



**Australian Government**  
**Bureau of Rural Sciences**

## **Japanese market update 2009**

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## Executive Summary

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<b>Background</b>	The Commission for the Conservation of Southern Bluefin Tuna (CCSBT) must ensure that complete and accurate data are available to the Commission to support its decision-making. Information derived from markets provides an important secondary source of information on the level of southern bluefin tuna (SBT) catch.
<b>Purpose</b>	This update provides estimates of retrospective unreported catch of southern bluefin tuna (SBT) for calendar years 2006, 2007 and 2008 using the methods and assumptions of the 2006 Japanese Market Review (2006) (JMR). These estimates of retrospective unreported catch are required for consideration in scenario modelling of the SBT spawning stock biomass to be undertaken prior to CCSBT16, and for inclusion in the CCSBT Secretariat's review of global catch by country.
<b>Unreported domestic catch</b>	<p><i>Double-count case 1</i></p> <p>Retrospective estimates of unreported domestic catches based on market-specific assumptions applied by the JMR for double-count case 1 are 2638 t for 2006, 2913 t for 2007, and 1047 t for 2008 (whole weight).</p> <p><i>Double-count case 2</i></p> <p>Retrospective estimates of unreported domestic catches based on market-specific assumptions applied by the JMR for double-count case 2 are 3465 t for 2006, 3697 t for 2007, and 1601 t for 2008 (whole weight).</p>
<b>Recommendations</b>	Since 2008, a number of assumptions applied by the JMR have been revised (see CCSBT-CC/0810/21). These revisions significantly alter the estimates of Japanese domestic wild SBT sold through Japanese seafood markets. However, little information to support these revisions has been made available to member and cooperating non-members, while one key assumption (the proportion of domestic wild SBT sold in-market) has remained static. Until members and cooperating non-members can work through new information together to refine all assumptions, and possibly develop better methods to compare sales of imported product with reported import quantities, we recommend that assumptions applied by the Japanese Market Review to 2005 data continue to be used.

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## Background

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The Commission for the Conservation of Southern Bluefin Tuna (CCSBT) must ensure that complete and accurate data are available to the Commission to support its decision-making. Information derived from markets provides an important secondary source of information on the level of southern bluefin tuna (SBT) catch. The purpose of this update is to provide estimates of retrospective unreported catch of SBT for calendar years 2006, 2007 and 2008, based on the methods and assumptions of the Independent Review of Japanese Southern Bluefin Tuna Market Data Anomalies (2006) (JMR). These estimates of retrospective unreported catch are required for consideration in scenario modelling of the SBT spawning stock biomass to be undertaken prior to CCSBT16, and for inclusion in the CCSBT Secretariat's review of global catch by country.

The JMR attempted to directly estimate the catch of wild, frozen SBT by Japanese and NZ-Japan joint venture fishers (or 'domestic' catch) distributed in Japan per calendar year. The estimation of domestic wild, frozen SBT now follows these general steps (numbered in Fig. 1):

1. For each individual Japanese seafood market for which data on frozen SBT are available (Fig. 1, Step 1a), determine the proportion attributable to Japanese and NZ-Japan joint venture fishers. To achieve this, deduct the proportion of imported farmed SBT (Fig. 1, Step 1b) and imported wild SBT (Fig. 1, Step 1c), based on assumed ratios of domestic wild:imported farmed SBT and domestic wild:imported wild SBT (Appendix 1)
2. Account for the proportion of domestic wild SBT caught by Japanese and NZ-Japan joint venture fleets sold off-market, and add this to quantities sold in-market. This addition is based on an assumed ratio of product sold in-market to product sold off-market (Fig. 1, Step 1d) (Appendix 1)
3. Sum with reported amounts of wild, frozen SBT exported from Japan (Fig. 1, Step 2) and convert to whole weight (Appendix 1)
4. Because product can remain in storage for extended periods ( $\leq 2$  years), redistribute estimates of domestic wild, frozen SBT from year of market sale to year of catch, based on data collected at the Tsukiji Fish Market (methodology adopted from CCSBT-ESC/0809/40) (Fig. 1, Step 3) (Appendix 2)
5. Calculate the discrepancies between estimates of domestic catches in 2006–08 and reported domestic catches in 2006–08 (Fig. 1, Step 4) (see Results)

At the Compliance Committee meeting of CCSBT15 (October 2008), Japan informed other members and cooperating members that some of the assumptions used in the JMR and subsequent analyses of market anomalies had been updated based on recent data collected from the Tsukiji Fish Market (CCSBT-CC/0810/21). Specifically, the ratios used in Steps 1b and 1c to deduct farmed and imported wild SBT from market sales had been revised; effectively, the proportions of frozen farmed SBT and imported wild SBT sold through the Japanese seafood markets is now assumed to be greater than in 2005. No change was made to the ratio of domestic wild SBT sold off-market at Step 1d.

