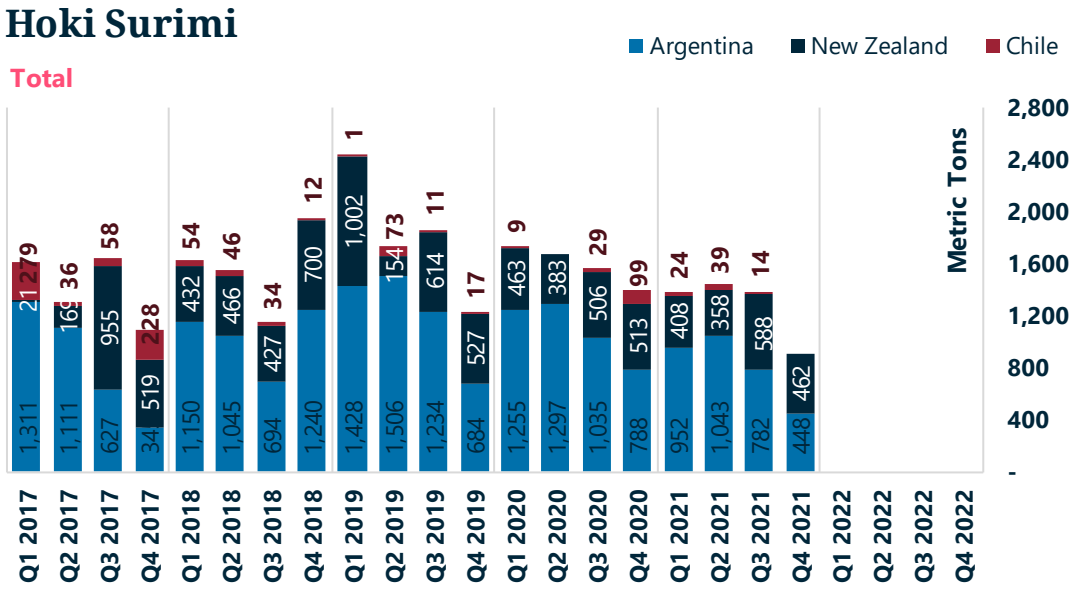

Figure 24. Hoki surimi production estimates. Each country's customs, Urner Barry Consulting. *Q4 2021 data is incomplete.

SBW and Hoki Surimi Trade (Imports)

As a result of contracting production, exports—countries declaring imports—continue to decrease. Countries declaring imports from Argentina, mainly Japan and Russia, continue to register such declines.

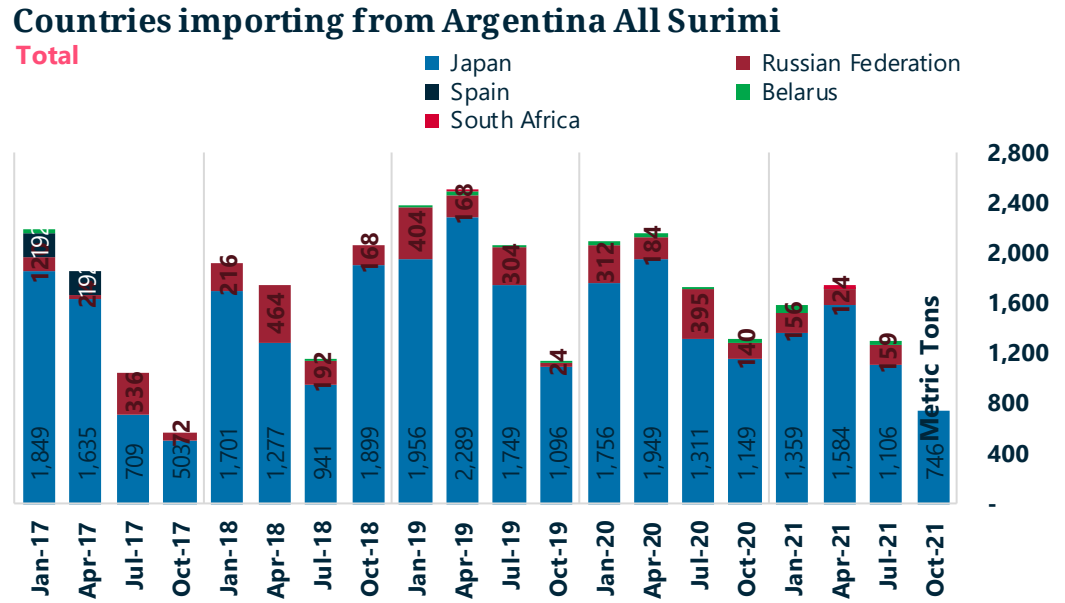

Figure 25. SBW and Hoki Surimi imports from Argentina. *Q2 2021 data is incomplete.

Surimi Imports from Argentina *(Q1 to Q3)							
Countries Importing from: Argentina							
	2018	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Japan	3,919	5,994	+ 52.9%	5,016	-16.3%	4,049	-19.3%
Russian Federation	872	876	+ 0.5%	891	+ 1.7%	439	-50.7%
Spain							
Belarus	24	52	+ 116.7%	72	+ 38.5%	115	+ 59.7%
South Africa		25				25	
***Total**	**4,815**	**6,947**	+ 44.3%	**5,979**	-13.9%	**4,628**	-22.6%

Table 18. Surimi imports from Argentina by country.

SBW and Hoki Surimi Trade, (Imports)

Because production figures are estimated as a function of trade, countries declaring imports from Chile also registered an increase in 2021 compared to last year through Q3. These increases came from Japan mainly, possibly trying to offset decreasing production out of Argentina. Again, if seasonality returns to its pre-pandemic behavior, we could expect this number to increase as we head into Q4.

Surimi Imports from Chile	*(Q1 to Q3)						
Countries Importing from:	Chile						
	2018	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Japan	1,648	1,559	-5.4%	1,396	-10.5%	1,842	+ 31.9%
Russian Federation	26	153	+ 488.5%	43	-71.9%	159	+ 269.8%
Spain							
Belarus	25						
*Total	1,699	1,712	+ 0.8%	1,439	-15.9%	2,001	+ 39.1%

Table 19. Surimi imports from Chile by country.

Countries declaring imports from New Zealand, mainly Japan, could see its figures increase into Q4 as it is seasonally expected.

Surimi Imports from New Zealand	*(Q1 to Q3)						
Countries Importing from: New Zealand							
	2018	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Japan	330	360	+ 9.1%	218	-39.4%	267	+ 22.5%
South Africa		40				20	
*Total	330	400	+ 21.2%	218	-45.5%	287	+ 31.7%

Table 20. Surimi imports from New Zealand by country.

Countries importing from Chile All Surimi

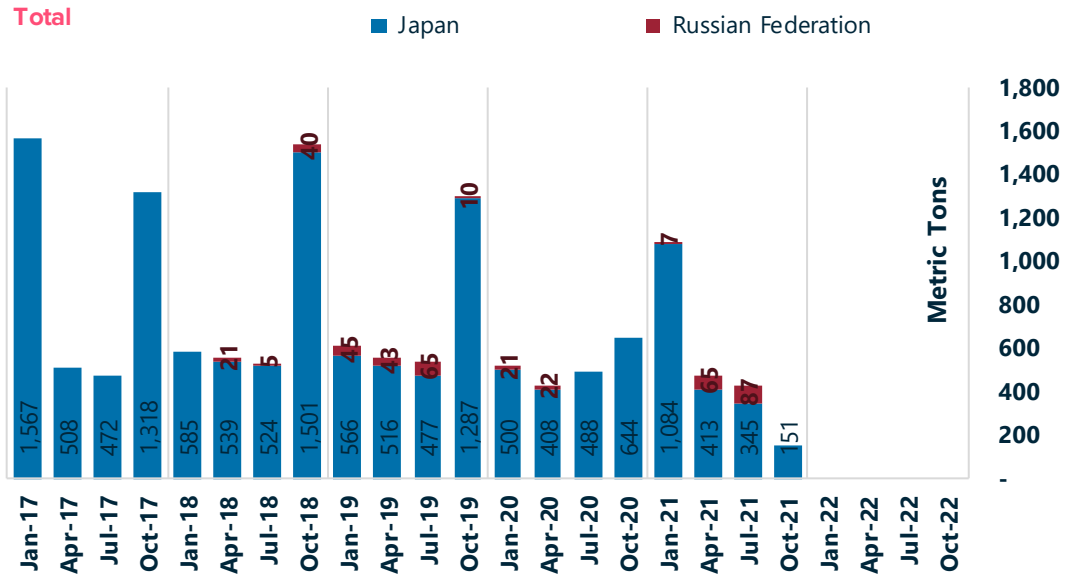

Figure 26. Surimi imports from Chile by country.

