

-TABLE 9-

Optimal level of stock (S^*) (Tm), effort (number of boats) (E^*), catches (Y^*) (Tm), transitory ITQ prices ($\mu=s$) (€/Tm), perpetual ITQ optimal prices for 25, 15 and 5 years [$25 (l(0)_{n=25})$, $15 (l(0)_{n=15})$, $5 (l(0)_{n=5})$] (€/Tm) for different anchovy prices (p) . Discount rate ($r=0,01$).

C/P	S^*	NB*	Y^*	P=1.500				P=3.000				P=4.500				P=6.000			
				$\mu=s$	$s(0)_{n=25}$	s_n	s_n	$\mu=s$	$s(0)_{n=25}$	$s(0)_{n=15}$	$s(0)_{n=5}$	$\mu=s$	$s(0)_{n=25}$	$s(0)_{n=15}$	$s(0)_{n=5}$	$\mu=s$	$s(0)_{n=25}$	$s(0)_{n=15}$	$s(0)_{n=5}$
0	50.095	396	27.572	1.500	33.180	20.894	7.316	3.000	66.360	41.788	14.631	4.500	99.540	62.681	21.947	6.000	132.720	83.575	29.262
5	55.568	354	27.470	1.351	30.989	19.514	6.832	2.702	61.977	39.028	13.665	4.054	92.966	58.542	20.497	5.125	119.840	75.465	26.423
10	60.627	319	27.212	1.230	29.202	18.389	6.439	2.460	58.404	36.778	12.877	3.690	87.607	55.167	19.316	4.495	110.564	69.624	24.377
15	65.343	290	26.844	1.128	27.704	17.446	6.108	2.256	55.408	34.891	12.217	3.384	83.113	52.337	18.325	4.009	103.405	65.116	22.799
20	69.766	264	26.399	1.041	26.422	16.638	5.826	2.082	52.845	33.277	11.651	3.123	79.267	49.915	17.477	3.617	97.639	61.485	21.528
25	73.931	242	25.899	965	25.308	15.937	5.580	1.931	50.617	31.874	11.160	2.896	75.925	47.811	16.740	3.293	92.858	58.474	20.474
30	77.866	222	25.360	899	24.328	15.320	5.364	1.798	48.657	30.640	10.728	2.696	72.985	45.960	16.092	3.018	88.807	55.923	19.580
35	81.592	205	24.793	840	23.458	14.772	5.172	1.679	46.916	29.544	10.344	2.519	70.374	44.316	15.516	2.781	85.319	53.727	18.811
40	85.127	189	24.208	752	22.163	13.956	4.887	1.503	44.326	27.913	9.773	2.255	66.489	41.869	14.660	2.574	82.277	51.811	18.141
45	88.487	175	23.613	739	21.976	13.839	4.845	1.478	43.953	27.678	9.691	2.217	65.929	41.516	14.536	2.392	79.597	50.123	17.550
50	91.687	162	23.011	696	21.340	13.438	4.705	1.392	42.679	26.876	9.410	2.087	64.019	40.313	14.115	2.230	77.214	48.623	17.024
55	94.727	151	22.410	656	20.759	13.072	4.577	1.313	41.519	26.145	9.154	1.969	62.278	39.217	13.731	2.085	75.081	47.279	16.554
60	97.628	140	21.810	620	20.228	12.738	4.460	1.241	40.457	25.476	8.920	1.861	60.685	38.214	13.380	1.955	73.162	46.071	16.131
65	100.395	131	21.216	587	19.741	12.431	4.352	1.174	39.481	24.862	8.705	1.762	59.222	37.293	13.057	1.837	71.419	44.973	15.747
70	103.036	122	20.629	557	19.291	12.148	4.253	1.113	38.583	24.296	8.507	1.670	57.874	36.444	12.760	1.729	69.836	43.976	15.398
75	105.558	114	20.051	528	18.876	11.886	4.162	1.057	37.752	23.773	8.324	1.585	56.628	35.659	12.485	1.631	68.389	43.066	15.079
80	107.967	107	19.433	502	18.491	11.644	4.077	1.005	36.982	23.288	8.154	1.507	55.473	34.932	12.231	1.541	67.064	42.231	14.786
85	110.270	100	18.927	478	18.133	11.419	3.998	956	36.267	22.838	7.996	1.434	54.400	34.257	11.994	1.458	65.844	41.463	14.517
90	112.472	94	18.383	455	17.800	11.209	3.925	911	35.601	22.418	7.849	1.366	53.401	33.627	11.774	1.382	64.720	40.755	14.270
95	114.578	88	17.852	434	17.490	11.014	3.856	869	34.980	22.027	7.712	1.303	52.469	33.041	11.569	1.311	63.680	40.100	14.040
100	116.593	83	17.335	415	17.200	10.831	3.792	829	34.399	21.662	7.584	1.244	51.599	32.492	11.377	1.245	62.715	39.493	13.828