Major changes to the management of the Japanese SBT longline fleet were implemented in April 2006 and a reduction in Japan's national allocation came into effect in 2007; thus, it is plausible that assumptions applied by the JMR—which were based on data available in 2005—need to be revised. However, if the proportion of domestic wild, frozen SBT sold in-market has decreased, it is highly unlikely that this would be unaccompanied by a change in the ratio sold off-market. Furthermore, if the proportion of imported wild, frozen SBT sold in-market has increased significantly in recent years (e.g. to the extent that imported product represents more than 30% of in-market sales of frozen SBT, as proposed in CCSBT/CC/0810/21), it is possible that estimates of imported wild SBT sold in Japanese seafood markets will exceed reported quantities of imported frozen SBT.

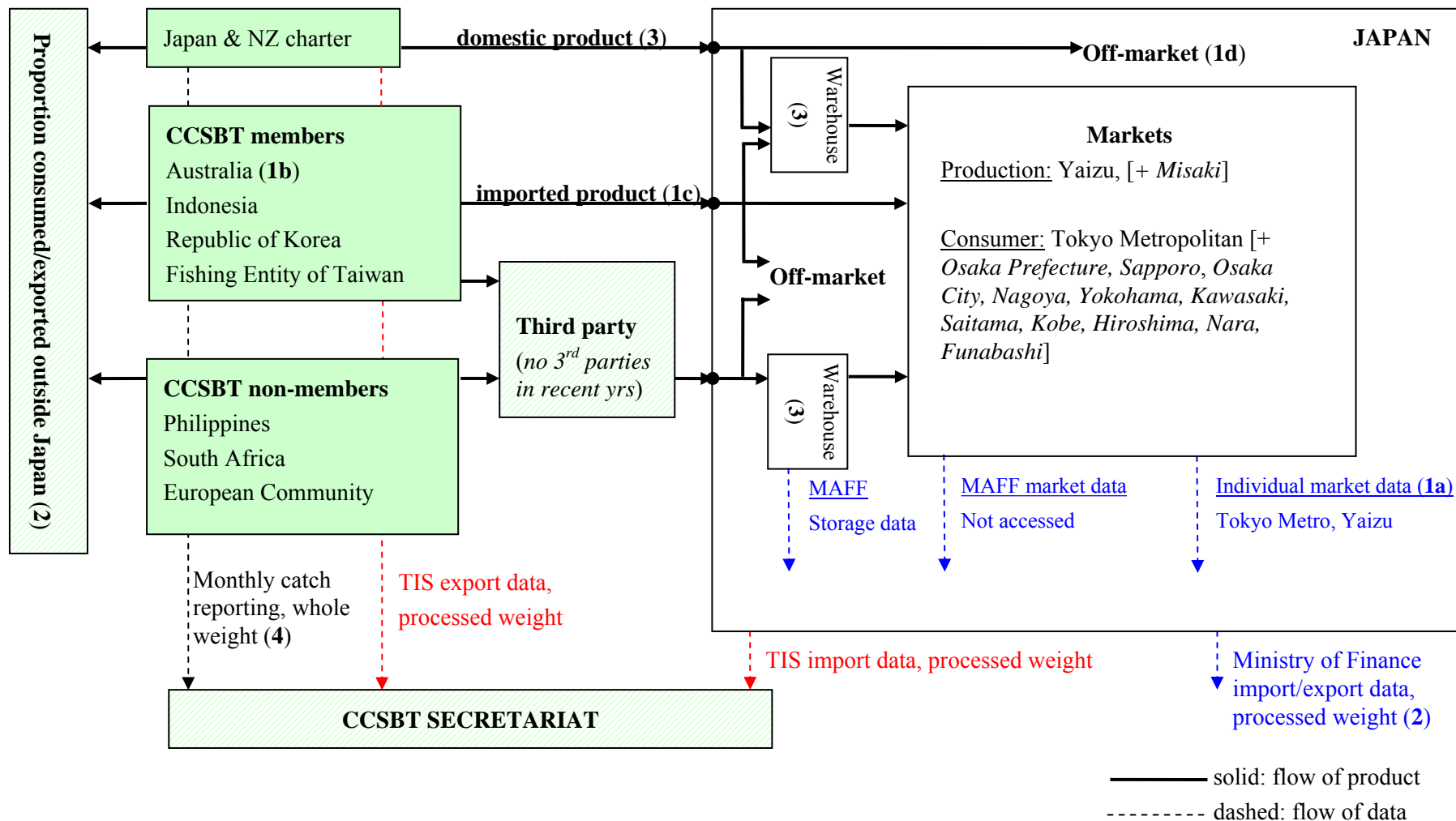


Fig. 1. Flow of product and flow of data among CCSBT members and cooperating non-members. Markets in *italics* were not included in this update

Estimation of the amount of frozen imported farmed and imported wild SBT being sold through the Japanese seafood markets is contingent on the methods used to collect the survey data that formed the basis of revised assumptions in CCSBT-CC/0810/21: what proportion of wholesalers were interviewed, how representative they are of all wholesalers in the main markets of Tsukiji and Yaizu, and on how many days a month the wholesalers were surveyed. If this level of information is made available to the Extended Scientific Committee of the CCSBT, then members and cooperating non-members can work together to revise the assumptions of the JMR to match current market trends. However, until such time as this level of information is made available for both imported farmed and imported wild product, we recommend that market ratios are assumed to have remained unchanged since 2005. Hence, in this 2009 update, we continued to apply the assumptions of the JMR.

## Methods

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### Estimation of total frozen domestic-caught SBT distributed in Japan: Appendix 1

