

1999-17

1999. 12

， ， ，

---

1970  
가 1990  
가, ,  
 ,  
 .  
 ,  
 가  
 .  
 가 ,  
 가 .  
 가 .

1999 12

韓國海洋水產開發院  
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< >

養殖水産物      消費習慣      需要 分析

1997 7

가 , 1990  
가  
(Partial Adjustment)  
(Habit Persistence)  
2010  
0.6 ,  
가 가 , , 51%,  
37%, 24% 가 가  
가

---

<ABSTRACT>

## **Analysis on the Consumption Pattern and Demand of Aquaculture Products**

Since the import liberalization of July 1997, Korea's consumption pattern of fishery products has been changing in accordance with income transition and dietary change. Under such circumstances, the supply-demand stability of fishery products will become a critical issue in order to protect consumers and producers. And in this regard, analysis as well as evaluation of the supply and demand of fishery products are required. Especially, estimation of the demand function and the prospect of aquaculture products consumption has a significant meaning owing to aquaculture products' growing importance in the total fishery products and their rising consumption since the 1990s.

This study assessed the demand prospects of principal aquaculture products until the year 2010 based on the demand analysis by the so-called 'Partial Adjustment Model' or 'Habit Persistence Model' which was used to acquire long and short term demand elasticities on explanatory variables such as dietary change or price of cultured fishery products.

The result was that most of the habit persistency of aquaculture products were above 0.6 which means that the consumers' habit of major aquaculture products persists at a very high level.

Regarding the estimation on demand, long and short term product demand forecasting were made by dividing the increasing rate of income and population into high, medium, and low levels. The prediction on consumption increase made by using the high level was 51%, the medium level 37%, and the low level 24%. Also, the outcome shows that consumption increase rate of fish stocks were particularly high.

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< -1>	1 .....	8
< -2>	1 1 .....	9
< -3>	(1 1 ) .....	10
< -4>	.....	11
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< -7>	.....	16
< -1>	.....	20
< -2>	.....	23
< -3>	가 . 가 . .....	24
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< -2>	.....	27
< -3>	.....	27
< -4>	.....	27

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<	-1>	가	.....	13
<	-2>	가	.....	15
<	-3>	가	.....	17



---

## 第 1 章 序 論

### 1. 研究目的

韓・日 韓・中  
가  
UN EEZ  
39%  
가  
가  
가  
WTO , APEC  
150 2011 200 1998 80 2004

2

2 766

1)

가

( )

(Consumption Habit Persistence Coefficient) , 가

## 2. 研究範圍 分析方法

1)

가

---

1) , 「 , 1999. 8.

1 3

가  
6  
1972 1997 26

2)

(Descriptive Analysis) 26 (1972 97 )  
2 (Econometric Approach)  
(Habit Formation)  
(Patial Adjustment Model)  
(Habit Persistence Model)

第 2 章 養殖水産物 現況

1. 生産 現況

1970 1990  
1998 283 4 M/T 1995 15 %  
( < - 1 > ).

< - 1 >

: M/T

1980	458 (19.0)	1,372 (56.9)	541 (22.8)	2,371 (98.4)	39 (1.6)	2,410 (100.0)
1985	767 (27.7)	1,495 (48.2)	788 (25.4)	3,050 (98.3)	53 (1.7)	3,103 (100.0)
1990	925 (28.2)	1,542 (47.1)	773 (23.6)	3,240 (98.9)	34 (1.1)	3,275 (100.0)
1995	897 (26.0)	1,425 (41.3)	997 (28.9)	3,320 (99.2)	29 (0.8)	3,348 (100.0)
1998	723 (25.5)	1,308 (46.2)	777 (27.4)	2,808 (99.1)	27 (0.9)	2,834 (100.0)

: , 「 , 「 , .  
: ( ) .

28% , 1980 56.9% 1998  
 46.2% . 1995  
 1998 22% 가 가 .  
 1970 ,  
 1980  
 1990 10 (<  
 -2> ).