-TABLE 10-

Optimal level of stock (S^*) (Tm), effort (number of boats) (E^*), catches (Y^*) (Tm), transitory ITQ prices ($\mu=s$) (€/Tm), perpetual ITQ optimal prices for 25, 15 and 5 years [$25 (l(0)_{n=25})$, $15 (l(0)_{n=15})$, $y 5 (l(0)_{n=5})$] (€/Tm) for different anchovy prices (p) . Discount rate ($r=0,05$).

C/P	S^*	NB*	Y^*	P=1.500				P=3.000				P=4.500				P=6.000			
				$\mu=s$	$s(0)_{n=25}$	s_n	s_n	$\mu=s$	$s(0)_{n=25}$	$s(0)_{n=15}$	$s(0)_{n=5}$	$\mu=s$	$s(0)_{n=25}$	$s(0)_{n=15}$	$s(0)_{n=5}$	$\mu=s$	$s(0)_{n=25}$	$s(0)_{n=15}$	$s(0)_{n=5}$
0	50.095	396	27.572	1.500	21.405	15.829	6.636	3.000	42.810	31.658	13.272	4.500	64.215	47.487	19.908	6.000	85.619	63.316	26.544
5	55.568	354	27.470	1.337	19.852	14.681	6.155	2.673	39.705	29.362	12.309	4.010	59.557	44.043	18.464	5.346	79.409	58.724	24.619
10	60.627	319	27.212	1.207	18.619	13.769	5.772	2.413	37.237	27.537	11.544	3.620	55.856	41.306	17.317	4.827	74.474	55.074	23.089
15	65.343	290	26.844	1.100	17.603	13.017	5.457	2.199	35.206	26.035	10.915	3.299	52.809	39.052	16.372	4.399	70.411	52.070	21.829
20	69.766	264	26.399	1.009	16.746	12.384	5.192	2.019	33.492	24.767	10.383	3.028	50.237	37.151	15.575	4.038	66.983	49.534	20.766
25	73.931	242	25.899	932	16.009	11.839	4.963	1.864	32.018	23.678	9.926	2.796	48.027	35.516	14.890	3.728	64.036	47.355	19.853
30	77.866	222	25.360	864	15.367	11.364	4.764	1.729	30.734	22.728	9.528	2.593	46.101	34.092	14.292	3.457	61.468	45.456	19.056
35	81.592	205	24.793	805	14.801	10.945	4.589	1.609	29.602	21.891	9.177	2.414	44.403	32.836	13.766	3.219	59.204	43.782	18.355
40	85.127	189	24.208	752	14.298	10.573	4.433	1.503	28.595	21.146	8.865	2.255	42.893	31.720	13.298	3.007	57.190	42.293	17.730
45	88.487	175	23.613	704	13.846	10.239	4.293	1.408	27.693	20.479	8.585	2.113	41.539	30.718	12.878	2.817	55.386	40.958	17.171
50	91.687	162	23.011	661	13.439	9.938	4.166	1.323	26.879	19.877	8.333	1.984	40.318	29.815	12.499	2.646	53.757	39.754	16.666
55	94.727	151	22.410	623	13.070	9.665	4.052	1.245	26.140	19.331	8.104	1.868	39.210	28.996	12.156	2.490	52.280	38.662	16.208
60	97.628	140	21.810	587	12.734	9.417	3.948	1.174	25.467	18.833	7.895	1.761	38.201	28.250	11.843	2.348	50.934	37.666	15.791
65	100.395	131	21.216	555	12.426	9.189	3.852	1.109	24.851	18.378	7.704	1.664	37.277	27.567	11.557	2.219	49.703	36.755	15.409
70	103.036	122	20.629	525	12.143	8.980	3.765	1.050	24.286	17.959	7.529	1.575	36.429	26.939	11.294	2.100	48.572	35.919	15.058
75	105.558	114	20.051	497	11.882	8.787	3.684	995	23.765	17.574	7.368	1.492	35.647	26.361	11.051	1.990	47.529	35.148	14.735
80	107.967	107	19.433	472	11.641	8.609	3.609	944	23.283	17.218	7.218	1.416	34.924	25.826	10.827	1.888	46.565	34.435	14.436
85	110.270	100	18.927	449	11.418	8.444	3.540	897	22.837	16.888	7.080	1.346	34.255	25.332	10.620	1.794	45.673	33.776	14.160
90	112.472	94	18.383	427	11.211	8.291	3.476	854	22.422	16.581	6.951	1.280	33.633	24.872	10.427	1.707	44.844	33.163	13.903
95	114.578	88	17.852	406	11.018	8.148	3.416	813	22.036	16.296	6.832	1.219	33.054	24.444	10.248	1.626	44.072	32.592	13.663
100	116.593	83	17.335	388	10.838	8.015	3.360	775	21.677	16.030	6.720	1.163	32.515	24.045	10.080	1.550	43.353	32.060	13.440