Countries importing from New Zealand All Surimi

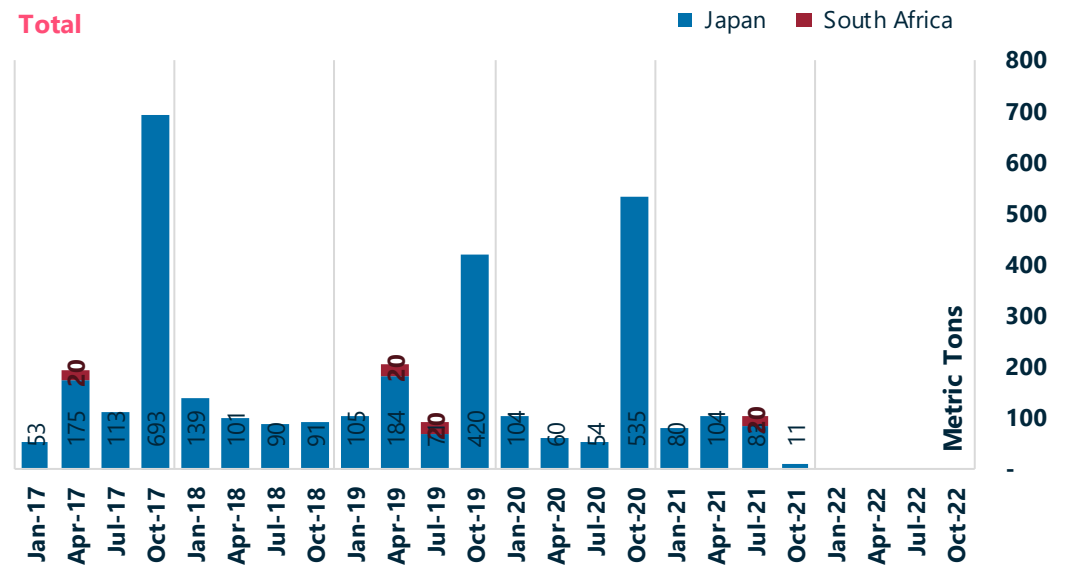

Figure 27. Surimi imports from New Zealand by country.

Northern Blue Whiting Surimi Production, France

Surimi **production estimates from the working group out of France are shown below. Production in 2020 fell to the lowest level since about 2012, and thus far in 2021, the number is even lower by about 400 metric tons

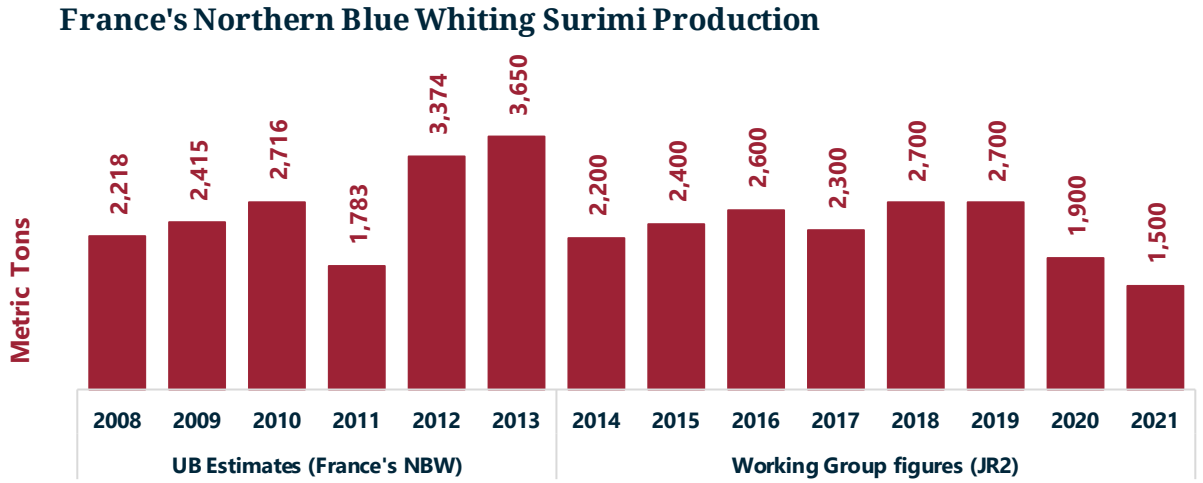

Figure 28. Northern blue whiting surimi production estimates. Source: GAPP, Urner Barry Consulting.

Countries importing from France from Q1 to Q3

	Metric Tons	2015	2016	2017	2018	2019	2020	2021
nbw surimi	Japan	408	670	814	679	958	239	503
	Belarus	-	-	-	168	359	254	351
	China (People's Republic of)	24	-	48	166	71	-	24
	Spain	-	-	-	-	65	26	22
	Poland	-	-	-	-	-	-	116
	Other	-	-	-	-	2	2	-
	Total	**432**	**670**	**863**	**1,014**	**1,455**	**522**	**1,016**

Table 21. Imports by declaring countries of northern blue whiting surimi from France.

Disclaimer: **Production estimates by species use an internal working group approximation that was then calculated using an in-house non-linear model. The estimates provided by the working group were collected in 2020.

Tropical Surimi

Production of tropical surimi is on the rise after a noticeable decrease in 2020, possibly caused by the pandemic. However, from a year-over-year perspective, Q3 revealed a significant decline that, at least at first glance, does not appear to be seasonal; as such, prices of itoyori relative to AK pollock surimi have reflected that, naturally, in the opposite direction.

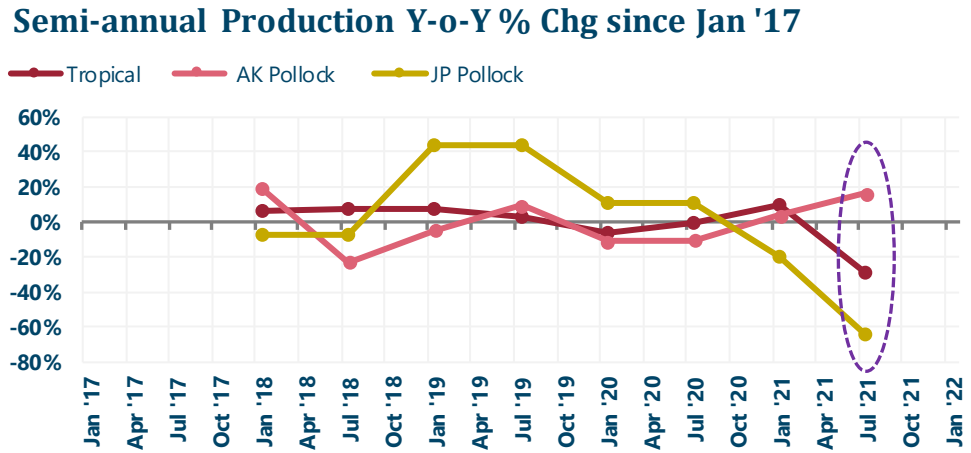

Figure 29. Y-o-y % chg of surimi production estimates by category. Source: Urner Barry Consulting

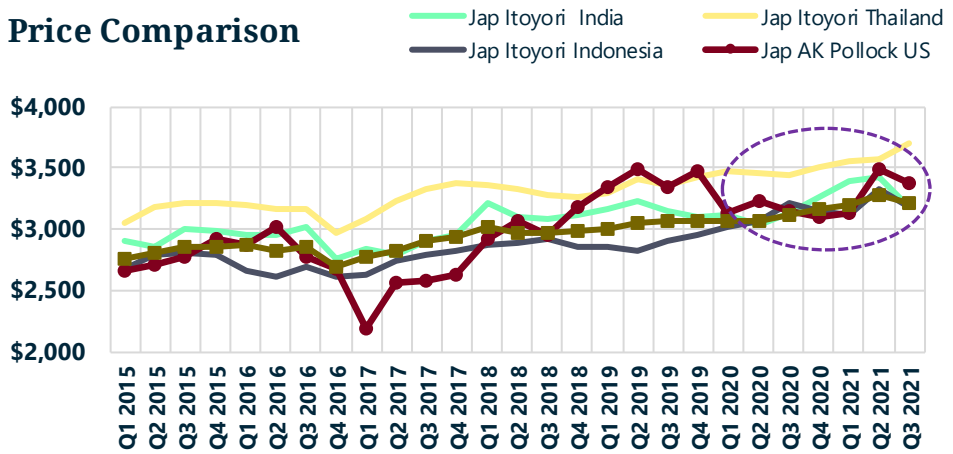

Figure 30. Itoyori vs. AK Pollock of Japan import $/mt comparison. Source: Urner Barry Consulting

UrnerBarry CONSULTING

Tropical Surimi Production, Thailand

Surimi production estimates through Q3 suggest a decrease of about 20 percent compared to a year ago.

