4 QS Transfers and QS Prices

Permanent transferability of QS is an important part of the IFQ program. Transfers allow QS to move to persons who feel that they can use it more profitably and allow for consolidations of QS holdings and fishing operations. This chapter looks at the extent of permanent transfers and the prices paid for QS in permanent transactions during the first four years of the program.

Section 4.1 presents data on the volume and rate of permanent QS transfers, and on the number and percentage of persons who transferred QS, by management area from 1995 through 1998.

Section 4.2 presents similar data on QS transfer rates and on QS holder transfer rates, by management area *and* vessel category from 1995 through 1998.

Section 4.3 presents estimates of average prices for permanent QS transfers broken out by management area, vessel category, and year.

Section 4.4 presents 1995-1998 QS price estimates based upon a statistical model. Average prices for many management area, vessel category, and year combinations cannot be presented because of a lack of data. The use of a statistical model permits very detailed breakouts of prices. In this section price estimates are provided by management area, vessel category, block status, size of block, and quarter.

4.1 Transfer Rates by Area

Table 4-1 has data on QS transfer rates and on QS holder transfer rates. Data are provided for each management area and year from 1995 through 1998, and for all four years together. The table contains information on the QS holdings at the end each year, the total QS permanently transferred, the QS transfer rate, the total number of QS holders at the end of the year, the total number of QS holders who transferred QS (transferors), and the rate at which QS holders transferred QS. The QS transfer rates are the ratios of QS transferred to QS held at the end of the year, expressed in percentage form. The QS holder transfer rate is the ratio of QS transferors to total QS holders at the end of the year, expressed as a percentage.

Table 4-1 shows a substantial volume of permanent QS transfers. Over all four years combined, the QS transfer rates range from a low of 6.3% in the West Yakutat area, to a high of 9.4% in the Aleutians area. No single area appeared to consistently have the lowest or highest QS transfer rate during the different years.

The QS transfer rates for the four year period tended to be slightly lower than transfer rates for Alaska limited entry permits. Over the years 1975 to 1998, the ratio of the total number of limited entry permit transfers to the total number of transferable permit-years, interpreted here as the permit transfer rate, was 9%. Annual permit transfer rates during the period ranged from 7% to 13%.[23]

In five of the six management areas, the volume of QS transferred in 1998, and the QS transfer rate, both fell by large amounts. The Bering Sea area was the only area in which the volume and rate rose rather than fell.

Table 4-1 also reports on the QS holder transfer rates. These are the rates derived from the ratios of the number of persons transferring QS to the total number of persons holding QS at the end of the calendar year. Over the four years combined, these rates ranged from a low of 7.1% in the Bering Sea area to a high of 17.8% in the Southeast area.

In five of the management areas the number of QS transferors and the QS transferor rate dropped from 1997 to 1998. Some of these declines in QS transferors were large. In the Southeast, West Yakutat, and Central Gulf areas the number of transferors in 1998 was less than half the number in any previous year. The Aleutians area was the only area in which the number of QS transferors did not change. In this area decline in the total number of QS holders led to an increase in the QS holder transfer rate.

QS holder transfer rates tended to be higher than the QS transfer rates. In the Southeast, West Yakutat, Central Gulf and Western Gulf areas the "four-year" QS holder transfer rates are at least two times the "four-year" QS transfer rates. In the Bering Sea area the QS transfer rate was slightly higher, while in the Aleutian area the QS holder transfer rate was slightly higher.

[23]Iverson, Kurt, Al Tingley, and Elaine Dinneford. *Executive Summary. Changes in the Distribution of Alaska's Commercial Fisheries Entry Permits, 1975-1998.* Alaska Commercial Fisheries Entry Commission. CFEC 99-3N-EXEC. Juneau: July, 1999. Table 1, page 4. However, transfer rates of State of Alaska limited entry permits and sablefish QS units are not strictly comparable. Limited entry permits provide an all-or-nothing access to the fishery, and leasing is prohibited, except in emergency cases. Sablefish QS units may be leased and can be transferred in small amounts by persons who remain in the fishery.

Table 4-1. Sablefish QS Transfer Rates by Area and Year

Area	Year	Year-end Total QS	QS Transferred	QS Transfer Rate %	Year-end Total QS Holders	QS Transferors	QS holder Transfer Rate %
Southeast	1995	65,352,762	5,897,820	9.0	656	141	21.5
	1996	65,829,475	5,784,397	8.8	608	120	19.7
	1997	65,938,762	5,115,313	7.8	553	105	19.0
	1998	65,967,848	3,403,226	5.2	525	52	9.9
	All Yrs	263,088,847	20,200,756	7.7	2,342	418	17.8
W. Yakutat	1995	52,597,269	3,278,470	6.2	420	69	16.4
	1996	53,028,226	3,851,410	7.3	392	75	19.1
	1997	53,116,620	4,143,981	7.8	350	83	23.7
	1998	53,207,225	2,113,715	4.0	341	30	8.8
	All Yrs	211,949,340	13,387,576	6.3	1,503	257	17.1
C. Gulf	1995	107,635,310	7,833,476	7.3	592	98	16.6
	1996	109,997,846	9,401,578	8.5	553	95	17.2
	1997	110,873,858	11,371,524	10.3	496	116	23.4
	1998	111,032,423	4,623,131	4.2	479	39	8.1
	All Yrs	439,539,437	33,229,709	7.6	2,120	348	16.4
W. Gulf	1995	35,196,842	1,908,499	5.4	217	27	12.4
	1996	35,793,302	3,493,549	9.8	211	22	10.4
	1997	35,935,239	2,537,045	7.1	197	44	22.3
	1998	35,951,012	2,046,738	5.7	187	25	13.4
	All Yrs	142,876,395	9,985,831	7.0	812	118	14.5
Bering Sea	1995	17,598,802	1,003,527	5.7	138	13	9.4
	1996	18,421,029	1,526,743	8.3	135	8	5.9
	1997	18,602,398	1,266,994	6.8	131	10	7.6
	1998	18,587,476	2,347,047	12.6	128	7	5.5
	All Yrs	73,209,705	6,144,311	8.4	532	38	7.1
Aleutians	1995	29,863,329	2,143,624	7.2	125	14	11.2
	1996	31,103,860	2,062,710	6.6	130	9	6.9
	1997	31,518,176	4,917,176	15.6	124	17	13.7
	1998	31,518,176	2,526,775	8.0	119	17	14.3
	All Yrs	124,003,541	11,650,285	9.4	498	57	11.4

4.2 Transfer Rates by Area and Vessel Category

The annual QS and QS holder transfer rates for each area and vessel category are shown in Table 4-2. Data are provided for each year from 1995 through 1998, and for all four years together. The information shown in this table is similar to what was presented in Table 4-1; however, the observations are more detailed management area *and* vessel category breakouts, as opposed to the management area summaries presented in Table 4-1.