< -2>

: M/T, %

		1990		1995		1998	
		1,037	39.0	6,733	80.5	22,277	59.7
		386	14.5	985	11.8	12,544	33.6
		462	17.4	159	1.9	266	0.7
		(79)*	-	193	2.3	940	2.5
		771	29.0	290	3.5	1,296	3.5
		2,656	0.3	8,360	0.8	37,323	4.8
		219,124	67.3	191,156	61.2	175,926	73.4
		61,713	19.0	15,260	4.9	17,174	9.8
		44,766	13.7	105,836	33.9	46,650	19.5
		325,603	42.1	312,252	31.3	239,750	30.9
		97,637	23.7	192,960	29.7	190,979	40.7
		269,333	65.4	386,819	59.6	239,742	51.1
		44,899	10.9	69,320	10.7	38,449	8.2
		411,869	53.3	649,099	65.1	469,170	60.4
		32,603	4.2	26,740	2.7	30,388	3.9
		772,731	100.0	996,451	100.0	776,631	100.0

: < -1> .

: 1992 , \* 1992 .

1970 1980 3  
 M/T , 1990  
 . 1990 가

1998 가 90% .  
 , 51.1% , 40.7% 90% 60%  
 . 31% ,  
 73% ( 20 30% )  
 10% .

## 2. 輸出入 現況

가  
 < -3> 가  
 1985 1998 .  
 , 1985  
 1998 22 .  
 , 1990  
 ,  
 1998 .

< -3>

: M/T

1985	-	-	9,870	673	163	27,866
1990	64	-	11,822	24,320	508	29,175
1995	1,143	206	14,533	11,798	1,240	15,795
1998	2,283	174	15,925	15,289	2,796	14,528

: , 「 」,  
 : , .

2

7

1997

< -4>

1998 1,589M/ T

,

가

< -4>

: M/T

1985	-	-	-	-	-	-
1990	-	-	138	885	73	2
1995	-	32	227	3,212	8	182
1998	2*	9*	131	1,731	32	1,589

: < -3>

: \* 1997

,

### 第 3 章 養殖水産物 消費 變化

#### 1. 全體食品 消費 變化

가 , 가  
1980 2)  
가  
가  
가  
가  
( < -1> ).

< -1>

1

: kg

					*	
1970	130.4	69.9	8.3	1.8	17.3	1.5
1980	132.9	136.8	13.9	10.8	27.0	5.0
1985	128.0	125.2	16.5	23.1	37.2	9.2
1990	120.8	161.6	23.6	31.8	36.2	14.3
1995	110.6	160.6	32.7	38.5	45.1	14.2
1997	104.6	148.2	35.2	41.0	43.6	15.2

: , 「 ,  
: \*

2)

(Cohort) 가  
, 1997. 12.



, 1995 60%  
가 1980  
가 ,  
1 16g (<  
-2> ).

< -2> 1 1

: g

		1970	1980	1985	1990	1995	1997
		40.19	36.93	41.41	38.41	37.26	37.04
		8.18	8.91	10.14	9.49	9.38	9.41
		6.12	7.62	6.53	8.22	10.99	10.40
		54.49	53.46	58.08	56.12	57.62	56.85
		4.07	9.49	12.08	17.25	22.87	24.60
		6.59	10.66	16.44	15.88	16.41	15.66
		10.66	20.15	28.53	33.15	39.28	40.26
		65.15	73.61	86.61	89.27	96.90	97.13

: < -1> .

가 ,  
, .  
.  
가  
3).

3) 松田友義・中村隆, “  
4 , 1993.

## 2. 水産物 消費 變化

< -3> 1 , , 가 가 , , , 가 , , , 가 , 가 가 .

< -3> (1 1 )

: g %

	1970	1980	1985	1990	1995	1997	APR
가	0.9	1.7	2.5	0.68	0.16	0.68	-1.1
	1.0	6.0	12.8	11.1	10.23	8.52	8.6
	2.9	2.2	0.9	1.42	1.66	1.18	-3.4
	0.3	1.6	2.1	3.23	2.38	2.23	8.0
	4.4	6.4	2.1	3.75	4.03	3.02	-1.4
	3.0	8.4	6.3	6.68	13.34	13.19	5.9
	2.1	2.9	2.9	3.51	6.80	5.89	4.0
	0.1	0.0	0.3	2.5	0.59	1.50	11.0
	0.1*	0.2	0.2	0.60	0.81	0.69	8.0
	0.2*	0.2	0.1	0.27	1.12	0.99	6.6
	0.4	0.9	1.6	2.16	2.57	4.68	10.0
	3.3	2.0	6.4	1.67	0.91	0.76	-5.5
	0.2	0.4	0.3	0.49	0.28	0.36	2.3
	1.9	3.0	7.9	15.18	19.97	16.06	8.6
	3.6	6.7	8.7	7.24	17.47	20.35	6.9
	2.9	3.8	7.0	5.88	10.65	6.95	3.4

: < -1> .