Thailand's estimated Production by Species (Imports and Exports) thru Q3

Year	Itoyori	Eso	Bigeye	Goatfish	Croaker	Ribbon Sea Bream	Other	Total
2010	27,222	8,746	6,948	4,590	2,696	1,488	427	4,243	56,360
2011	23,065	8,102	6,437	4,278	2,495	2,224	395	5,211	52,207
2012	17,759	8,002	6,358	5,546	2,458	4,026	1,766	5,649	51,565
2013	15,215	5,981	4,195	4,145	1,844	1,532	2,076	3,551	38,540
2014	15,681	6,013	4,778	3,056	1,855	1,707	2,090	3,570	38,750
2015	13,537	5,075	4,032	3,517	1,561	1,257	248	3,476	32,702
2016	11,289	4,833	3,840	3,350	1,454	2,688	1,583	2,105	31,142
2017	8,942	3,565	2,833	1,732	1,126	1,198	1,064	2,517	22,976
2018	7,403	3,545	2,817	2,457	1,092	1,640	1,389	2,503	22,846
2019	8,286	3,609	2,867	2,501	1,116	1,098	1,352	2,428	23,258
2020	10,194	4,088	2,518	2,724	1,231	2,474	919	2,193	26,342
2021	7,975	3,160	2,510	2,087	998	926	1,377	1,329	20,362

Table 22. Yearly estimates of Thailand's surimi production by species.

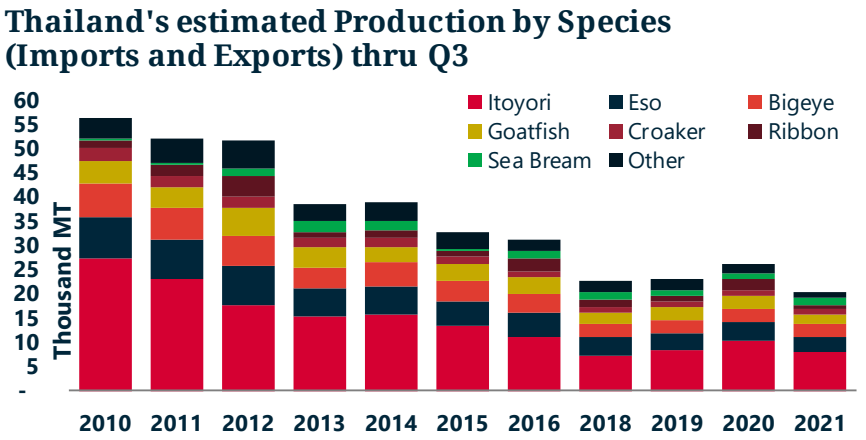

Figure 31. Yearly estimates of Thailand's surimi production by species.

Countries declaring surimi imports from Thailand from Q1 to Q3

Reporter Name	Species	2015	'15 vs. '14	2016	'16 vs. '15	2017	'17 vs. '16	2018	'18 vs. '17	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Japan	Barrac, Sea Breams, Kingclip	42	▼ 65.9%	46	▲ 9.5%	34	▼ 26.1%	19	▼ 44.1%	9	▼ 52.6%	13	▲ 44.4%	14	▲ 7.7%
	Itoyori	8,624	▼ 35.6%	7,338	▼ 14.9%	5,996	▼ 18.3%	5,024	▼ 16.2%	5,545	▲ 10.4%	6,143	▲ 10.8%	6,058	▼ 1.4%
	Other	14,108	▼ 32.1%	13,498	▼ 4.3%	10,484	▼ 22.3%	11,020	▲ 5.1%	10,705	▼ 2.9%	9,720	▼ 9.2%	9,185	▼ 5.5%
	Sardine, Other			34				3						6	
Russia	All	3,741	▼ 31.9%	2,188	▼ 41.5%	929	▼ 57.5%	1,761	▲ 89.6%	2,125	▲ 20.7%	2,469	▲ 16.2%	2,525	▲ 2.3%
S. Korea	All	2,912	▼ 12.2%	2,395	▼ 17.8%	1,320	▼ 44.9%	1,032	▼ 21.8%	984	▼ 4.7%	907	▼ 7.8%	768	▼ 15.3%
Malaysia	All	354		423	▲ 19.5%	418	▼ 1.2%	395	▼ 5.5%	714	▲ 80.8%	743	▲ 4.1%	551	▼ 25.8%
China	All	496	▼ 21.8%	380	▼ 23.4%	163	▼ 57.1%	336	▲ 106.1%	294	▼ 12.5%	527	▲ 79.3%	752	▲ 42.7%
Taiwan	All	292	▼ 44.3%	173	▼ 40.8%	78	▼ 54.9%	91	▲ 16.7%	270	▲ 196.7%	515	▲ 90.7%	611	▲ 18.6%
France	All	518	▼ 0.4%	220	▼ 57.5%	380	▲ 72.7%	350	▼ 7.9%	307	▼ 12.3%				
Hong Kong	All	163	▼ 17.3%	114	▼ 30.1%	124	▲ 8.8%	112	▼ 9.7%	212	▲ 89.3%	308	▲ 45.3%	425	▲ 38.0%
New Zealand	All	673	▼ 45.1%	259	▼ 61.5%	65	▼ 74.9%	45	▼ 30.8%	56	▲ 24.4%	44	▼ 21.4%	39	▼ 11.4%
Lithuania	All	14	▼ 97.3%			54		129	▲ 138.9%	421	▲ 226.4%	219	▼ 48.0%	186	▼ 15.1%
Philippines	All							305		210	▼ 31.1%	92	▼ 56.2%	180	▲ 95.7%
Canada	All	20	▼ 80.4%	104	▲ 420.0%			66		124	▲ 87.9%	174	▲ 40.3%	184	▲ 5.7%
Other		308	▼ 64.0%	404	▲ 31.2%	194	▼ 52.0%	122	▼ 37.1%	231	▲ 89.3%	211	▼ 8.7%	24	▼ 88.6%
Total		**32,265**	**▼ 32.3%**	**27,576**	**▼ 14.5%**	**20,239**	**▼ 26.6%**	**20,810**	**▲ 2.8%**	**22,207**	**▲ 6.7%**	**22,085**	**▼ 0.5%**	**21,508**	**▼ 2.6%**

Table 23. Countries declaring surimi imports from Thailand. Source: each country's customs, authority, UB Consulting.

Analysis

Almost all species experienced a decrease, particularly Itoyori, which decreased by about 22 percent, or about 2 thousand metric tons compared to the same period last year.

In terms of trade, volumes from countries declaring importing surimi from Thailand decreased only 2.5 percent. Japanese imports of Thai surimi were down slightly, while Russian imports moved up slightly. At a superficial glance, it makes sense that prices from Itoyori, a vital substitute for AK pollock surimi, continue to hover around record-highs amid overall lower production figures from this country. As a result, it makes sense for Japanese buyers to look elsewhere, particularly where the resource appears available, like India.

**UB Consulting developed a model to estimate total production figures. Thereafter, production estimates by species use an internal working group approximation that was then calculated using an in-house non-linear model. The estimates provided by the working group were collected in 2020.

Tropical Surimi Production, India

According to our surimi production estimates, volumes out of India increased considerably in 2021 compared to 2020. However, such an increase is still below 2019, 2018, and 2017.

India's estimated Production by Species thru Q3

Year	Itoyori	Eso	Bigeye	Goatfish	Croaker	Ribbon	Other	Total
2015	9,607	8,642	4,795	1,713	#N/A	13,226	3,379	**41,362**
2016	6,637	10,316	5,404	2,000	#N/A	19,683	4,841	**48,882**
2017	8,355	17,040	7,477	2,797	#N/A	27,380	5,585	**68,635**
2018	14,141	12,486	7,961	2,909	#N/A	26,319	6,985	**70,802**
2019	7,184	16,551	7,604	2,733	#N/A	25,511	6,620	**66,203**
2020	2,082	14,006	6,990	2,778	#N/A	25,925	4,834	**56,615**
2021	10,282	12,424	9,226	4,721	#N/A	22,738	6,060	**65,451**

Table 24. Yearly estimated surimi production from India by species.

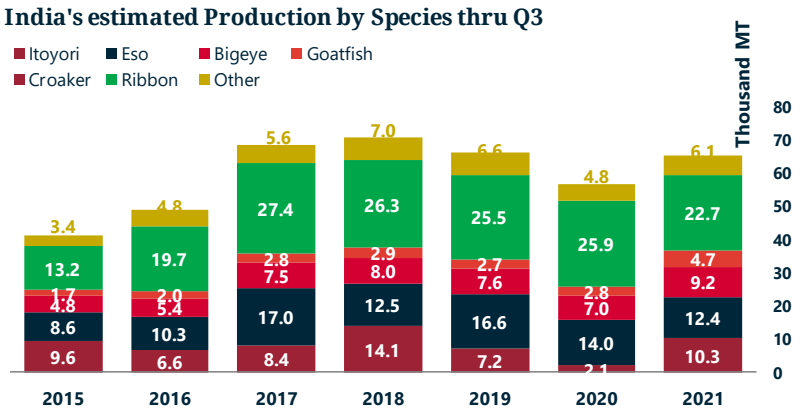

Figure 32. Yearly estimated surimi production from India by species

Analysis

Itoyori jumped from 2 thousand metric tons in 2020 to over 10 thousand metric tons this year. This increase is significant given the production decrease seen out of Thailand. As a result, it makes sense that prices for itoyori in Japan remain strong.