-TABLE 11-

Optimal level of stock (S^*) (Tm), effort (number of boats) (E^*), catches (Y^*) (Tm), transitory ITQ prices ($\mu=s$) (€/Tm), perpetual ITQ optimal prices for 25, 15 and 5 years [$25 (l(0)_{n=25})$, $15 (l(0)_{n=15})$, $y 5 (l(0)_{n=5})$] (€/Tm) for different anchovy prices (p) . Discount rate ($r=0,1$).

C/P	S^*	NB*	Y^*	P=1.500				P=3.000				P=4.500				P=6.000			
				$\mu=s$	$s(0)_{n=25}$	s_n	s_n	$\mu=s$	$s(0)_{n=25}$	$s(0)_{n=15}$	$s(0)_{n=5}$	$\mu=s$	$s(0)_{n=25}$	$s(0)_{n=15}$	$s(0)_{n=5}$	$\mu=s$	$s(0)_{n=25}$	$s(0)_{n=15}$	$s(0)_{n=5}$
0	50.095	396	27.572	1.500	13.769	11.653	5.902	3.000	27.537	23.306	11.804	4.500	41.306	34.959	17.706	6.000	55.075	46.612	23.608
5	55.568	354	27.470	1.318	12.658	10.713	5.426	2.636	25.316	21.426	10.852	3.955	37.973	32.139	16.278	5.273	50.631	42.851	21.703
10	60.627	319	27.212	1.178	11.803	9.990	5.060	2.357	23.606	19.979	10.119	3.535	35.410	29.969	15.179	4.713	47.213	39.958	20.238
15	65.343	290	26.844	1.066	11.115	9.407	4.765	2.131	22.230	18.814	9.529	3.197	33.346	28.222	14.294	4.263	44.461	37.629	19.058
20	69.766	264	26.399	972	10.544	8.924	4.520	1.944	21.088	17.848	9.040	2.917	31.632	26.772	13.559	3.889	42.176	35.696	18.079
25	73.931	242	25.899	893	10.060	8.514	4.312	1.786	20.119	17.028	8.624	2.679	30.179	25.542	12.936	3.572	40.238	34.055	17.248
30	77.866	222	25.360	825	9.642	8.160	4.133	1.649	19.283	16.320	8.266	2.474	28.925	24.480	12.399	3.298	38.567	32.641	16.532
35	81.592	205	24.793	765	9.276	7.851	3.976	1.529	18.553	15.702	7.953	2.294	27.829	23.553	11.929	3.059	37.106	31.404	15.906
40	85.127	189	24.208	712	8.954	7.578	3.838	1.424	17.908	15.156	7.676	2.136	26.862	22.734	11.514	2.848	35.816	30.312	15.353