: \* 1971 . APR .

1990  
가 , 1970 97  
8.0% 가 , 6.6% 가 .  
1990 가  
가  
가 가  
가  
가 , 1970  
가 32% 1998 가  
91.1% 8.9% 가  
가 (< -4>  
> ).

< -4>

: M/T, %

	1970	1980	1984	1990	1995	1998
*	846	1,925	2,252	3,275	3,348	2,834
	575	954	889	437	592	252
가	270	998	1,363	2,827	2,756	2,583
가	32.0	51.1	60.5	86.6	82.3	91.1

: , 「 」, 가 , 1999 .  
: \* 1970, 1980 .

가  
가 , 가 가 .  
(原形)  
가 .  
가 가 가  
가  
가 .

## 3. 養殖水產物 需給 變化

1)

&lt; -5&gt;

: M/T, kg

			1			1
1987	20	12	0.00	-	-	0.00
1988	28	12	0.00	3	40	0.00
1989	254	154	0.00	96	225	0.01
1990	1,037	1,240	0.03	386	585	0.01
1991	1,815	3,766	0.09	312	795	0.02
1992	3,199	5,303	0.12	666	530	0.01
1993	4,029	11,792	0.26	679	5,609	0.12
1994	5,270	11,852	0.25	758	3,722	0.08
1995	6,733	15,021	0.31	1,017	4,990	0.11
1996	8,861	15,307	0.31	1,972	5,698	0.12
1997	26,276	17,141	0.35	11,078	10,464	0.22

: 1) , 「 , , .  
 2) , 「 , , .  
 3) , 「 , , .  
 : = + , = + .  
 ,  
 , .

< -5>

1987

가

가

1987 97

가

가

가

4) ,  
가 . 1997

105% ,

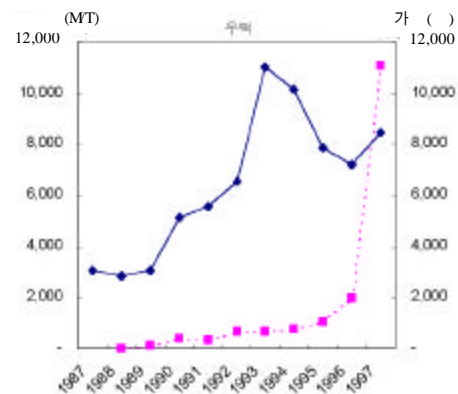
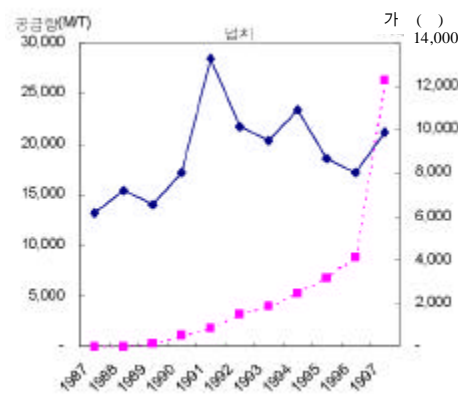
107%

149% ,

86%

 $\langle -1 \rangle$ 

가



: (M/T), 가 ( /kg)

< - 1>

가

1  
0.22kg .5)

4)

1997            0.35kg       ,

2)

(< -6> ),  
 가 , 1%  
 . 1994 가  
 , 가  
 , 가  
 가 ,  
 (< -2> ).  
 가 가  
 . 4% , 4% 가  
 . 1 1997 4.12kg,  
 0.22kg .

&lt; -6&gt;

: M/T, kg

	1			1		
1981	199,233	31,235	5.13	32182	7,388	0.84
1985	242,847	106,870	5.71	14,352	4,673	0.34
1990	219,262	37,822	4.84	62,598	32,320	0.89
1991	215,466	30,376	4.64	46,140	25,321	0.67
1992	235,418	33,979	5.08	54,902	26,462	0.92
1993	258,222	39,744	5.51	10,262	16,598	0.02
1994	172,332	21,982	3.59	20,017	15,229	0.22
1995	191,383	29,533	3.92	18,472	16,798	0.15
1996	185,692	21,060	3.79	24,190	13,954	0.36
1997	201,083	24,828	4.12	17,549	13,317	0.22

: &lt; -5&gt; .