Table 4-2 contains information on the QS holdings at the end of the year, the total QS permanently transferred, the QS transfer rate, the total number of QS holders at the end of the year, the total number of QS holders who transferred QS (transferors), and the rate at which QS holders transferred QS. The QS transfer rates are the ratios of QS transferred to total QS held at the end of the year, expressed in percentage form. The QS holder transfer rate is the ratio of QS transferors to total QS holders at the end of the year, expressed as a percentage.

QS transfer rates often diverge widely among vessel categories within an area. For example, over the four year period the average QS transfer rate for catcher vessels "greater than 60 feet" in the Aleutians Islands area was only 7.0%, while the rate for catcher vessels "60 feet or less" was 23.1%. Similarly, in the Bering Sea area, the QS transfer rate for catcher vessels "greater than 60 feet" was 2.7% while the rate for freezer vessels was 13.0%. QS holder transfer rates also showed large differences between vessel categories.

In all but the Bering Sea area the "less than or equal to 60 foot" catcher vessel categories had the highest "four year" QS transfer rates.

Table 4-2. Sablefish QS Transfer Rates by Area, Vessel Class, and Year

Area	Year	Vessel Class	Year-end Total QS	QS Transferred	QS Transfer Rate %	Year-end Total QS holders	QS Transferors	QS Holder Transfer Rate %
Southeast	1995	Freezer	6,070,255	270,348	4.5	44	6	13.6
		GT 60 ft.	13,542,232	1,017,460	7.5	117	18	15.4
		LE 60 ft.	45,740,275	4,610,012	10.1	500	118	23.6
	1996	Freezer	5,985,260	600,437	10.0	41	9	22.0
		GT 60 ft.	13,485,766	1,665,863	12.4	110	20	18.2
		LE 60 ft.	46,358,449	3,518,097	7.6	463	91	19.7
	1997	Freezer	6,041,780	325,355	5.4	38	9	23.7
		GT 60 ft.	13,460,403	661,090	4.9	104	14	13.5
		LE 60 ft.	46,436,579	4,128,868	8.9	422	87	20.6
	1998	Freezer	6,070,866	244,737	4.0	40	3	7.5
		GT 60 ft.	13,460,403	381,551	2.8	102	7	6.9
		LE 60 ft.	46,436,579	2,776,938	6.0	397	42	10.6
	All Yrs	Freezer	24,168,161	1,440,877	6.0	163	27	16.6
		GT 60 ft.	53,948,804	3,725,964	6.9	433	59	13.6
		LE 60 ft.	184,971,882	15,033,915	8.1	1,782	338	19.0
W. Yakutat	1995	Freezer	4,266,270	198,867	4.7	33	4	12.1
		GT 60 ft.	32,059,405	1,509,862	4.7	123	16	13.0
		LE 60 ft.	16,271,594	1,569,741	9.6	268	49	18.3
	1996	Freezer	4,279,728	484,520	11.3	32	6	18.8
		GT 60 ft.	32,170,690	1,546,931	4.8	127	19	15.0
		LE 60 ft.	16,577,808	1,819,959	11.0	244	51	20.9
	1997	Freezer	4,326,056	332,112	7.7	32	7	21.9
		GT 60 ft.	32,192,683	2,083,535	6.5	119	28	23.5
		LE 60 ft.	16,597,881	1,728,334	10.4	211	54	25.6
	1998	Freezer	4,349,897	92,123	2.1	32	4	12.5
		GT 60 ft.	32,261,525	1,389,662	4.3	119	13	10.9
		LE 60 ft.	16,595,803	631,930	3.8	203	15	7.4
	All Yrs	Freezer	17,221,951	1,107,622	6.4	129	21	16.3
		GT 60 ft.	128,684,303	6,529,990	5.1	488	76	15.6
		LE 60 ft.	66,043,086	5,749,964	8.7	926	169	18.3
C. Gulf	1995	Freezer	15,067,735	563,533	3.7	41	4	9.8
		GT 60 ft.	52,735,414	2,888,961	5.5	179	25	14.0
		LE 60 ft.	39,832,161	4,380,982	11.0	379	70	18.5
	1996	Freezer	16,129,641	1,357,590	8.4	42	6	14.3
		GT 60 ft.	52,874,736	3,716,581	7.0	176	28	15.9
		LE 60 ft.	40,993,469	4,327,407	10.6	350	61	17.4
	1997	Freezer	16,922,204	1,715,121	10.1	37	9	24.3
		GT 60 ft.	52,921,573	5,425,820	10.3	172	41	23.8
		LE 60 ft.	41,030,081	4,230,583	10.3	310	73	23.5
	1998	Freezer	16,969,807	234,434	1.4	37	3	8.1
		GT 60 ft.	53,025,668	1,228,754	2.3	171	12	7.0
		LE 60 ft.	41,036,948	3,159,943	7.7	300	26	8.7
	All Yrs	Freezer	65,089,387	3,870,678	5.9	157	22	14.0
		GT 60 ft.	211,557,391	13,260,116	6.3	698	106	15.2
		LE 60 ft.	162,892,659	16,098,915	9.9	1,339	230	17.2

(Continued)