Aside from resource availability, it is not unreasonable to suggest that these high prices incentivize efforts to increase production of itoyori relative to other species.

Countries declaring surimi imports from India from Q1 to Q3

Reporter Name	Species	2015	'15 vs. '14	2016	'16 vs. '15	2017	'17 vs. '16	2018	'18 vs. '17	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Japan	Itoyori	5,631	▼ 35.0%	3,054	▼ 45.8%	3,037	▼ 0.6%	5,530	▲ 82.1%	2,951	▼ 46.6%	928	▼ 68.6%	4,097	▲ 341.5%
	Other	19,791	▼ 21.8%	21,059	▲ 6.4%	23,139	▲ 9.9%	24,399	▲ 5.4%	26,459	▲ 8.4%	23,711	▼ 10.4%	25,865	▲ 9.1%
	Sardine, Other									67					
Taiwan	All	7,082	▼ 31.0%	8,521	▲ 20.3%	9,899	▲ 16.2%	11,377	▲ 14.9%	10,427	▼ 8.4%	9,172	▼ 12.0%	9,178	▲ 0.1%
Russia	All	1,388	▼ 53.7%	3,889	▲ 180.2%	6,738	▲ 73.3%	6,837	▲ 1.5%	5,407	▼ 20.9%	2,046	▼ 62.2%	4,711	▲ 130.3%
Thailand	Gogies	114	▼ 58.5%	364	▲ 219.3%	3,973	▲ 991.5%	3,077	▼ 22.6%	4,829	▲ 56.9%	4,689	▼ 2.9%	10,792	▲ 130.2%
	Other	289	▼ 85.4%	390	▲ 34.9%	353	▼ 9.5%	229	▼ 35.1%	53	▼ 76.9%	416	▲ 684.9%	75	▼ 82.0%
S. Korea	All	3,047	▲ 16.5%	2,091	▼ 31.4%	4,483	▲ 114.4%	4,839	▲ 7.9%	4,531	▼ 6.4%	3,905	▼ 13.8%	3,789	▼ 3.0%
Belarus	All	2,180	▼ 18.9%	2,340	▲ 7.3%	2,933	▲ 25.3%	3,385	▲ 15.4%	3,316	▼ 2.0%	4,080	▲ 23.0%	3,022	▼ 25.9%
Malaysia	All	381		558	▲ 46.5%	4,193	▲ 651.4%	3,499	▼ 16.6%	1,528	▼ 56.3%	2,731	▲ 78.7%	2,562	▼ 6.2%
China	All	1,065	▼ 44.5%	759	▼ 28.7%	2,743	▲ 261.4%	1,938	▼ 29.3%	2,237	▲ 15.4%	1,901	▼ 15.0%	1,166	▼ 38.7%
Singapore	All			75		1,150	▲ 1433.3%	917	▼ 20.3%	1,775	▲ 93.6%	1,529	▼ 13.9%	2,175	▲ 42.2%
Lithuania	All	648	▼ 45.8%	1,848	▲ 185.2%	1,445	▼ 21.8%	1,183	▼ 18.1%	844	▼ 28.7%	584	▼ 30.8%	533	▼ 8.7%
Spain	All	120	▼ 16.7%	886	▲ 638.3%	932	▲ 5.2%	631	▼ 32.3%	508	▼ 19.5%	244	▼ 52.0%	269	▲ 10.2%
USA	All	193	▲ 45.1%	190	▼ 1.6%	273	▲ 43.7%	239	▼ 12.5%	202	▼ 15.5%	246	▲ 21.8%	438	▲ 78.0%
Other		205	▼ 42.3%	263	▲ 28.3%	1,064	▲ 304.6%	280	▼ 73.7%	388	▲ 38.6%	1,077	▲ 177.6%	1,416	▲ 31.5%
Total		**42,134**	**▼ 28.0%**	**46,287**	**▲ 9.9%**	**66,355**	**▲ 43.4%**	**68,360**	**▲ 3.0%**	**65,522**	**▼ 4.2%**	**57,259**	**▼ 12.6%**	**70,088**	**▲ 22.4%**

Table 25. Countries declaring surimi imports form India. Source: each country's customs, authority, UB Consulting

**UB Consulting developed a model to estimate total production figures. Thereafter, production estimates by species use an internal working group approximation that was then calculated using an in-house non-linear model. The estimates provided by the working group were collected in 2020.

Tropical Surimi Production, Vietnam

Vietnam's **production estimates suggest an increase of 23 percent compared to a year ago through Q3.

Vietnam's Estimated Production by Species thru Q3

	Itoyori	Eso	Bigeye	Goatfish	Croaker	Ribbon Seabream	Flying Fish	Other	Total
2015	22,078	13,605	17,869	9,077	15,183	6,351	8,540	7,107	6,052	105,861
2016	15,062	19,212	11,745	14,889	11,745	7,992	7,902	6,694	6,007	101,248
2017	18,767	15,677	11,719	13,016	13,252	7,990	7,990	6,773	5,839	101,022
2018	16,745	23,099	15,451	5,552	12,882	10,691	10,691	9,149	6,789	111,049
2019	19,605	19,802	15,204	6,072	19,843	11,748	11,748	10,056	7,364	121,442
2020	23,254	17,705	13,441	6,216	21,644	8,643	8,643	7,310	7,061	113,917
2021	33,314	21,116	19,900	11,033	19,900	11,080	8,390	6,991	8,101	139,826

Table 26. Yearly estimated surimi production from India by species.

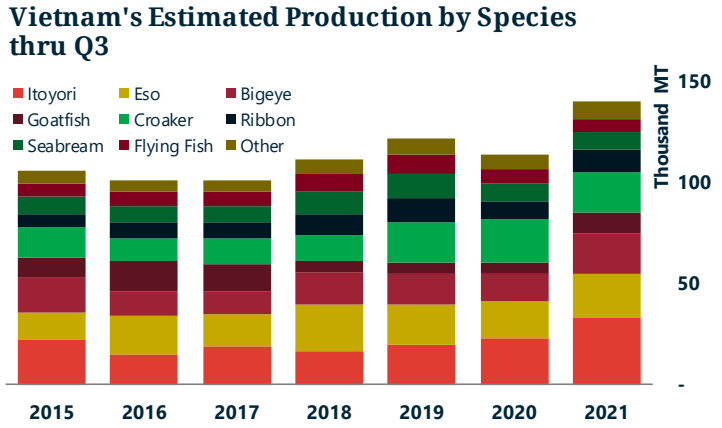

Figure 33. Yearly estimates of Vietnam's surimi production by species.

Analysis

Similarly, surimi production estimates from Vietnam suggest a significant increase compared to both 2020 and 2019. Of notice is the increase of Itoyori to about 23 percent of total production, adding up around 33 thousand metric tons through Q3

Further, we notice a significant increase in Thai imports of Vietnamese surimi by nearly 40 percent compared to the same period last year. Such a figure is also consistent with the decrease in production out of Thailand. Imports from all countries increased except France and the Philippines.