The quantities of total in-market frozen SBT (t) sold through the Tokyo Metropolitan Central Wholesale Market (incorporating Tsukiji, Adachi and Ohta) and Yaizu Fish Market in 2006–08 were obtained from public statistics published on each market's website. The following market-specific proportions of in-market, frozen-farmed SBT and double-counted SBT, applied by the JMR to 2005 market data, were used in this update.

#### **In-market, frozen-farmed SBT as a proportion of total in-market frozen SBT**

<b>Market</b>	<b>Assumed proportion</b>
Tokyo Metropolitan	6.48% (JMR p. 69)
Yaizu	0% (JMR p. 75)

#### **Double-counted frozen SBT as a proportion of total in-market frozen SBT**

<b>Market</b>	<b>Assumed proportion</b>
Tokyo Metropolitan	Case 1: 6.7% (JMR p. 72–73) Case 2: 1.8% (JMR p. 73)
Yaizu	Case 1: 64.5% (JMR p. 76) Case 2: 17% (JMR p. 77)

#### **Imported wild, frozen SBT as a proportion of total in-market frozen SBT**

<b>Market</b>	<b>Assumed proportion</b>
Tokyo Metropolitan	5% (JMR p. 4, 98, 100)
Yaizu	5% (JMR p. 4, 98, 100)

#### **Domestic frozen SBT sold off-market as a proportion of domestic in-market frozen SBT**

The JMR assumed that of the quantity of domestic wild, frozen SBT sold through markets, an additional 15% was distributed directly to tuna wholesalers and retailers, avoiding the market system altogether. Therefore, an addition of 15% of domestic wild, frozen SBT is made for each market.

### Other calculations

In 2005, Tokyo Metropolitan and Yaizu market represented 78.96% of in-market sales of frozen wild SBT through the 14 markets in the final calculations of the JMR. Thus, estimates of total domestic wild SBT sold through each of these 2 markets were summed, and the result scaled up to represent 100% of frozen wild SBT sales through the 14 markets included in the JMR, assuming that Tokyo Metropolitan and Yaizu markets again represented 78.96% of sales in 2006–08.

Lastly, the sums of total domestic wild SBT distributed in Japan were converted into whole-weight (WW) equivalents, and summed with whole-weight equivalents of product exported from Japan (obtained from the Ministry of Finance trade statistics website, [www.customs.go.jp/toukei/info/index\\_e.htm](http://www.customs.go.jp/toukei/info/index_e.htm)) to estimate the total domestic-caught SBT distributed in Japan in 2006, 2007 and 2008.