Table 4-2. Sablefish QS Transfer Rates by Area, Vessel Class, and Year

Area	Year	Vessel Class	Year-end Total QS	QS Transferred	QS Transfer Rate %	Year-end Total QS Holders	QS Transferors	QS Holder Transfer Rate %
W. Gulf	1995	Freezer	13,398,039	44,223	0.3	29	3	10.3
		GT 60 ft.	15,330,271	333,425	2.2	98	8	8.2
		LE 60 ft.	6,468,532	1,530,851	23.7	93	16	17.2
	1996	Freezer	13,469,942	1,918,954	14.2	31	4	12.9
		GT 60 ft.	15,545,162	727,606	4.7	96	8	8.3
		LE 60 ft.	6,778,198	846,989	12.5	89	10	11.2
	1997	Freezer	13,578,407	125,774	0.9	30	6	20.0
		GT 60 ft.	15,590,669	1,052,556	6.8	93	23	24.7
		LE 60 ft.	6,766,163	1,358,715	20.1	84	18	21.4
	1998	Freezer	13,594,180	97,620	0.7	30	1	3.3
		GT 60 ft.	15,591,876	1,362,289	8.7	91	14	15.4
		LE 60 ft.	6,764,956	586,829	8.7	78	12	15.4
	All Yrs	Freezer	54,040,568	2,186,571	4.0	120	14	11.7
		GT 60 ft.	62,057,978	3,475,876	5.6	378	53	14.0
		LE 60 ft.	26,777,849	4,323,384	16.1	344	56	16.3
Bering Sea	1995	Freezer	6,654,211	237,952	3.6	23	4	17.4
		GT 60 ft.	7,773,286	235,905	3.0	61	3	4.9
		LE 60 ft.	3,171,305	529,670	16.7	55	6	10.9
	1996	Freezer	7,107,489	779,205	11.0	26	2	7.7
		GT 60 ft.	7,773,286	295,952	3.8	59	2	3.4
		LE 60 ft.	3,540,254	451,586	12.8	52	4	7.7
	1997	Freezer	7,288,858	360,448	4.9	26	2	7.7
		GT 60 ft.	7,773,286	258,139	3.3	57	4	7.0
		LE 60 ft.	3,540,254	648,407	18.3	51	4	7.8
	1998	Freezer	7,288,858	2,294,040	31.5	25	5	20.0
		GT 60 ft.	7,758,364	53,007	0.7	55	2	3.6
		LE 60 ft.	3,540,254	0	0.0	51	0	0.0
	All Yrs	Freezer	28,339,416	3,671,645	13.0	100	13	13.0
		GT 60 ft.	31,078,222	843,003	2.7	232	11	4.7
		LE 60 ft.	13,792,067	1,629,663	11.8	209	14	6.7
Aleutians	1995	Freezer	16,374,036	695,809	4.2	28	3	10.7
		GT 60 ft.	11,086,468	550,180	5.0	58	6	10.3
		LE 60 ft.	2,402,825	897,635	37.4	41	5	12.2
	1996	Freezer	17,123,651	1,213,703	7.1	30	3	10.0
		GT 60 ft.	11,319,633	352,931	3.1	60	3	5.0
		LE 60 ft.	2,660,576	496,076	18.6	42	3	7.1
	1997	Freezer	17,537,967	3,560,809	20.3	29	6	20.7
		GT 60 ft.	11,319,633	743,433	6.6	59	5	8.5
		LE 60 ft.	2,660,576	612,934	23.0	41	6	14.6
	1998	Freezer	17,537,967	633,790	3.6	29	3	10.3
		GT 60 ft.	11,319,633	1,501,959	13.3	56	9	16.1
		LE 60 ft.	2,660,576	391,026	14.7	40	5	12.5
	All Yrs	Freezer	68,573,621	6,104,111	8.9	116	15	12.9
		GT 60 ft.	45,045,367	3,148,503	7.0	233	23	9.9
		LE 60 ft.	10,384,553	2,397,671	23.1	164	19	11.6

4.3 QS Sales Prices

This section covers QS transfers for which price information is available. Data on 1995 through 1998 transfers are used to provide estimates of average prices per unit of sablefish QS.

Table 4-3 shows estimated average annual prices per QS unit by area for 1995 through 1998. QS may be transferred without all of the associated current-year IFQs. The prices shown in this table were calculated from transfers in which the actual current-year IFQ was transferred with the QS and was within 5% of the standard IFQ per unit of QS for that year and management area.[24] Mean and standard deviations for the price per QS unit are provided in dollars per pound of IFQ and in dollars per QS unit. The pounds of IFQ, the amount of QS, and the number of transfers used to produce the estimates are also shown.

The QS prices for the Bering Sea and Aleutian Islands were generally based on only a few transactions. In the other four management areas, the estimated average price of QS, in dollars per QS unit, ranged from a low of $0.57 for the Western Gulf area QS in 1996 to a high of $1.31 for Southeast area QS in 1997. However, QS prices in dollars per QS unit are not comparable across areas since the ratio of IFQ to QS differs from area to area and from year to year as TACs change.

QS prices in dollars per pound of associated IFQ are more comparable across areas. In the four areas in which prices are based on a relatively large number of transactions, the prices ranged from a low of $5.53 in the Western Gulf area in 1996 to a high of $11.11 in the Southeast area in 1998. The estimated average prices in dollars per pound of IFQ rose in each year in the Southeast, West Yakutat, and Central Gulf areas. The estimated prices did not show systematic changes in the Western Gulf area.

Table 4-4 provides a more detailed breakout of QS price estimates by management area *and* vessel category (as opposed to the management area analysis in Table 4-3). The price analysis data shown are the same as in Table 4-3.

In many of the area and vessel category combinations there are so few transactions that confidentiality standards do not permit reporting the price data. In some of the cases where estimated prices are reported, they are based on small numbers of transactions. In the Southeast, West Yakutat and Central Gulf areas, the price of QS tended to go up over the 1995 through 1998 time period, repeating the pattern observed in the more aggregated data summarized in Table 4-3.

Table 4-5 provides associated annual QS price information for transfers in which QS was sold without any of the current year IFQ. To avoid confusion, prices are provided only in dollars per QS unit. There are fewer of these types of observations than there are of

[24]Standard IFQs were calculated by multiplying the amount of QS by the ratio of the area's total allowable catch to the amount of QS in the area's QS pool on January 31st of the year. This ratio was supplied by NMFS-RAM.

transfers of QS with all or most IFQs. Prices are only available from three management areas. Note that, as before, prices in dollars per QS unit are not comparable across management areas due to the differences in the amount of IFQs per QS across areas. The available estimates of average prices range from a low of $0.49 per QS unit in the West Yakutat area in 1998 to a high of $1.58 per QS unit in the Southeast area in 1998.

In all of these tables there are several caveats associated with the reported statistics. The information provided on the NMFS transfer application forms can be ambiguous. The form does not explicitly differentiate between sale transfers and other transfers. Sale transfer observations used in the tables in this section were selected because prices were supplied. Other sale transfer observations, for which no prices were supplied, could not be used to make the estimate.