Countries declaring surimi imports from Viet-Nam from Q1 to Q3

Reporter Name	Species	2015	'15 vs. '14	2016	'16 vs. '15	2017	'17 vs. '16	2018	'18 vs. '17	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
S. Korea	All	39,755	▼ 28.3%	37,319	▼ 6.1%	37,935	▲ 1.7%	41,377	▲ 9.1%	39,627	▼ 4.2%	38,559	▼ 2.7%	39,273	▲ 1.9%
Thailand	Gogies	18,932	▲ 4.5%	16,596	▼ 12.3%	21,328	▲ 28.5%	24,609	▲ 15.4%	22,020	▼ 10.5%	20,103	▼ 8.7%	27,816	▲ 38.4%
	Other	2,240	▼ 14.2%	2,180	▼ 2.7%	2,096	▼ 3.9%	1,572	▼ 25.0%	372	▼ 76.3%	119	▼ 68.0%	50	▼ 58.0%
China	All	9,568	▼ 49.4%	8,061	▼ 15.8%	9,671	▲ 20.0%	12,914	▲ 33.5%	18,042	▲ 39.7%	20,884	▲ 15.8%	21,618	▲ 3.5%
Japan	eams, Kingclip	662	▼ 30.2%	409	▼ 38.2%	239	▼ 41.6%	613	▲ 156.5%	228	▼ 62.8%	208	▼ 8.8%	225	▲ 8.2%
	Itoyori	2,404	▼ 33.7%	1,633	▼ 32.1%	1,876	▲ 14.9%	1,758	▼ 6.3%	2,068	▲ 17.6%	2,081	▲ 0.6%	3,051	▲ 46.6%
	Other	9,120	▼ 30.5%	9,443	▲ 3.5%	8,140	▼ 13.8%	9,878	▲ 21.4%	10,850	▲ 9.8%	7,930	▼ 26.9%	9,634	▲ 21.5%
	Sardine, Other	277	▲ 295.7%	76	▼ 72.6%	20	▼ 73.7%			3		26	▲ 766.7%	7	▼ 73.1%
Russia	All	4,664	▲ 2.3%	6,083	▲ 30.4%	4,609	▼ 24.2%	4,075	▼ 11.6%	6,841	▲ 67.9%	5,397	▼ 21.1%	9,310	▲ 72.5%
Malaysia	All	4,293	▲ 1.6%	3,737	▼ 13.0%	4,619	▲ 23.6%	4,730	▲ 2.4%	6,210	▲ 31.3%	5,948	▼ 4.2%	10,790	▲ 81.4%
Taiwan	All	4,671	▼ 28.2%	3,714	▼ 20.5%	2,542	▼ 31.6%	3,098	▲ 21.9%	4,161	▲ 34.3%	3,943	▼ 5.2%	5,513	▲ 39.8%
France	All	4,842	▼ 7.0%	4,135	▼ 14.6%	1,226	▼ 70.4%	364	▼ 70.3%	781	▲ 114.6%	481	▼ 38.4%	302	▼ 37.2%
Indonesia	All	1,319	▼ 28.7%	2,557	▲ 93.9%	2,233	▼ 12.7%	703	▼ 68.5%	1,271	▲ 80.8%	736	▼ 42.1%	1,825	▲ 148.0%
Philippines	All							1,796		3,136	▲ 74.6%	2,412	▼ 23.1%	2,092	▼ 13.3%
Ukraine	All	624	▼ 29.7%	767	▲ 22.9%	905	▲ 18.0%	1,019	▲ 12.6%	1,500	▲ 47.2%	1,300	▼ 13.3%	1,849	▲ 42.2%
Other		2,477	▼ 53.4%	4,538	▲ 83.2%	3,583	▼ 21.0%	2,543	▼ 29.0%	4,332	▲ 70.3%	3,790	▼ 12.5%	6,471	▲ 70.7%
Total		105,848	▼ 25.1%	101,248	▼ 4.3%	101,022	▼ 0.2%	111,049	▲ 9.9%	121,442	▲ 9.4%	113,917	▼ 6.2%	139,826	▲ 22.7%

Table 27. Countries declaring surimi imports from Vietnam. Source: each country's customs, authority, UB Consulting

**UB Consulting developed a model to estimate total production figures. Thereafter, production estimates by species use an internal working group approximation that was then calculated using an in-house non-linear model. The estimates provided by the working group were collected in 2020.

Tropical Surimi Production, Indonesia

Surimi **production estimates from Indonesia suggest a steep decline of about 36 percent through Q3 compared to 2020, decreasing nearly 8 thousand metric tons.

Indonesia's Estimated Production by Species thru Q3

	Itoyori	Eso	Bigeye	Goatfish	Croaker	Ribbon Seabream	Flying Fish	Other	Total
2015	7,131	2,432	1,925	754	2,238	2,408	817	1,801	2,599	22,105
2016	8,152	2,990	2,632	1,590	2,338	2,105	468	1,239	1,871	23,384
2017	4,262	1,910	1,556	267	1,735	1,201	627	267	1,517	13,340
2018	5,456	2,057	2,829	615	1,621	1,685	324	324	1,297	16,208
2019	7,699	3,212	3,035	439	2,194	2,249	439	915	1,755	21,936
2020	6,775	2,688	2,136	437	2,753	1,968	437	1,057	3,613	21,865
2021	5,969	1,690	1,229	307	1,536	1,383	307	307	1,229	13,958

Table 28. Yearly estimates of Indonesia's surimi production by species.

Indonesia's Estimated Production by Species thru Q3

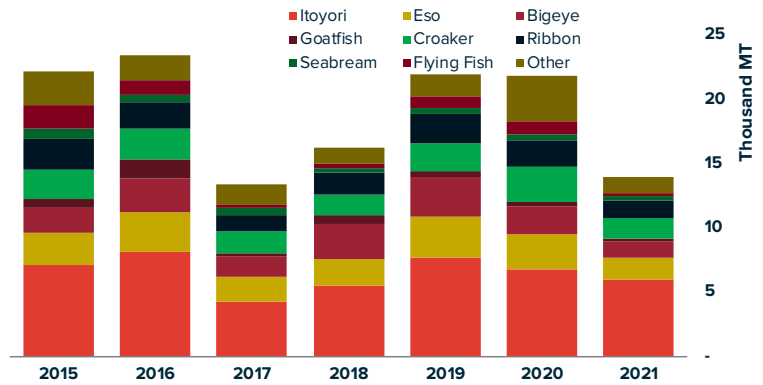

Figure 34. Yearly estimates of Indonesia's surimi production by species.

Countries declaring surimi imports from Indonesia from Q1 to Q3

Reporter Name	Species	2015	'15 vs. '14	2016	'16 vs. '15	2017	'17 vs. '16	2018	'18 vs. '17	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Malaysia	All	4,722		4,911	▲ 4.0%	2,418	▼ 50.8%	3,049	▲ 26.1%	3,685	▲ 20.9%	5,589	▲ 51.7%	5,450	▼ 2.5%
Japan	Itoyori	2,709	▼ 22.4%	1,670	▼ 38.4%	1,724	▲ 3.2%	1,130	▼ 34.5%	1,088	▼ 3.7%	918	▼ 15.6%	1,130	▲ 23.1%
	Other	3,222	▼ 18.1%	3,502	▲ 8.7%	2,105	▼ 39.9%	2,647	▲ 25.7%	2,306	▼ 12.9%	1,315	▼ 43.0%	737	▼ 44.0%
	Sardine, Other			16		36	▲ 125.0%	29	▼ 19.4%						
S. Korea	All	4,392	▼ 23.5%	4,521	▲ 2.9%	2,803	▼ 38.0%	1,704	▼ 39.2%	3,230	▲ 89.6%	3,709	▲ 14.8%	2,381	▼ 35.8%
China	All	1,358	▼ 53.8%	1,432	▲ 5.4%	892	▼ 37.7%	1,757	▲ 97.0%	3,312	▲ 88.5%	4,787	▲ 44.5%	2,487	▼ 48.0%
Taiwan	All	2,324	▼ 56.2%	1,839	▼ 20.9%	1,095	▼ 40.5%	1,373	▲ 25.4%	1,573	▲ 14.6%	1,322	▼ 16.0%	952	▼ 28.0%
Thailand	Gogies	681	▲ 389.9%	2,259	▲ 231.7%	319	▼ 85.9%	865	▲ 171.2%	2,782	▲ 221.6%	1,723	▼ 38.1%	1,738	▲ 0.9%
	Other	97	▼ 14.9%	142	▲ 46.4%	40	▼ 71.8%	16	▼ 60.0%	31	▲ 93.8%	2	▼ 93.5%	2	▲ 0.0%
Hong Kong	All	130	▲ 16.1%	193	▲ 48.5%	96	▼ 50.3%	144	▲ 50.0%	178	▲ 23.6%	198	▲ 11.2%	233	▲ 17.7%
Australia	All	181	▼ 24.9%	189	▲ 4.4%	70	▼ 63.0%	82	▲ 17.1%	71	▼ 13.4%	70	▼ 1.4%	115	▲ 64.3%
Philippines	All							168		209	▲ 24.4%	114	▼ 45.5%	196	▲ 71.9%
Singapore	All	116		64	▼ 44.8%	127	▲ 98.4%			50		54	▲ 8.0%		
Canada	All	41	▼ 33.9%	49	▲ 19.5%	40	▼ 18.4%	25	▼ 37.5%	25	▲ 0.0%				
Other		11	▼ 96.6%	63	▲ 472.7%	52	▼ 17.5%	23	▼ 55.8%	5	▼ 78.3%	9	▲ 80.0%	25	▲ 177.8%
Total		**19,984**	**▼ 10.8%**	**20,850**	**▲ 4.3%**	**11,817**	**▼ 43.3%**	**13,012**	**▲ 10.1%**	**18,545**	**▲ 42.5%**	**19,810**	**▲ 6.8%**	**15,446**	**▼ 22.0%**

Table 29. Countries declaring surimi imports from Indonesia. Source: each country's customs, authority, UB Consulting

Analysis

However, this is similar to the production levels seen in 2017 and 2018. Still, this is a considerable departure from the figures registered in 2020 and 2019, where production levels hovered around 21 thousand metric tons during the first three quarters.

In terms of trade, volumes from countries declaring imports declined by about 22 percent through Q3. Although minimal in terms of volume, it is interesting to notice that Japanese imports of itoyori from this country managed to increase. Similarly, Thai imports from Indonesia also remained flat.