### Redistribution of estimates to year of catch using market-lag formula: Appendix 2

Estimates of domestic-caught SBT distributed in Japan per calendar (market) year were redistributed to year of catch to account for prolonged storage of frozen SBT, using the market-lag formula described in CCSBT-ESC/0809/40.

$$\begin{aligned} \text{SBT distributed (sold) Market Year } (i) &= 7\% \text{ caught in Year } (i-2) + 86\% \text{ caught in Year } (i-1) \\ &+ 7\% \text{ caught in Year } (i) \end{aligned} \quad (\text{Eq. 1})$$

Redistributed estimates are referred to as total Japanese domestic longline catch by catch year.

Because data are not yet available to determine Year( $i-2$ ) for SBT caught in 2007, or for SBT caught in 2007, or Year( $i-1$ ) and Year( $i-2$ ) for SBT caught in 2008, these proportions were projected based on the composition of ‘total Japanese domestic longline catch by catch year’ in 2006, where:

- 10% of the 2006 catch was sold in 2006 (Year  $i$ )
- 84% of the 2006 catch was sold in 2007 (Year  $i-1$ )
- 6% of the 2006 catch was sold in 2008 (Year  $i-2$ )

### Calculation of retrospective unreported catch by the Japanese domestic longline fishery: anomalies between estimated and reported catch

Retrospective unreported catches by the Japanese domestic longline fishery in 2006, 2007 and 2008 were calculated as the difference between the estimate of total Japanese domestic longline catch by catch year (from Appendix 2) and total Japanese domestic longline unloaded (Japanese reported catch + NZ-Japan Joint Venture reported catch) (Source: CCSBT review of global catch by flag, and NZ annual fishery report). Total Japanese domestic longline unloaded was a sum of Japan’s reported catch (CCSBT-ESC/0809/6) and NZ reported catch for the charter fishery (NZ’s CCSBT Fishery Reports). The 2008 NZ Fishery Report is not yet available, so the 2008 value was estimated from CCSBT monthly catch reporting values for 2008 based on the relative proportion of NZ total reported catch to NZ charter reported catch in 2007.



## Results

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### Anomalies between domestic Japanese longline catch and reported SBT catch

Tokyo and Yaizu markets

	2006		2007		2008	
	Case 1	Case 2	Case 1	Case 2	Case 1	Case 2
<b>1.</b> Estimate of Japanese Domestic Longline catch (WW) (from Appendix 2)	6950	7777	5967	6751	4179	4733
<b>2.</b> Total domestic (Japanese) unloading (Japanese Reported Catch + NZ/Japan Joint Venture + Aust/Japan Joint Venture + RTMP (WW) Source: CCSBT	4312	4312	3054	3054	3132	3132
<b>3.</b> Variance in domestic (Japanese) longline catch and reported SBT catch <b>1.-2.</b>	2638	3465	2913	3697	1047	1601

WW: whole-weight equivalent, t

## Discussion points for participants of the CCSBT Extended Scientific Committee

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Following the major changes to management of the Japanese SBT longline fleet implemented in April 2006 and the reduction in Japan's national allocation effective 2007, it is plausible that the assumptions applied by the JMR (based on data available in 2005) need to be updated. However, revised formulae provided by Japan in CCSBT-CC/0810/21 for estimating proportions of in-market frozen farmed SBT and in-market imported wild frozen SBT raise a number of issues:

- Revised deductions for imported farmed and wild SBT were not accompanied by a revised addition for estimating the proportion of off-market domestic wild SBT. It is highly unlikely that the proportion of in-market domestic wild frozen SBT will change without an accompanying change in the proportion of off-market distribution of domestic product
- Potentially, as suggested in CCSBT-CC/0810/21, a greater proportion of imported wild SBT is now being sold through the Japanese seafood markets. It now seems likely that estimates of imported wild SBT based on the revisions of CCSBT-CC/0810/21 will exceed reported imports per calendar year (available through [www.customs.go.jp/toukei/info/index\\_e.htm](http://www.customs.go.jp/toukei/info/index_e.htm)). The revised assumption regarding proportions of domestic vs. imported wild frozen SBT in CCSBT-CC/0810/21 requires further consideration by all members and cooperating non-members of the CCSBT Extended Scientific Committee.

We propose that participants of the CCSBT Extended Scientific Committee work together to review new information and jointly revise four formulae for estimating proportions of (1) in-market frozen farmed SBT, (2) in-market imported wild frozen SBT, (3) off-market domestic wild frozen SBT and (4) off-market imported farmed and wild frozen SBT.