The transfer application forms from which pricing data were gathered also differed somewhat between years. For example, the 1995 form requested prices net of brokers' fees, while the 1996 to 1998 forms requested prices including fees.

The associated current year IFQ is important in determining QS prices, but the ratio of IFQ to QS can vary between holdings within a management area due to underages and overages from the preceding year. In addition, only a portion of the associated current year IFQ might have been transferred with the QS. This makes it harder to calculate a meaningful average price per QS unit within a management area. This difficulty has been dealt with herein by calculating QS prices for QS sold with "approximately" the associated current year IFQ and for QS sold with no current year IFQ.

Table 4-3. Annual Prices for Sablefish QS and IFQ Transfers by Area and Year

Area	Year	Mean Price $/IFQ	Stan Dev Price $/IFQ	Tot IFQs Transacted Used for Pricing	Mean Price $/QS	Stan Dev Price $/QS	Tot QS Transacted Used for Pricing	Number of Transactions Used for Pricing
Southeast	95	6.73	0.95	714,993	1.28	0.18	3,771,994	102
	96	8.05	1.61	460,777	1.21	0.24	3,067,913	86
	97	10.76	2.02	303,609	1.31	0.25	2,496,791	72
	98	11.11	1.96	102,892	1.29	0.23	886,458	31
W. Yakutat	95	5.93	0.87	208,230	0.92	0.13	1,339,123	33
	96	7.62	1.23	240,912	0.88	0.14	2,090,726	51
	97	9.04	2.11	182,257	0.85	0.20	1,928,688	58
	98	9.23	2.66	22,538	0.83	0.24	250,157	17
C. Gulf	95	6.02	0.92	542,427	0.82	0.12	3,979,925	53
	96	7.06	1.59	576,517	0.77	0.17	5,312,742	70
	97	9.36	1.73	707,533	0.95	0.18	6,950,682	82
	98	10.68	2.42	218,048	1.07	0.24	2,176,369	39
W. Gulf	95	6.16	0.85	129,351	0.76	0.10	1,052,708	12
	96	5.53	0.82	265,044	0.57	0.08	2,566,140	11
	97	7.06	1.45	113,032	0.64	0.13	1,237,647	30
	98	8.00	0.81	77,939	0.72	0.07	864,090	19
Bering Sea	95	4.87	0.58	11,951	0.42	0.05	138,800	4
	96	6.63	5.18	41,493	0.36	0.28	757,451	5
	97	3.29	0.35	32,695	0.17	0.02	626,938	5
	98	C	C	7,409	C	C	120,235	3
Aleutians	95	4.57	0.52	91,553	0.43	0.05	979,271	6
	96	8.89	3.90	72,881	0.45	0.20	1,446,140	4
	97	4.14	0.50	66,726	0.21	0.03	1,324,979	10
	98	3.40	0.59	38,599	0.20	0.03	667,559	8

C indicates confidential data

Table 4-4. Annual Prices for Sablefish QS and IFQ Transfers by Area, Vessel Class, and Year

Area	Vessel Class	Year	Mean Price $/IFQ	Stan Dev Price $/IFQ	Tot IFQs Transacted Used for Pricing	Mean Price $/QS	Stan Dev Price $/QS	Tot QS Transacted Used for Pricing	Number of Transactions Used for Pricing
Southeast	Freezer	95	C	C	18,199	C	C	96,143	3
		96	6.67	3.50	44,588	1.00	0.53	296,723	6
		97	12.21	0.53	16,790	1.49	0.06	137,700	5
		98	C	C	10,668	C	C	91,512	1
	GT 60 ft.	95	7.61	1.48	107,571	1.44	0.28	567,493	10
		96	7.88	0.74	143,251	1.18	0.11	953,279	18
		97	9.43	0.71	9,109	1.15	0.09	74,713	8
		98	9.58	2.13	5,941	1.12	0.25	50,958	4
	LE 60 ft.	95	6.58	0.72	589,223	1.25	0.14	3,108,358	89
		96	8.37	1.29	272,938	1.26	0.19	1,817,911	62
		97	10.72	2.06	277,710	1.30	0.25	2,284,378	59
		98	10.85	1.72	86,283	1.26	0.20	743,988	26
W. Yakutat	Freezer	95	C	C	749	C	C	4,818	1
		96	C	C	8,065	C	C	69,990	3
		97	C	C	11	C	C	117	2
		98	C	C	11	C	C	117	2
	GT 60 ft.	95	5.55	0.94	98,310	0.86	0.15	632,236	6
		96	7.33	0.49	125,937	0.84	0.06	1,092,938	15
		97	9.53	0.90	57,474	0.90	0.08	607,358	14
		98	9.41	0.83	7,884	0.85	0.07	87,499	7
	LE 60 ft.	95	6.28	0.60	109,171	0.98	0.09	702,069	26
		96	8.09	1.57	106,910	0.93	0.18	927,798	33
		97	8.81	2.45	124,772	0.83	0.23	1,321,213	42
		98	9.13	3.24	14,643	0.82	0.29	162,541	8
C. Gulf	Freezer	95	C	C	11,120	C	C	81,280	2
		96	5.46	0.43	95,938	0.59	0.05	884,143	5
		97	10.85	2.43	110,229	1.11	0.25	1,080,256	6
		98	C	C	618	C	C	6,146	3
	GT 60 ft.	95	5.58	0.89	186,341	0.76	0.11	1,377,323	9
		96	7.40	1.51	208,798	0.80	0.16	1,923,984	25
		97	9.64	1.36	338,128	0.98	0.14	3,330,487	25
		98	10.53	1.50	47,019	1.05	0.15	472,973	14
	LE 60 ft.	95	6.32	0.76	344,966	0.86	0.10	2,521,322	42
		96	7.36	1.57	271,781	0.80	0.17	2,504,615	40
		97	8.36	1.08	259,176	0.85	0.11	2,539,939	51
		98	10.71	2.61	170,411	1.07	0.26	1,697,250	22
W. Gulf	Freezer	95	C	C	2,261	C	C	18,403	1
		96	C	C	194,422	C	C	1,882,372	3
		97	6.10	1.78	11,480	0.56	0.16	125,697	6
	GT 60 ft.	95	C	C	20,781	C	C	169,123	3
		96	C	C	38,380	C	C	371,598	3
		97	7.45	1.51	61,434	0.68	0.14	672,668	17
		98	8.31	0.71	49,696	0.75	0.06	551,716	11
	LE 60 ft.	95	6.33	0.73	106,309	0.78	0.09	865,182	8
		96	4.50	1.55	32,242	0.46	0.16	312,170	5
		97	6.74	0.96	40,118	0.62	0.09	439,282	7
		98	7.45	0.67	28,243	0.67	0.06	312,374	8