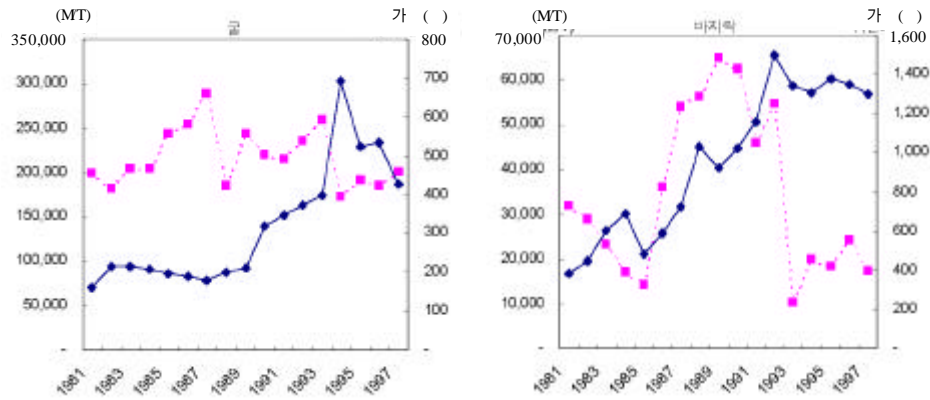
5)

1

가 .

, &lt; -3&gt;

< -2> 가



: < -1> .

3)

< -7> , . ,

4% 가

2% 가 .

1980 가 , 1995

가 가

가 가 ,

가

2% 가 ,

3% 가 . 1992 가

, 가 ,

, 가

가 가 (<

-3> ).

1 가 1994 6.01kg  
 , 1997 3.01kg . 1997  
 9.13kg 가 .  
 1 1997  
 17.05kg , 1 44.0kg 39% 가  
 ,  
 .

< -7>

: M/T, kg

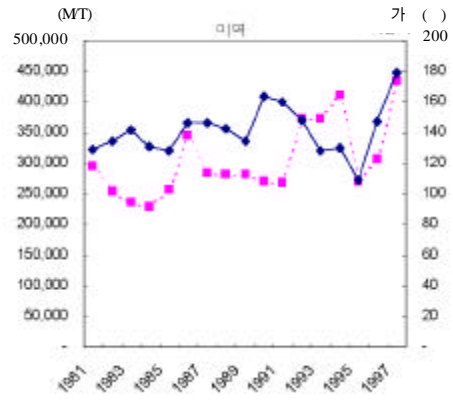
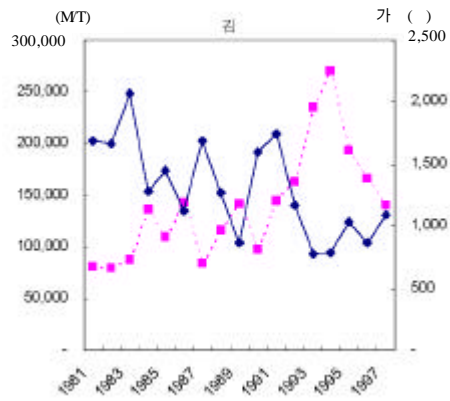
			1			1
1981	80,510	87,674	1.82	294,622	218,351	7.07
1985	109,830	104,163	2.69	256,456	153,866	5.60
1990	97,710	92,508	2.27	269,335	142,175	5.60
1991	143,951	133,466	3.31	267,049	157,233	5.61
1992	163,561	138,679	3.72	372,109	276,860	8.07
1993	235,642	230,911	5.31	372,384	274,988	7.97
1994	269,617	245,394	6.01	411,725	267,407	8.79
1995	192,968	174,240	4.25	269,763	299,795	5.63
1996	166,221	144,624	3.61	306,997	235,708	6.44
1997	140,264	118,968	3.01	433,903	356,113	9.13

: < -5> .



< -3>

가



: < -1> .

---

## 第 4 章 水産物 主要 品目別 需要函數 推定

### 1. 部分 動態需要分析 模型 移用 理論的 背景

AIDS (Almost Ideal Demand System)  
(Complete Demand System Approach)

(flexibility)  
가

(Partial Demand System Approach)  
(Bobst, Huang and Tilley, 1987).

가

가

가

가

가

가

(Prais and Houthakker, 1955),

가

가

.

가

가

,

가

가

,

,

,

가

.

.

.

(Habit Persistence)

.

가

.

## 2. 統計資料

가

.

가

, , , ,

,가

6)

( ) 가 .

6)

1997

88%,

,

86%,

,

99%

.

가

.