Until these issues can be reviewed and resolved, we recommend adopting the assumptions used in the JMR for updating retrospective estimates of unreported catch by longliners based on Japanese seafood market data (i.e. market anomalies). Applying the assumptions of the JMR, retrospective estimates of unreported longline catch are:

- *Double-count case 1*: 2638 t in 2006, 2913 t in 2007, and 1047 t in 2008 (whole weight).
- *Double-count case 2*: 3465 t in 2006, 3697 t in 2007, and 1601 t in 2008 (whole weight).

## Appendix 1. Estimation of total frozen domestic-caught SBT distributed in Japan

### Tokyo Metropolitan Central Wholesale Market

#### Estimation of total frozen domestic-caught SBT distributed from Tokyo Metropolitan Central Wholesale Market

Tokyo Metropolitan	2006		2007		2008		Notes and methodology
	Case 1	Case 2	Case 1	Case 2	Case 1	Case 2	
1. Total in-market frozen SBT (MW)	6722		4543		3974		From Tokyo Metropolitan Central Wholesale Market website
2. In-market frozen farmed SBT (MW)	436		294		257		JMR: proportion in-market frozen farmed was 6.48% of 1. in 2005
3. Double count (MW)	450	121	304	82	266	72	JMR: proportion double-counted SBT was 6.7% (Case 1) and 1.8% (Case 2) of 1. in 2005
4. In-market frozen wild imported SBT (MW) (1.– 2.– 3.)×0.05	292	308	197	208	172	182	JMR adopted 5% for recent years (JMR p 4, 98, 100)
5. Tokyo fresh domestic SBT (MW)	15.537	15.537	0	0	0.127	0.127	From Tokyo Metropolitan Central Wholesale Market website
6. In-market domestic wild frozen SBT (MW) 1.– 2.– 3.– 4.– 5.	5529	5842	3747	3958	3277	3462	
7. Off-market domestic wild SBT (MW) (6./0.85)×0.15	976	1031	661	699	578	611	JMR adopted 15% as proportion of 6. distributed off-market
8. Total domestic wild SBT distributed in Japan (MW) 6.+7.	6505	6873	4408	4657	3856	4073	

MW: market weight, t

## Yaizu Fish Market

## Estimation of total frozen domestic-caught SBT distributed from Yaizu Fish Market

Yaizu	2006		2007		2008		Notes and methodology
1. Total in-market frozen SBT (MW)	756		575		613		From Yaizu Fish Market website JMR: proportion in-market frozen farmed is 0% of 1.
2. In-market frozen farmed SBT (MW)	0	0	0	0	0	0	
	Case 1	Case 2	Case 1	Case 2	Case 1	Case 2	
3. Double count (MW)	488	129	371	98	395	104	JMR: proportion double-counted SBT was 64.5% (Case 1) and 17% (Case 2) of 1. in 2005
4. In-market frozen wild imported SBT (MW) (1.- 2.- 3.)×0.05	13	31	10	24	11	25	JMR adopted 5% for recent years (JMR p 4, 98, 100)
5. In-market domestic wild frozen SBT (MW) 1.- 2.- 3.- 4.- 5.	255	596	194	453	207	483	
6. Off-market domestic wild SBT (MW) (5./0.85)×0.15	45	105	34	80	36	85	JMR adopted 15% as proportion of 5. distributed off-market
	Case 1	Case 2	Case 1	Case 2	Case 1	Case 2	
8. Total domestic wild SBT distributed in Japan (MW) 5.+6.	300	701	228	533	243	569	

MW: market weight, t

## Sum of total Japanese domestic wild frozen SBT

Tokyo Metropolitan and Yaizu fish markets

Sum of Japanese domestic wild frozen SBT sold through Tokyo and Yaizu fish markets, scaled up to represent 100% of frozen wild SBT sales through the 14 markets included in the JMR assuming Tokyo and Yaizu markets represented 78.96% of market sales in 2006–08

Double counting Case 1	Sum of domestic wild frozen SBT for 2 markets (MW t)	Sum of domestic wild frozen SBT to represent 14 markets in JMR (MW t)
2006	6804.6	8618
2007	4636.2	5871
2008	4098.9	5191

MW: market weight, t

Double counting Case 2	Sum of domestic wild frozen SBT for 2 markets (MW t)	Sum of domestic wild frozen SBT to represent 14 markets in JMR (MW t)
2006	7574.1	9592
2007	5190.2	6573
2008	4642.0	5879