(Continued)

Table 4-4. Annual Prices for Sablefish QS and IFQ Transfers by Area, Vessel Class, and Year

Area	Vessel Class	Year	Mean Price $/IFQ	Stan Dev Price $/IFQ	Tot IFQs Transacted Used for Pricing	Mean Price $/QS	Stan Dev Price $/QS	Tot QS Transacted Used for Pricing	Num of Transactions Used for Pricing
Bering Sea	Freezer	95	C	C	2,312	C	C	26,852	1
		96	C	C	14,802	C	C	270,210	1
		98	C	C	7,370	C	C	119,600	2
	GT 60 ft.	96	C	C	2,218	C	C	40,484	1
		97	C	C	13,388	C	C	256,712	3
		98	C	C	39	C	C	635	1
	LE 60 ft.	95	C	C	9,639	C	C	111,948	3
		96	C	C	24,473	C	C	446,757	3
		97	C	C	19,307	C	C	370,226	2
Aleutians	Freezer	96	C	C	47,887	C	C	950,196	2
		98	C	C	3,662	C	C	63,327	1
	GT 60 ft.	95	4.21	0.45	50,285	0.39	0.04	537,859	4
		97	4.49	0.26	35,862	0.23	0.01	712,111	4
		98	C	C	18,060	C	C	312,346	3
	LE 60 ft.	95	C	C	41,268	C	C	441,412	2
		96	C	C	24,994	C	C	495,944	2
		97	3.74	0.40	30,864	0.19	0.02	612,868	6
		98	3.17	0.52	16,877	0.18	0.03	291,886	4

C indicates confidential data

Table 4-5. Annual Prices for Sablefish QS-Only Transfers by Area and Year

Area	Year	Mean Price $/QS	Stan Dev Price $/QS	Total QS Transferred Used for Pricing	Number of Transactions Used for Pricing
Southeast	95	1.22	0.44	155,297	6
	96	0.94	0.33	471,382	14
	97	1.56	0.20	494,104	18
	98	1.58	0.44	199,026	5
W. Yakutat	95	0.89	0.11	399,983	4
	96	0.68	0.10	256,110	7
	97	0.88	0.09	635,346	6
	98	0.49	0.31	750,524	5
C. Gulf	95	0.59	0.14	590,998	5
	96	0.71	0.04	824,136	9
	97	1.05	0.06	1,275,202	10
	98	C	C	22,266	3
W. Gulf	95	C	C	81,442	2
	96	C	C	36,520	2
	97	C	C	21,810	1
Bering Sea	95	C	C	106,583	1
	96	C	C	255,468	1
	98	C	C	11,041	1
Aleutians	95	C	C	594,509	1
	96	C	C	164,185	1

C indicates confidential data

4.4 Estimated QS Prices

Annual average QS prices by management area, vessel category, and year are reported in Table 4-4 of this chapter. However, the available data do not permit calculation and reporting of all the prices for all of the combinations of categories. For example, the price for freezer vessel QS in the West Yakutat area cannot be reported in any year. In some combinations of categories no report can be made because there were no transfers, and in others there were too few transfers to meet confidentiality reporting standards.

There would be even more gaps if prices were estimated by block status, block size, and quarter, as well as by management area, vessel class, and year, since there would be fewer observations in each combination of categories.

To provide a more detailed set of QS price estimates for the 1995-1998 period, a statistical model of QS prices was estimated using available data for the Southeast, West Yakutat, Central Gulf, and Western Gulf areas.[25] This model was then used to estimate prices for QS by management area (for the Southeast, West Yakutat, Central Gulf and Western Gulf areas), vessel class, block status, size of block, and quarter for 1995-1998. These price estimates are reported in Table 4-6. The estimates were confined to these four areas because there were not enough observations in the other areas (Bering Sea and Aleutians Islands) to develop a meaningful model.

The approach in this section is similar to methods used to estimate prices in earlier versions of CFEC reports on the halibut and sablefish IFQ programs.[26] In this year, the data set has changed with the addition of observations for 1998 and the set of variables has changed with the addition of four dummy variables for the four quarters of 1998. For these reasons, the price estimates in this report differ from those in the earlier report.

The dependent variable in the model used in this report was the price for QS expressed in dollars per unit of QS. The following explanatory variables were used in the model:

dummy variables for vessel class — Separate dummy variables were used for the two catcher vessels categories of "over 60 feet" and "less than or equal to 60 feet." These estimated coefficients show how average QS prices increased or decreased relative to freezer vessel QS prices when all other factors are the same.

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[25]The parameters of this model were estimated using OLS regression on 953 observations on individual transactions. The QS price in "dollars per unit of QS" was the dependent variable. The explanatory variables are described in a list starting on this page. The regression R-squared was 0.41. The coefficients had appropriate signs and the important coefficients were statistically significant. These results are summarized in detail in the CFEC report number 99-6N, *Regression Analysis of Alaska Halibut and Sablefish QS Prices, 1995-1998*, by Ben Muse.

[26]Dinneford, Elaine. Kurt Iverson, Ben Muse and Kurt Schelle. *Changes Under Alaska's Sablefish IFQ Program, 1995 to 1997.* Alaska Commercial Fisheries Entry Commission. Juneau: December, 1997. Chapter 4, section 4.

the natural log of the amount of blocked QS transferred	Prices were hypothesized to be higher for QS in larger blocks. This variable was assigned a value of zero for unblocked QS.
the natural log of the amount of unblocked QS transferred	Prices were also hypothesized to be larger for QS in larger unblocked transactions. This variable was assigned a value of zero for blocked QS.
a dummy variable indicating whether or not QS was blocked	QS in blocks were assumed to have lower prices, all other things equal. This dummy variable took on a value of one if the QS in the transaction was blocked, and a value of zero if it was not.
standard pounds of IFQ per QS unit	This is the ratio of pounds of IFQ per QS unit for the area and year. This is the inverse of the standard ratios published by RAM. This variable has the same value for all transactions in an area during a year.
ratio of "the difference between the standard pounds of IFQ and the actual number of pounds of IFQ transferred" to "QS units transferred"	The numerator of this ratio is the difference between the standard IFQ associated with the QS being transferred in the transaction, and the actual pounds of IFQ being transferred in the transaction. The denominator is the number of units of QS being transferred in the transaction.
separate dummy variables for the 2nd through the 16th quarters of the four-year time period	Dummy variables were introduced for each quarter except the first. These variables were intended to capture quarterly price changes due to changes in market conditions relative to the first quarter of 1995.