**UB Consulting developed a model to estimate total production figures. Thereafter, production estimates by species use an internal working group approximation that was then calculated using an in-house non-linear model. The estimates provided by the working group were collected in 2020.

Tropical Surimi Production, Malaysia

Surimi **production estimates for Malaysia suggest a steep drop of 43 percent or about 3 thousand metric tons through Q3 year-over-year.

Malaysia's Estimated Production by Species thru Q3

	Itoyori	Eso	Bigeye	Goatfish	Croaker	Ribbon Seabream	Flying Fish	Other	Total
2015	1,338	1,408	733	1,408	699	514	257	141	543	7,041
2016	1,366	1,438	748	1,438	714	524	262	144	555	7,188
2017	1,066	1,122	584	1,122	557	409	204	112	433	5,610
2018	1,048	1,103	574	1,103	548	403	201	110	426	5,517
2019	1,667	1,755	914	1,755	872	640	320	176	677	8,776
2020	1,263	1,329	692	1,329	660	485	242	133	513	6,646
2021	791	829	266	829	266	266	117	154	229	3,747

Table 30. Yearly estimates of Malaysia's surimi production by species.

Malaysia's Estimated Production by Species thru Q3

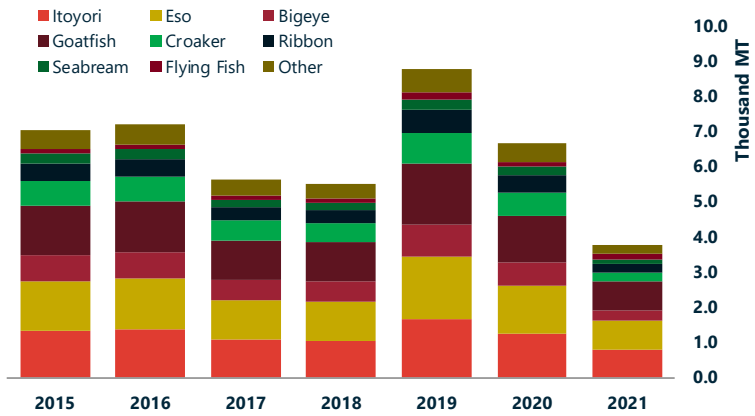

Figure 35. Yearly estimates of Malaysia's surimi production by species.

Analysis

Production from this country has been on a steady linear decline since 2015.

In terms of trade, volumes from countries declaring imports from Malaysia through Q3 decreased by about 45 percent compared to a year ago. Japanese imports of Malaysian surimi are down nearly 50 percent compared to a year ago.

Countries declaring surimi imports from Malaysia from Q1 to Q3

Reporter Name	Species	2015	'15 vs. '14	2016	'16 vs. '15	2017	'17 vs. '16	2018	'18 vs. '17	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Japan	Itoyori					48						12			
	Other	5,739	▼ 30.9%	4,817	▼ 16.1%	3,986	▼ 17.3%	3,212	▼ 19.4%	3,855	▲ 20.0%	3,736	▼ 3.1%	1,910	▼ 48.9%
	Sardine, Other									20		29	▲ 45.0%	32	▲ 10.3%
China	All	649	▼ 28.9%	666	▲ 2.6%	623	▼ 6.5%	613	▼ 1.6%	623	▲ 1.6%	592	▼ 5.0%	523	▼ 11.7%
S. Korea	All	160	▼ 60.0%	312	▲ 95.0%	248	▼ 20.5%	196	▼ 21.0%	215	▲ 9.7%	828	▲ 285.1%	264	▼ 68.1%
Thailand	Gogies	279	▼ 29.9%	96	▼ 65.6%					424		25	▼ 94.1%		
	Other			19											
Hong Kong	All	67	▲ 148.1%	8	▼ 88.1%			10		63	▲ 530.0%	310	▲ 392.1%	279	▼ 10.0%
Taiwan	All	145	▼ 15.7%	104	▼ 28.3%	114	▲ 9.6%	25	▼ 78.1%	49	▲ 96.0%	78	▲ 59.2%	66	▼ 15.4%
Singapore	All	65	▼ 59.4%	72	▲ 10.8%	52	▼ 27.8%	68	▲ 30.8%	16	▼ 76.5%	39	▲ 143.8%	13	▼ 66.7%
Canada	All					34						34		34	▲ 0.0%
Philippines	All							33							
Malaysia	All														
Australia	All	1		4	▲ 300.0%					5					
Other				52								25		25	▲ 0.0%
Total		**7,105**	**▼ 33.1%**	**6,150**	**▼ 13.4%**	**5,105**	**▼ 17.0%**	**4,157**	**▼ 18.6%**	**5,270**	**▲ 26.8%**	**5,708**	**▲ 8.3%**	**3,146**	**▼ 44.9%**

Table 31. Countries declaring surimi imports from Malaysia. Source: each country's customs, authority, UB Consulting

Disclaimer: Trade data for Malaysia seems to match at times between countries declaring imports and official domestic data exports. We used total export figures as a function for **production and use countries declaring imports mainly for trade—although both sets of data are included for all analyzed countries.

**Production estimates by species use an internal working group approximation that was then calculated using an in-house non-linear model. The estimates provided by the working group were collected in 2020.

Tropical Surimi Production, Pakistan

Pakistan's surimi production estimates suggest an eye-opening 59 percent increase through Q3 year-over-year, from 4.8 to 7.6 thousand metric tons in 2021. While this number could be relatively skewed due to the disruption caused by the pandemic, production through Q3 is still up compared to 2019 figures.

Pakistan's Estimated Production by Species thru Q3

	Itoyori	Eso	Bigeye	Goatfish	Croaker	Ribbon	Seabream	Flying Fish	Other	Total
2015	1,324	265	132	132	265	#N/A	132	132	265	2,648
2016	1,283	243	122	122	175	#N/A	122	122	243	2,430
2017	3,441	656	328	328	328	#N/A	328	328	823	6,559
2018	4,883	888	444	444	444	#N/A	444	444	888	8,878
2019	3,242	621	310	310	481	#N/A	310	310	621	6,206
2020	2,616	481	241	241	272	#N/A	241	241	481	4,813
2021	4,050	770	385	385	436	#N/A	436	385	821	7,666

Table 32. Yearly estimates of Pakistan's surimi production by species.

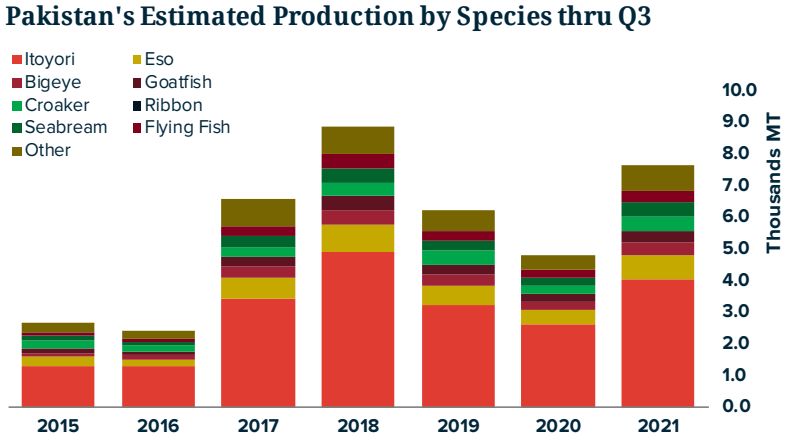

Figure 36. Yearly estimates of Pakistan's surimi production by species.

Analysis

Still, production figures this year are not at a record high but show a considerable recovery over the y-o-y decrease seen over the last two years.

In terms of trade, volumes from countries declaring imports from Pakistan show an increase of nearly 30 percent year-over-year. Of notice is the significant increase of Japanese imports of itoyori, surpassing the 1 thousand metric ton mark.