MW: market weight, t

### Sum of domestic wild frozen SBT (WW t) and domestic exported frozen SBT (WW t)

Double counting Case 1	2006	2007	2008
1. Sum domestic wild frozen SBT to represent 14 markets in JMR, converted to WW t (MW:WW=1:1.15)	9910	6752	5970
2. Domestic exported frozen SBT converted to WW (exports MW×1.15)	78.0	29.9	0.2
3. Total domestic caught SBT distributed in Japan and exported (WW)			
<b>1.+2.</b>	9988	6782	5970

MW: market weight, t; WW: whole-weight equivalent, t

Double counting Case 2	2006	2007	2008
1. Sum domestic wild frozen SBT to represent 14 markets in JMR, converted to WW t (MW:WW=1:1.15)	11031	7559	6761
2. Domestic exported frozen SBT converted to WW (exports MW×1.15)	78.0	29.9	0.2
3. Total domestic caught SBT distributed in Japan and exported (WW)			
<b>1.+2.</b>	11109	7589	6761

MW: market weight, t; WW: whole-weight equivalent, t

## Appendix 2. Redistributing domestic estimates to catch year using market-lag formula

Total domestic caught SBT distributed in Japan and exported

Case 1 (double counting 11%)

Market Year <i>i</i>	WW t
2006	9988.3
2007	6782.1
2008	5969.9

Case 2 (double counting 4%)

Market Year <i>i</i>	WW t
2006	11108.9
2007	7589.0
2008	6760.8

Estimate of total Japanese domestic longline catch by catch year

Case 1 (double counting 11%)

Year of catch	SUM WW t
2006	6949.6
2007	5608.9
2008	417.9

Case 2 (double counting 4%)

Year of catch	SUM WW t
2006	7777.4
2007	6345.6
2008	473.3

Redistributed to year of catch using CCSBT-ESC/0809/40 market-lag formula

SBT Distributed (sold) Market Year (*i*) = 7% caught in Year (*i*-2) + 86% caught in Year (*i*-1) + 7% caught in Year (*i*)

Market Year <i>i</i> -2	Year of catch	Market Year <i>i</i> -1	Year of catch	Market Year <i>i</i>	Year of catch	SUM WW t
699.2	2004	8589.9	2005	699.2 <sup>c</sup>	2006	6949.6
474.7	2005	5832.6 <sup>b</sup>	2006	474.7	2007	5608.9
417.9 <sup>a</sup>	2006	5134.1	2007	417.9	2008	417.9

<sup>a</sup>417.9 = ~6% of 6949.6 (2006 year of catch SUM); <sup>b</sup>5832.6 = ~84% of 6949.6; <sup>c</sup>699.2 = ~10% of 6949.6

Market Year <i>i</i> -2	Year of catch	Market Year <i>i</i> -1	Year of catch	Market Year <i>i</i>	Year of catch	SUM WW t
777.6	2004	9553.7	2005	777.6 <sup>c</sup>	2006	7777.4
531.2	2005	6526.5 <sup>b</sup>	2006	531.2	2007	6345.6
473.3 <sup>a</sup>	2006	5814.3	2007	473.3	2008	473.3

<sup>a</sup>473.3 = ~6% of 7777.4 (2006 year of catch SUM); <sup>b</sup>6526.5 = ~84% of 7777.4; <sup>c</sup>777.6 = ~10% of 7777.4

Estimate of total Japanese domestic longline catch

by catch year + projected estimates for Market Year *i*-2 (2007) and Year *i*-1 and *i*-2 (2008)

Case 1 (double counting 11%) Notes and methodology

Catch Year	WW t
2006	6950
2007	5967 Market Year <i>i</i> + <i>i</i> -1 + projected <i>i</i> -2 {[SUM <i>i</i> +( <i>i</i> -1)]/0.94×0.06}
2008	4179 Market Year <i>i</i> + projected <i>i</i> -1 [ <i>i</i> /0.10×0.84] + projected <i>i</i> -2 [ <i>i</i> /0.10×0.06]

Case 2 (double counting 4%) Notes and methodology

Catch Year	WW t
2006	7777
2007	6751 Market Year <i>i</i> + <i>i</i> -1 + projected <i>i</i> -2 {[SUM <i>i</i> +( <i>i</i> -1)]/0.94×0.06}
2008	4733 Market Year <i>i</i> + projected <i>i</i> -1 [ <i>i</i> /0.10×0.84] + projected <i>i</i> -2 [ <i>i</i> /0.10×0.06]