The simulation model produced price estimates in "dollars per QS unit." Since the amount of QS units per pound of IFQ differed from area to area, and from year to year, prices were converted to "dollars per pound of IFQ" for Table 4-6. This was done to permit comparisons of prices across management areas.

This conversion was done by multiplying the price in "dollars per QS unit" by the "QS units per pound of IFQ" in the relevant management area and year. These prices in "dollars per pound of IFQ" are reported in Table 4-6. The "QS units per pound of IFQ" ratios used to make these price conversions were based on the standard ratios for each management area published by NMFS-RAM. The ratio is calculated by dividing the total TAC in a management area by the QS pool for that management area on January 31 of the year.

The amount of QS contained and transferred in a block can vary widely. For simulation purposes, blocks were defined to be either large, medium, or small. Large blocks were defined to have 13,000 pounds of current-year IFQ, medium blocks were defined to have 6,000 pounds of current-year IFQ, and small blocks were defined to have 1,000 pounds of current-year IFQ. Unblocked transfers were assumed to have 11,500 pounds of IFQ. These size categories were chosen after an examination of the distribution of actual block size holdings at the end of 1996 and after a review of the size distribution of blocks transferred during 1995 and 1996.[27] The unblocked transfer sizes are approximately equal to the mean transfer size during 1995 and 1996. These block sizes, although constant in terms of pounds of IFQ, were associated with different units of QS in different areas and years since the QS to IFQ ratios varied between areas and between years within an area.

Comparing estimated prices (Table 4-6) and average prices (Table 4-4)

Average prices for management area, vessel category, and year from Table 4-4 were compared with estimates from the model. This comparison shows that for most of the areas, vessel classes, and years, the average price, as reported in the transfer surveys, falls within the range of estimated prices from the model. The exceptions occur in the Southeast area, where the average price falls outside the estimated price ranges in one of the eight comparisons that can be made, and in the Western Gulf area, where the average price falls outside the estimated price range for two of the seven comparisons that can be made.

While the comparison of average prices in Table 4-4 with somewhat similar price estimates from the model shown in Table 4-6 is interesting, the reader should be aware that there can be subtle differences in what these prices represent. The calculations behind the estimated prices in Table 4-6 are based on the assumption that all the associated IFQ pounds for the year have been sold with the QS. In contrast, the averages in Table 4-4 were generated from observations with "almost all" of the IFQs transferred with the QS. This means that the transferred IFQ was within 5% of the "standard IFQ" for that area and the number of QS in the transaction. Further, the average prices in Tables 4-3 and 4-4 are aggregates of prices for transactions in different quarters and for transactions of different block status or size. The prices in Table 4-6 are broken out for more detailed category combinations and for blocks or unblocked transfers of a given size.

Price Changes Through Time

Table 4-6 indicates that estimated QS prices, measured in dollars per pound of IFQ, tended to rise from quarter to quarter from the first quarter of 1995 through the first quarter of 1998. They tended to fall rapidly during the final three quarters of 1998.

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[27]These block sizes are left constant from one year to another in order to provide a constant standard of reference.

Despite the fall of prices in 1998, prices in the last quarter of 1998 remained above the levels of the first and last quarters of 1995, which were usually the lowest prices over the time period.

Blocking of QS

A feature which the NPFMC added to the sablefish IFQ program was the "blocking" of all initial allocations of QS that translated into less than 20,000 pounds of a hypothetical IFQ for an area.[28] Under the program rules, blocked sablefish QS must be sold as a unit. In addition, a person is only allowed to hold two blocks of QS in an area. If a person holds any unblocked QS in the area, then the person is only allowed to hold one block of QS. In 1995, and much of 1996, blocked QS often could not be leased because of the 10% leasing restriction. From September, 1996, regulations became effective allowing the leasing of IFQ independently of QS.[29]

The purpose of the blocking provision was to make a portion of the QS relatively unattractive to persons who wanted to put together more full-time sablefish operations. Proponents hoped the block provisions would ensure there would always be QS available to a part-time fleet of small operators. The proponents felt this would help maintain some of the diversity of the fleet that existed under open access and thereby make the IFQ program less disruptive to isolated Alaska fishing communities. Proponents also predicted that the blocked QS would sell for a lower price per QS unit and hence would be more affordable for a fleet of small part-time operators, as well as new entrants to the fishery.

The results suggest that blocked QS did sell for less than unblocked QS and that smaller blocks sold for less than larger blocks. Estimated prices were higher for larger blocks than for smaller ones, and higher for unblocked QS than for even large blocks of QS despite the fact that in the simulation model large blocks are assumed to have 13,000 QS and unblocked transactions are assumed to be for 11,500 QS.[30] For example, the estimated prices for unblocked West Yakutat "greater than 60 feet" catcher vessel QS in the first quarter of 1995 ranged from $3.99 for QS in small blocks, to $4.64 for QS in medium blocks, to $4.92 for QS in large blocks, to $5.56 for unblocked QS. Similar results occurred for all other area, vessel category, and quarter combinations.

The regression model used to generate these results had a statistically significant negative coefficient on the dummy variable indicating whether or not QS was blocked, and statistically significant positive coefficients on the variables for the size of the block (if

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[28]As noted earlier, the range of QS holdings were blocked if they were worth less than 20,000 pounds of IFQ, given the QS pool as of October 17, 1994 and the 1994 TAC for the area. See 50 CFR 679.40(a).

[29]*FR* 61(155): 41523-41526. August 9, 1996.

[30]These are prices per unit of QS, not prices paid for a block of QS or for a "package" of units of unblocked QS.

blocked) and the number of units of QS transferred (if unblocked). Thus the model indicated that both blocked and unblocked QS had a higher average price per QS unit the greater the amount of QS involved in the transaction.