45	88.487	175	23.613	665	8.667	7.335	3.715	1.330	17.333	14.670	7.430	1.995	26.000	22.005	11.145	2.660	34.667	29.340	14.860
50	91.687	162	23.011	623	8.409	7.117	3.605	1.246	16.818	14.234	7.209	1.868	25.227	21.351	10.814	2.491	33.636	28.468	14.418
55	94.727	151	22.410	585	8.176	6.920	3.505	1.169	16.353	13.840	7.010	1.754	24.529	20.760	10.515	2.339	32.706	27.680	14.020
60	97.628	140	21.810	550	7.965	6.742	3.414	1.100	15.931	13.483	6.829	1.651	23.896	20.225	10.243	2.201	31.862	26.966	13.658
65	100.395	131	21.216	519	7.773	6.579	3.332	1.037	15.546	13.157	6.664	1.556	23.319	19.736	9.996	2.075	31.093	26.315	13.328
70	103.036	122	20.629	490	7.597	6.430	3.257	979	15.194	12.860	6.513	1.469	22.791	19.289	9.770	1.958	30.389	25.719	13.026
75	105.558	114	20.051	463	7.435	6.293	3.187	927	14.871	12.586	6.374	1.390	22.306	18.879	9.562	1.854	29.742	25.172	12.749
80	107.967	107	19.433	439	7.287	6.167	3.123	878	14.573	12.334	6.247	1.317	21.860	18.501	9.370	1.756	29.146	24.668	12.494
85	110.270	100	18.927	417	7.149	6.050	3.064	833	14.298	12.101	6.129	1.250	21.447	18.151	9.193	1.666	28.596	24.202	12.258
90	112.472	94	18.383	396	7.022	5.943	3.010	791	14.043	11.885	6.020	1.187	21.065	17.828	9.029	1.583	28.086	23.770	12.039
95	114.578	88	17.852	376	6.903	5.842	2.959	753	13.806	11.685	5.918	1.129	20.709	17.527	8.877	1.505	27.612	23.370	11.836
100	116.593	83	17.335	358	6.793	5.749	2.912	717	13.586	11.498	5.824	1.075	20.379	17.248	8.736	1.433	27.172	22.997	11.647

-TABLE 12-

Optimal level of stock (S^*) (Tm), effort (number of boats) (E^*), catches (Y^*) (Tm), transitory ITQ prices ($\mu=s$) (€/Tm), perpetual ITQ optimal prices for 25, 15 and 5 years [$25 (l(0)_{n=25})$, $15 (l(0)_{n=15})$, $y 5 (l(0)_{n=5})$] (€/Tm) for different anchovy prices (p) . Discount rate ($r=0,2$).