Countries declaring surimi imports from Pakistan from Q1 to Q3

Reporter Name	Species	2015	'15 vs. '14	2016	'16 vs. '15	2017	'17 vs. '16	2018	'18 vs. '17	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
S. Korea	All	3,435	▼ 15.7%	2,174	▼ 36.7%	2,575	▲ 18.4%	2,625	▲ 1.9%	1,776	▼ 32.3%	1,285	▼ 27.6%	1,797	▲ 39.8%
Thailand	Gogies	155	▲ 121.4%	118	▼ 23.9%	625	▲ 429.7%	2,354	▲ 276.6%	2,464	▲ 4.7%	1,857	▼ 24.6%	2,599	▲ 40.0%
	Other			33		19	▼ 42.4%					1		167	▲ 16600.0%
Japan	Itoyori	633	▼ 31.6%	294	▼ 53.6%	863	▲ 193.5%	1,045	▲ 21.1%	750	▼ 28.2%	399	▼ 46.8%	1,172	▲ 193.7%
	Other	34	▼ 87.4%	16	▼ 52.9%			106		396	▲ 273.6%	230	▼ 41.9%	228	▼ 0.9%
China	All			34		643	▲ 1791.2%	887	▲ 37.9%	1,525	▲ 71.9%	1,848	▲ 21.2%	981	▼ 46.9%
Malaysia	All	102		125	▲ 22.5%	167	▲ 33.6%	249	▲ 49.1%	302	▲ 21.3%	121	▼ 59.9%	454	▲ 275.2%
Hong Kong	All					25				23		66	▲ 187.0%	68	▲ 3.0%
Taiwan	All	43	▼ 14.0%					24		24	▲ 0.0%				
Singapore	All					25						25			
Indonesia	All														
Other															
Total		4,402	▼ 22.2%	2,794	▼ 36.5%	4,942	▲ 76.9%	7,290	▲ 47.5%	7,260	▼ 0.4%	5,832	▼ 19.7%	7,466	▲ 28.0%

Table 33. Pakistan exports by species. Source: Pakistan's customs, authority, UB Consulting

Disclaimer: For Pakistan, we included the table that includes Pakistan exports by destination and the production table. Again, exports are a function of production. Still, since we are assuming that nearly 100 percent of production is exported out of this country, we could not cross-examine countries reporting imports and this country's exports before 2020. Still, they are a decent indicator to see, but we only included exports in this report.

**Production estimates by species use an internal working group approximation that was then calculated using an in-house non-linear model. The estimates provided by the working group were collected in 2020.

**Production estimates by species use an internal working group approximation that was then calculated using an in-house non-linear model. The estimates provided by the working group were collected in 2020.

Tropical Surimi Production, Myanmar

Myanmar's surimi production estimates show an increase of 13 percent through Q3 year-over-year. This increase suggests recovery from our Q2 report, very likely caused by figures registered last year due to the pandemic. Current figures align with pre-pandemic averages at about 1,300 metric tons through Q3 year-over-year. From a trade perspective, we noticed how Japanese imports of Myanmar's itoyori surimi surged 32 percent, from 198 metric tons in 2020 to 262 metric tons in 2021 through Q3.

Myanmar's Estimated Production by Species thru Q3

	Itoyori	Eso	Bigeye	Goatfish	Croaker	Ribbon	Seabream	Flying Fish	Other	Total
2015	197	49	41	87	543	16	22	22	109	1,086
2016	308	66	55	105	796	24	32	32	158	1,575
2017	265	56	47	89	681	20	27	27	135	1,347
2018	274	57	49	94	705	21	28	28	140	1,395
2019	337	71	60	116	870	26	34	34	172	1,721
2020	241	52	43	83	623	18	25	25	123	1,233
2021	263	60	60	73	721	21	28	28	139	1,394

Table 34. Yearly estimates of Myanmar's surimi production by species.

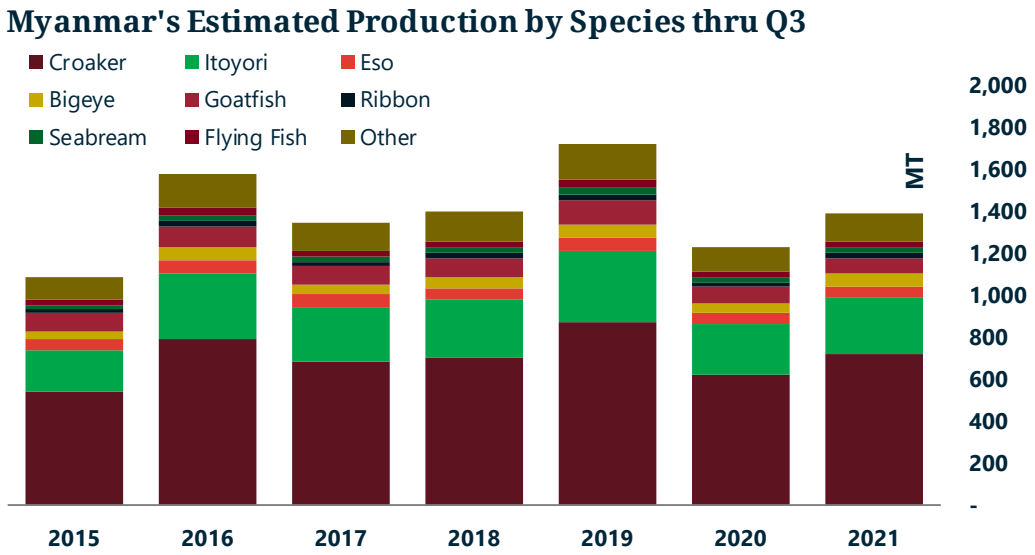

Figure 37. Yearly estimates of Myanmar's surimi production by species.

Countries declaring surimi imports from Myanmar from Q1 to Q3

Reporter Name	Species	2015	'15 vs. '14	2016	'16 vs. '15	2017	'17 vs. '16	2018	'18 vs. '17	2019	'19 vs. '18	2020	'20 vs. '19	2021	'21 vs. '20
Japan	Barrac, Sea Breams, Kingclip					22		57	▲ 159.1%	39	▼ 31.6%	38	▼ 2.6%	8	▼ 78.9%
	Itoyori	388	▼ 26.2%	452	▲ 16.5%	396	▼ 12.4%	285	▼ 28.0%	522	▲ 83.2%	198	▼ 62.1%	262	▲ 32.3%
	Other	197	▼ 69.6%	257	▲ 30.5%	268	▲ 4.3%	399	▲ 48.9%	392	▼ 1.8%	253	▼ 35.5%	346	▲ 36.8%
S. Korea	All	204	▲ 58.1%	733	▲ 259.3%	412	▼ 43.8%	403	▼ 2.2%	340	▼ 15.6%	389	▲ 14.4%	155	▼ 60.2%
Thailand	Gogies			56		111	▲ 98.2%	148	▲ 33.3%	277	▲ 87.2%	38	▼ 86.3%	19	▼ 50.0%
	Other	83										81		332	▲ 309.9%
Taiwan	All							45		81	▲ 80.0%	171	▲ 111.1%	228	▲ 33.3%
China	All	173	▼ 57.1%			28		38	▲ 35.7%	50	▲ 31.6%			19	
Malaysia	All	33		55	▲ 66.7%	78	▲ 41.8%			9		52	▲ 477.8%	7	▼ 86.5%
Other		8	▼ 57.9%	22	▲ 175.0%	32	▲ 45.5%	20	▼ 37.5%	11	▼ 45.0%	13	▲ 18.2%	18	▲ 38.5%
Total		1,086	▼ 37.0%	1,575	▲ 45.0%	1,347	▼ 14.5%	1,395	▲ 3.6%	1,721	▲ 23.4%	1,233	▼ 28.4%	1,394	▲ 13.1%

Table 35. Countries declaring surimi imports from Myanmar. Source: each country's customs, authority, UB Consulting

**Production estimates by species use an internal working group approximation that was then calculated using an in-house non-linear model. The estimates provided by the working group were collected in 2020.

Disclaimer: Myanmar's production is calculated using import data from declaring countries as Myanmar does not publish trade data

Sardine Production and Trade, Peru to Japan

Since it is assumed that all Peruvian exports of Peruvian sardine surimi are a production function, we will refer to them interchangeably.

As such, we can notice that Japanese imports of Peruvian sardine surimi are up from 514 metric tons in 2020 to 551 metric tons in 2021, or 7 percent. However, this number is considerably lower than 2019, when production surpassed 800 metric tons through Q3. Because a seasonal pattern is not clear yet, we are uncertain of how Q4 is likely to play.

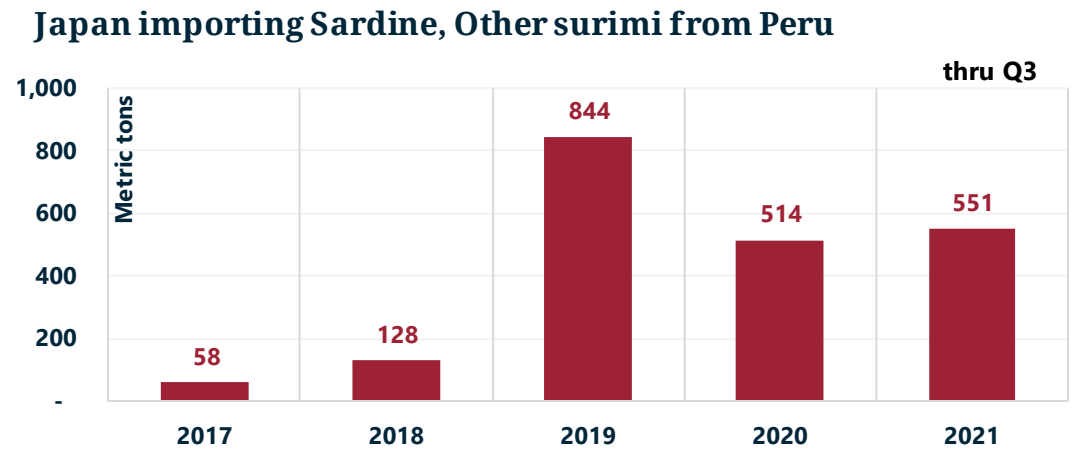

Figure 38. Japanese imports of sardine surimi from Peru. Source: Japan's customs, UB Consulting