Management Area

Estimated prices also tended to differ by management area. During 1995 and 1996, prices generally fell with a move from more easterly to more westerly management areas. Prices tended to be highest in Southeast, lower in West Yakutat, lower still in the Central Gulf, and lowest in the Western Gulf. For example, the estimated prices of small blocks of "less than or equal to 60 feet" catcher vessel quota share in the first quarter of 1995 were $5.35 in the Southeast area, $4.48 in the West Yakutat area, $3.82 in the Central Gulf area, and $3.21 in the Western Gulf area.

In general, however, differences in estimated prices between areas tended to become smaller or even to reverse in 1997 and 1998. The estimated prices for the same small blocks of "less than or equal to 60 feet" catcher vessel quota in the fourth quarter of 1997 were $9.51 in the Southeast area, $9.62 in the West Yakutat area, $9.58 in the Central Gulf area, and $9.64 in the Western Gulf area.

Perhaps the most important "area-specific" variable in the price estimator model was a variable for the number of "pounds of IFQ per unit of QS" in an area and in a year. This variable was constant for all transactions in an area during a year. The coefficient for this variable had a positive sign, indicating that when the pounds of IFQ per QS unit were increased, the average QS price also increased, especially when the price was measured in dollars per QS unit.

Vessel Classes

Vessel classes could affect the price of QS. Freezer and catcher vessels produce different products. Catcher vessels of different sizes could produce in different volumes for different markets. Catcher vessel size could also affect operating characteristics, including ability to operate in different weather conditions, fixed costs, variable material costs, and vessel, skipper, and crew shares. This large number of considerations could affect QS from different vessel classes in different ways making it difficult to predict how vessel class should affect QS prices.

Estimated QS prices were highest for the "less than or equal to 60 feet" catcher vessel QS in all of the management areas. The "freezer" vessel QS had the next highest average QS prices. The "greater than 60 feet" catcher vessel QS had the lowest QS prices. This relationship held for unblocked QS, and large, medium, and small blocks of QS.[31]

[31]However, the model relationships should be viewed with caution. The model did not allow variation in the estimated vessel class parameter coefficients across areas and some of the estimated parameters were not statistically significant.

Table 4-6. Estimated Prices Per Unit of Sablefish QS, Expressed in Dollars Per Pound of IFQ

Area	Vessel Category	Year	Quarter	Unblocked Price	Large Block Price	Medium Block Price	Small Block Price
Southeast	Freezer	95	1	6.35	5.80	5.57	5.03
			2	7.08	6.52	6.29	5.76
			3	6.84	6.29	6.06	5.52
			4	6.01	5.45	5.22	4.69
		96	1	7.91	7.27	6.98	6.30
			2	7.94	7.29	7.00	6.33
			3	8.21	7.56	7.27	6.60
			4	8.21	7.57	7.27	6.60
		97	1	8.71	7.97	7.62	6.78
			2	9.57	8.83	8.47	7.64
			3	11.46	10.72	10.36	9.53
			4	10.95	10.21	9.85	9.01
		98	1	11.72	10.96	10.59	9.71
			2	10.05	9.29	8.91	8.04
			3	8.46	7.70	7.32	6.45
			4	7.60	6.84	6.47	5.60
	GT 60 feet	95	1	6.27	5.72	5.49	4.95
			2	7.00	6.44	6.21	5.68
			3	6.76	6.21	5.98	5.44
			4	5.93	5.37	5.14	4.61
		96	1	7.81	7.16	6.87	6.20
			2	7.84	7.19	6.90	6.22
			3	8.11	7.46	7.17	6.49
			4	8.11	7.46	7.17	6.50
		97	1	8.59	7.85	7.49	6.65
			2	9.44	8.71	8.35	7.51
			3	11.33	10.59	10.23	9.40
			4	10.82	10.08	9.72	8.89
		98	1	11.59	10.83	10.45	9.58
			2	9.91	9.15	8.78	7.91
			3	8.32	7.56	7.19	6.32
			4	7.47	6.71	6.33	5.46
	LE 60 feet	95	1	6.68	6.12	5.89	5.35
			2	7.40	6.85	6.61	6.08
			3	7.17	6.61	6.38	5.84
			4	6.33	5.78	5.54	5.01
		96	1	8.32	7.67	7.38	6.70
			2	8.35	7.70	7.41	6.73
			3	8.62	7.97	7.68	7.00
			4	8.62	7.97	7.68	7.00
		97	1	9.21	8.47	8.11	7.28
			2	10.07	9.33	8.97	8.14
			3	11.96	11.22	10.86	10.03
			4	11.45	10.71	10.35	9.51
		98	1	12.24	11.48	11.11	10.24
			2	10.57	9.81	9.43	8.56
			3	8.98	8.22	7.84	6.97
			4	8.13	7.37	6.99	6.12

(Continued)

Table 4-6. Estimated Prices Per Unit of Sablefish QS, Expressed in Dollars Per Pound of IFQ

Area	Vessel Category	Year	Quarter	Unblocked Price	Large Block Price	Medium Block Price	Small Block Price
W. Yakutat	Freezer	95	1	5.66	5.02	4.74	4.09
			2	6.54	5.91	5.62	4.97
			3	6.25	5.62	5.34	4.69
			4	5.24	4.60	4.32	3.67
		96	1	7.43	6.66	6.28	5.40
			2	7.46	6.70	6.32	5.44
			3	7.82	7.05	6.67	5.79
			4	7.82	7.05	6.67	5.79
		97	1	8.50	7.64	7.18	6.11
			2	9.60	8.74	8.28	7.21
			3	12.03	11.17	10.70	9.63
			4	11.37	10.51	10.04	8.97
		98	1	12.39	11.50	11.02	9.89
			2	10.22	9.33	8.85	7.72
			3	8.16	7.28	6.79	5.66
			4	7.06	6.17	5.69	4.56
	GT 60 feet	95	1	5.56	4.92	4.64	3.99
			2	6.44	5.81	5.53	4.87
			3	6.15	5.52	5.24	4.59
			4	5.14	4.50	4.22	3.57
		96	1	7.29	6.53	6.15	5.27
			2	7.33	6.56	6.18	5.30
			3	7.68	6.92	6.54	5.65
			4	7.68	6.92	6.54	5.66
		97	1	8.34	7.48	7.01	5.94
			2	9.44	8.58	8.12	7.05
			3	11.86	11.00	10.54	9.47
			4	11.20	10.34	9.88	8.81
		98	1	12.22	11.33	10.84	9.72
			2	10.05	9.16	8.68	7.55
			3	7.99	7.10	6.62	5.49
			4	6.89	6.00	5.51	4.39
	LE 60 feet	95	1	6.05	5.42	5.13	4.48
			2	6.93	6.30	6.02	5.36
			3	6.65	6.01	5.73	5.08
			4	5.63	4.99	4.71	4.06
		96	1	7.96	7.19	6.81	5.93
			2	7.99	7.23	6.85	5.97
			3	8.34	7.58	7.20	6.32
			4	8.35	7.58	7.20	6.32
		97	1	9.14	8.28	7.82	6.75
			2	10.24	9.38	8.92	7.85
			3	12.67	11.81	11.35	10.28
			4	12.01	11.15	10.69	9.62
		98	1	13.06	12.18	11.69	10.56
			2	10.90	10.01	9.52	8.40
			3	8.84	7.95	7.47	6.34
			4	7.74	6.85	6.36	5.23