C/P	S^*	NB*	Y^*	P=1.500				P=3.000				P=4.500				P=6.000			
				$\mu=s$	$s(0)_{n=25}$	S_n	S_n	$\mu=s$	$s(0)_{n=25}$	$s(0)_{n=15}$	$s(0)_{n=5}$	$\mu=s$	$s(0)_{n=25}$	$s(0)_{n=15}$	$s(0)_{n=5}$	$\mu=s$	$s(0)_{n=25}$	$s(0)_{n=15}$	$s(0)_{n=5}$
0	50.095	396	27.572	1.500	7.449	7.127	4.741	3.000	14.899	14.253	9.482	4.500	22.348	21.380	14.223	6.000	29.798	28.506	18.964
5	55.568	354	27.470	1.281	6.727	6.435	4.281	2.563	13.453	12.870	8.562	3.844	20.180	19.305	12.843	5.125	26.906	25.740	17.123
10	60.627	319	27.212	1.124	6.206	5.937	3.949	2.248	12.412	11.874	7.899	3.371	18.618	17.811	11.848	4.495	24.824	23.748	15.798
15	65.343	290	26.844	1.002	5.804	5.553	3.694	2.005	11.608	11.105	7.388	3.007	17.412	16.658	11.081	4.009	23.216	22.210	14.775
20	69.766	264	26.399	904	5.480	5.243	3.488	1.809	10.961	10.486	6.976	2.713	16.441	15.729	10.463	3.617	21.922	20.972	13.951
25	73.931	242	25.899	823	5.212	4.986	3.317	1.646	10.424	9.972	6.634	2.469	15.636	14.958	9.951	3.293	20.848	19.945	13.268
30	77.866	222	25.360	754	4.985	4.769	3.172	1.509	9.969	9.537	6.345	2.263	14.954	14.306	9.517	3.018	19.939	19.075	12.689
35	81.592	205	24.793	695	4.789	4.581	3.048	1.390	9.578	9.163	6.095	2.085	14.367	13.744	9.143	2.781	19.156	18.325	12.191
40	85.127	189	24.208	644	4.618	4.418	2.939	1.287	9.236	8.836	5.878	1.931	13.855	13.254	8.817	2.574	18.473	17.672	11.756
45	88.487	175	23.613	598	4.468	4.274	2.843	1.196	8.935	8.548	5.687	1.794	13.403	12.822	8.530	2.392	17.871	17.096	11.373
50	91.687	162	23.011	558	4.334	4.146	2.758	1.115	8.668	8.292	5.516	1.673	13.002	12.438	8.275	2.230	17.336	16.585	11.033
55	94.727	151	22.410	521	4.214	4.032	2.682	1.043	8.428	8.063	5.364	1.564	12.643	12.095	8.046	2.085	16.857	16.126	10.728
60	97.628	140	21.810	489	4.107	3.929	2.613	977	8.213	7.857	5.227	1.466	12.320	11.786	7.840	1.955	16.426	15.714	10.454
65	100.395	131	21.216	459	4.009	3.835	2.551	918	8.017	7.670	5.102	1.377	12.026	11.505	7.653	1.837	16.035	15.340	10.205
70	103.036	122	20.629	432	3.920	3.750	2.495	865	7.840	7.500	4.989	1.297	11.759	11.250	7.484	1.729	15.679	15.000	9.978
75	105.558	114	20.051	408	3.839	3.672	2.443	815	7.677	7.345	4.886	1.223	11.516	11.017	7.329	1.631	15.355	14.689	9.772
80	107.967	107	19.433	385	3.764	3.601	2.396	770	7.528	7.202	4.791	1.156	11.293	10.803	7.187	1.541	15.057	14.404	9.582
85	110.270	100	18.927	364	3.696	3.536	2.352	729	7.392	7.071	4.704	1.093	11.087	10.607	7.056	1.458	14.783	14.142	9.408
90	112.472	94	18.383	345	3.633	3.475	2.312	691	7.265	6.951	4.624	1.036	10.898	10.426	6.936	1.382	14.531	13.901	9.248
95	114.578	88	17.852	328	3.574	3.419	2.275	655	7.149	6.839	4.549	983	10.723	10.258	6.824	1.311	14.297	13.678	9.099
100	116.593	83	17.335	311	3.520	3.368	2.240	623	7.040	6.735	4.481	934	10.561	10.103	6.721	1.245	14.081	13.470	8.961