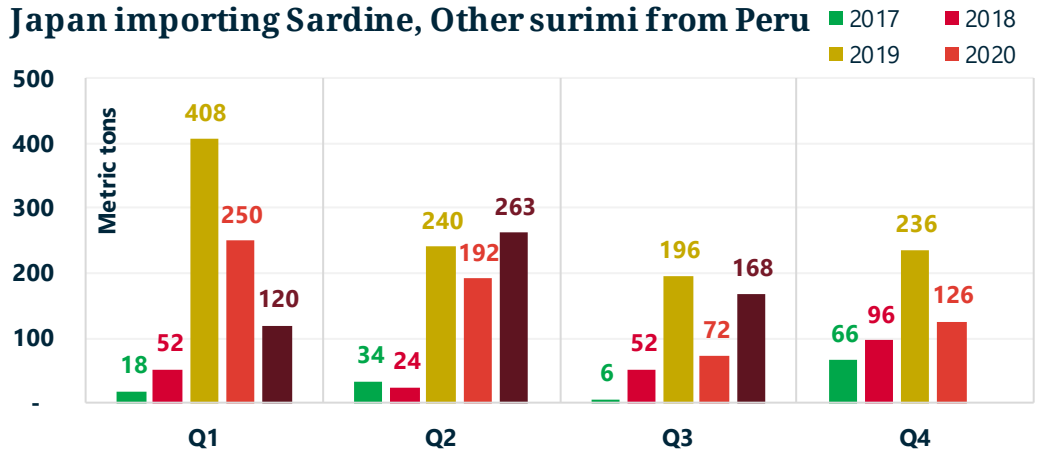

Table 39. Japanese imports of sardine surimi from Peru. Source: Japan's customs, UB Consulting

Sardine surimi, to Japan, Q1 to Q3

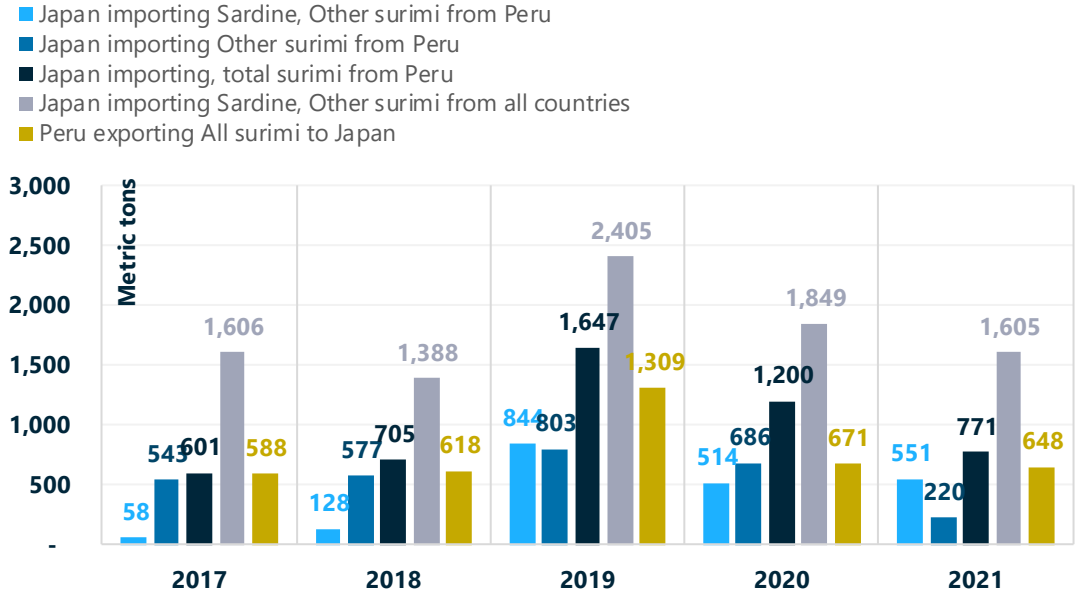

Figure 40. Japanese imports of sardine surimi from Peru, and Peruvian exports of surimi to Japan Source: Japan's customs, Peru's customs, UB Consulting

China, Surimi Production Estimates, and Trade

We finally got some production estimates for the elephant in the room. These estimates do not break down production by species for tropical surimi but separate carp volumes.

These estimates suggest that surimi production from China follows an upward linear trend; in other words, surimi production is growing for carp and tropical surimi. In 2021, tropical and carp surimi production grew 8 and 6 percent compared to a year ago. This increase represents a recovery from a slight decrease last year due to the pandemic.

The Philippines' imports of Chinese surimi continue to register substantial gains year-over-year in trade, while Korean and Japanese imports continue to decrease.

Surimi Production Estimates, China Q1 to Q3

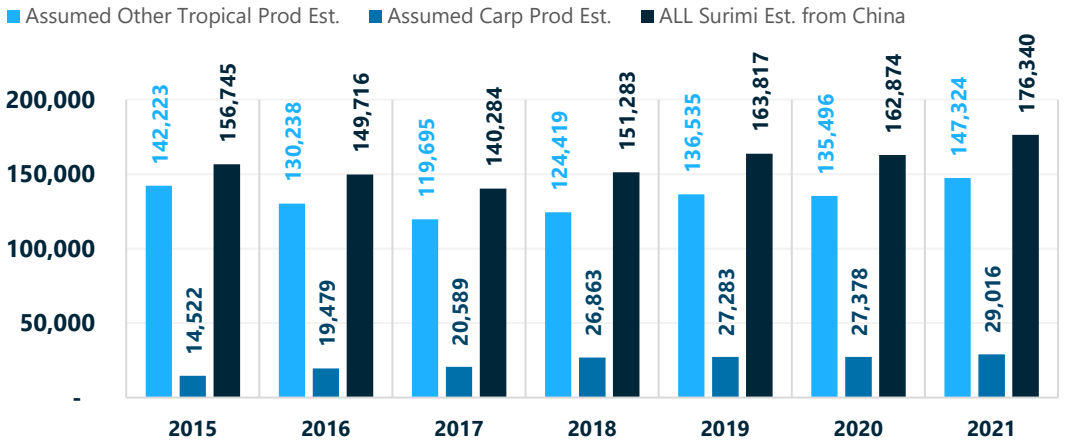

Figure 41. Production estimates of Chinese surimi. Source: Customs, UB Consulting.

Surimi Imports from China Q1 to Q3

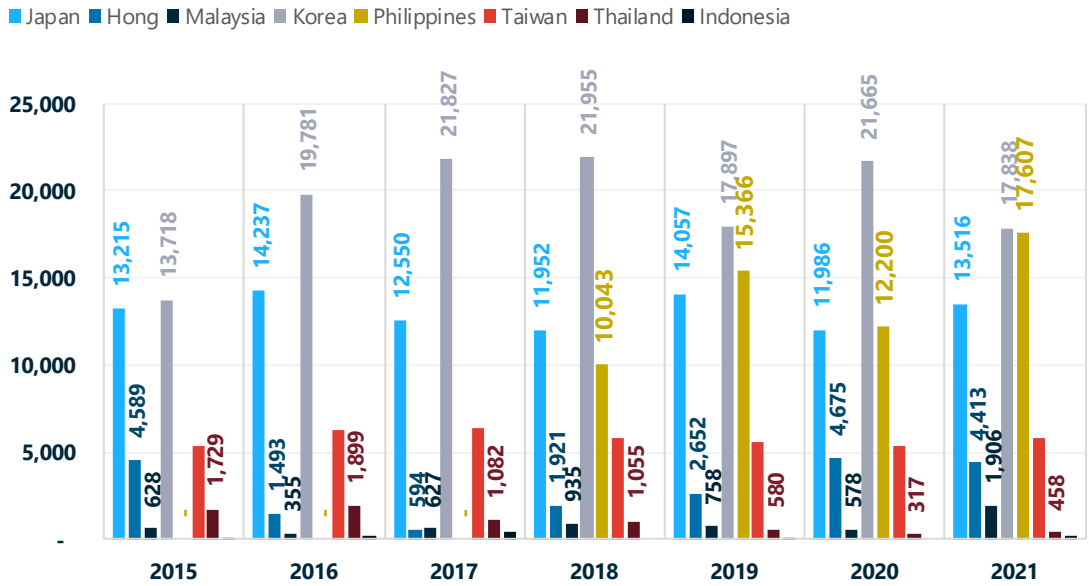

Figure 42. Countries declaring imports of Chinese surimi. Source: Customs, UB Consulting.

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