(Continued)

Table 4-6. Estimated Prices Per Unit of Sablefish QS, Expressed in Dollars Per Pound of IFQ

Area	Vessel Category	Year	Quarter	Unblocked Price	Large Block Price	Medium Block Price	Small Block Price
C. Gulf	Freezer	95	1	5.13	4.44	4.12	3.38
			2	6.13	5.45	5.12	4.38
			3	5.81	5.12	4.80	4.06
			4	4.65	3.96	3.64	2.90
		96	1	7.30	6.51	6.11	5.17
			2	7.34	6.55	6.14	5.21
			3	7.71	6.92	6.52	5.58
			4	7.72	6.92	6.52	5.58
		97	1	8.57	7.74	7.31	6.32
			2	9.59	8.77	8.34	7.34
			3	11.85	11.02	10.59	9.60
			4	11.23	10.41	9.98	8.98
		98	1	12.09	11.25	10.82	9.80
			2	10.14	9.31	8.87	7.86
			3	8.30	7.46	7.03	6.01
			4	7.30	6.47	6.03	5.02
	GT 60 feet	95	1	5.01	4.33	4.01	3.26
			2	6.02	5.33	5.01	4.27
			3	5.69	5.01	4.69	3.94
			4	4.54	3.85	3.53	2.79
		96	1	7.16	6.37	5.96	5.03
			2	7.20	6.40	6.00	5.06
			3	7.57	6.78	6.37	5.44
			4	7.58	6.78	6.38	5.44
		97	1	8.41	7.59	7.16	6.16
			2	9.44	8.61	8.18	7.19
			3	11.69	10.87	10.44	9.44
			4	11.08	10.26	9.83	8.83
		98	1	11.93	11.10	10.66	9.65
			2	9.99	9.15	8.72	7.71
			3	8.14	7.31	6.87	5.86
			4	7.15	6.32	5.88	4.87
	LE 60 feet	95	1	5.57	4.89	4.57	3.82
			2	6.58	5.89	5.57	4.83
			3	6.25	5.57	5.25	4.50
			4	5.10	4.41	4.09	3.35
		96	1	7.86	7.07	6.67	5.73
			2	7.90	7.11	6.70	5.77
			3	8.28	7.48	7.08	6.14
			4	8.28	7.49	7.08	6.15
		97	1	9.16	8.34	7.91	6.91
			2	10.19	9.36	8.93	7.94
			3	12.44	11.62	11.19	10.19
			4	11.83	11.01	10.58	9.58
		98	1	12.69	11.86	11.42	10.41
			2	10.75	9.92	9.48	8.47
			3	8.90	8.07	7.63	6.62
			4	7.91	7.08	6.64	5.63

(Continued)

Table 4-6. Estimated Prices Per Unit of Sablefish QS, Expressed in Dollars Per Pound of IFQ

Area	Vessel Category	Year	Quarter	Unblocked Price	Large Block Price	Medium Block Price	Small Block Price
W. Gulf	Freezer	95	1	4.63	3.90	3.54	2.71
			2	5.75	5.01	4.66	3.83
			3	5.39	4.65	4.30	3.47
			4	4.10	3.36	3.01	2.18
		96	1	7.19	6.38	5.95	4.97
			2	7.23	6.41	5.99	5.01
			3	7.63	6.81	6.38	5.40
			4	7.63	6.81	6.39	5.40
		97	1	8.46	7.58	7.10	5.99
			2	9.61	8.73	8.25	7.14
			3	12.13	11.25	10.77	9.66
			4	11.44	10.56	10.08	8.97
		98	1	12.39	11.50	11.02	9.89
			2	10.22	9.33	8.85	7.72
			3	8.16	7.28	6.79	5.66
			4	7.06	6.17	5.68	4.56
	GT 60 feet	95	1	4.51	3.77	3.41	2.59
			2	5.62	4.89	4.53	3.70
			3	5.26	4.53	4.17	3.34
			4	3.97	3.24	2.88	2.05
		96	1	7.04	6.22	5.80	4.82
			2	7.08	6.26	5.84	4.86
			3	7.47	6.66	6.23	5.25
			4	7.48	6.66	6.24	5.25
		97	1	8.29	7.41	6.93	5.82
			2	9.44	8.56	8.08	6.97
			3	11.96	11.08	10.60	9.49
			4	11.27	10.39	9.91	8.80
		98	1	12.22	11.33	10.84	9.72
			2	10.05	9.16	8.68	7.55
			3	7.99	7.10	6.62	5.49
			4	6.89	6.00	5.51	4.38
	LE 60 feet	95	1	5.13	4.39	4.04	3.21
			2	6.25	5.51	5.15	4.33
			3	5.88	5.15	4.79	3.97
			4	4.60	3.86	3.50	2.68
		96	1	7.78	6.96	6.54	5.56
			2	7.82	7.00	6.58	5.60
			3	8.21	7.40	6.97	5.99
			4	8.22	7.40	6.98	5.99
		97	1	9.13	8.25	7.77	6.66
			2	10.28	9.40	8.92	7.80
			3	12.80	11.92	11.44	10.32
			4	12.11	11.23	10.75	9.64
		98	1	13.07	12.18	11.69	10.56
			2	10.90	10.01	9.52	8.40
			3	8.84	7.95	7.47	6.34
			4	7.73	6.85	6.36	5.23