## Appendix 5. Other market data and web resources

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### Availability of market data

Data from the following eight markets from the JMR were available in 2009:

- Tokyo Metropolitan Central Wholesale Market (incorporating Tsukiji, Adachi and Ohta)
- Yaizu Fish Market
- Osaka Prefecture Central Wholesale Market
- Sapporo Central Wholesale Market
- Kawasaki Central Wholesale Market (NB: data were only available up to and including 2006)
- Hiroshima and Nara markets (NB: in the JMR, data from Hiroshima and Nara were summed with 3 other markets, Saitama, Kobe, Funabashi)
- Okayama Market (NB: Okayama was not included in the JMR)

No data were available for the following markets included in the JMR:

- Osaka City: data on bluefin tuna not identified to species (NBT or SBT)
- Nagoya: no recent weight data available (2006–08)
- Yokohama: data on bluefin tuna not identified to species (NBT or SBT), data only available for 2006
- Misaki: data on bluefin tuna not identified to species (NBT or SBT)
- Saitama: no data available on individual seafood commodities
- Kobe: no data available on individual seafood commodities
- Funabashi: data on bluefin tuna not identified to species (NBT or SBT); time period of statistics not given

## Web resources

- Tokyo Metropolitan Central Wholesale Market statistics: [www.shijou-tokei.metro.tokyo.jp/asp/rmenu.aspx?mode=2](http://www.shijou-tokei.metro.tokyo.jp/asp/rmenu.aspx?mode=2)
- Yaizu Fish Market statistics: [www.yaizu-gyokyo.or.jp/iti\\_mizuagedaka.asp](http://www.yaizu-gyokyo.or.jp/iti_mizuagedaka.asp)
- Kawasaki Central Wholesale Market statistics: [www.city.kawasaki.jp/28/28sizyo/home/gyoumu/09sijyoutorihiki.html](http://www.city.kawasaki.jp/28/28sizyo/home/gyoumu/09sijyoutorihiki.html)
- Osaka Prefectural Central Wholesale Market statistics: [www.pref.osaka.jp/fuichiba/sikyo/sikyo.html#02](http://www.pref.osaka.jp/fuichiba/sikyo/sikyo.html#02)
- Sapporo Central Wholesale Market statistics: [www.sapporo-market.gr.jp/market/suisan/index.htm](http://www.sapporo-market.gr.jp/market/suisan/index.htm)
- Hiroshima market statistics: [www.hiroshima-shijou.jp/geppo2/20nen/geppo2012.htm](http://www.hiroshima-shijou.jp/geppo2/20nen/geppo2012.htm)
- Nara market statistics: [www.pref.nara.jp/dd\\_aspx\\_menuid-9435.htm#itemid14791](http://www.pref.nara.jp/dd_aspx_menuid-9435.htm#itemid14791)
- Okayama market statistics: [www.city.okayama.jp/ichiba/Statisti/Monthly/index.htm](http://www.city.okayama.jp/ichiba/Statisti/Monthly/index.htm), [www.city.okayama.jp/ichiba/Statisti/Annual/index.htm](http://www.city.okayama.jp/ichiba/Statisti/Annual/index.htm)
- Japan Customs import statistics (commodity code 0303.46.000): [www.customs.go.jp/toukei/info/index\\_e.htm](http://www.customs.go.jp/toukei/info/index_e.htm)



## Additional market data

Total in-market frozen SBT per market year: other markets (MW t)

<b>Market</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Notes</b>
Kawasaki	430	428	428	2007–08: average of 2005 and 2006
Osaka Prefecture	60	<u>61</u>	<u>38</u>	ratio of 2008 fresh to frozen applied to estimate <u>2006</u> and <u>2007</u>
Sapporo	23	25	60	
Hiroshima	4	3	5	2004: average of 2007 and 2008
Nara	6	3	7	2008: average of 2005 to 2007

MW t: market weight, t

Total in-market fresh SBT per market year (MW t)

<b>Market</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Notes</b>
Tokyo Metropolitan	487	454	410	
Kawasaki	48	57	57	2007–08: average of 2005 and 2006
Osaka Prefecture	39	40	25	
Sapporo	28	41	69	
Okayama	4	0	0	

MW t: market weight, t