### 3. 實證分析 模型 推定結果

1)

가

(partial adjustment)

(habit persistence)

(Kmenta, 1971).

t, i

$C_{it}^*$ 가 (1)

가 (Pit),

( ) 가 (SPit),

(Yit)

8)

( it)

가 .

$$C_{it}^* = \alpha_0 + \alpha_1 P_{it} + \alpha_2 SP_{it} + \alpha_3 Y_{it} + \epsilon_{it}^2 \quad (1)$$

(1)

(富)

가

.

(desired level of consumption)

가

.

가

( ),

,

. 가

(2)

,

$C_{it}^*$

C

.

$$C_{it} - C_{it-1} = (C_{it}^* - C_{it-1}) + \epsilon_{it}^2 \quad (2)$$

(2)  $C_{it}^*$

,

9)

(1)

,

(3)

8) (1) 가 , ( ) 가 , ( )

.

$$9) C_{it}^* = \frac{1}{2} C_{it}^* + \frac{1}{2} C_{it-1}^* - \frac{1}{2} \epsilon_{it}^2 \quad (1) , C_{it}$$

가 가

.

$$C_{it} = \alpha_0 + \alpha_1 C_{it-1} + \alpha_2 P_{it} + \alpha_3 SP_{it} + \alpha_4 Y_{it} + \epsilon_{it} \quad (3)$$

$$\epsilon_{it} = (1 - \rho) \epsilon_{it} + \rho \epsilon_{it-1}, \quad \epsilon_{it} = \epsilon_{it}^1 + \epsilon_{it}^2, \quad \alpha_0 = \alpha_0, \quad \alpha_1 = \alpha_1, \quad \alpha_2 = \alpha_2, \quad \alpha_3 = \alpha_3$$

,

$$(3) \quad (t-1)$$

(OLS)

,

(MLE : Maximum Likelihood Estimation

Method)

가

(Kmenta, 1971).

MLE

(convergence)

(bias)

(efficiency)

(multicollinearity)

Ridge

.

2)

, , , , ,

(< -2> ), (t-1) , 가 ,

, 가 가

, 6

, , 3

(R<sup>2</sup>) 0.5

, ,

0.8

. 가

( $\hat{\epsilon}_i$ )

( $\hat{\epsilon}_i$ )

( $\hat{\epsilon}_i$ ) .

(3)

.

< -2>

	$\hat{\gamma}_0$	(t-1)	$\hat{\gamma}_1$	$\hat{\gamma}_3$	$\hat{\gamma}_2$	R <sup>2</sup>
	0.3227	0.49855*** (5.0500)	-0.10938 (-0.7980)	0.73142*** (4.0230)	-0.6587*** (-0.1878)	0.8432
	-5.7444	0.00500 (-0.0721)	-0.10569 (-0.50160)	1.1904*** (6.2530)	0.21877 (0.8426)	0.8014
	-0.4078	0.31221 (0.7579)	-0.23335 (-0.7177)	0.23690 (2.6360)	0.95851 (1.5260)	0.4401
	-4.1281	0.20660 (1.3720)	-0.62760*** (-2.5760)	0.46694 (0.8868)	1.3740*** (2.8910)	0.4000
	9.4346	0.26557*** (2.8360)	-0.37096** (-2.3120)	0.09257 (0.8271)	-0.56378** (-3.0200)	0.8026
	1.6075	0.38049** (2.2430)	-0.17545* (1.7240)	0.26870* (1.8710)	0.42702 (0.2440)	0.4489

: ( )

t

, \*\*\*, \*\*, \*

1%, 5%, 10%

< -3>

(Habit Persistence)

(0.50145)

0.6

,

(Wessells and Wilen, 1994).

< -3>

가 . 가 .

	$\hat{\phantom{x}}$	가 $\hat{\phantom{x}}_1$	$\hat{\phantom{x}}_3$	가 $\hat{\phantom{x}}_2$
	0.50145	-0.21813	1.45861	-1.31359
	0.99500	-0.10622	1.19638	0.21987
	0.68779	-0.33928	0.34444	1.39361
	0.79340	-0.79103	0.58853	1.73179
	0.73443	-0.50510	0.12604	-0.76764
	0.61951	-0.28321	0.43373	0.68929

(3)

(t-1)

가

( $\hat{\phantom{x}}_1, \hat{\phantom{x}}_2, \hat{\phantom{x}}_3$ )

( )

,

(t-1)

가 = (1 - )

가

( $\hat{\phantom{x}}_1, \hat{\phantom{x}}_2, \hat{\phantom{x}}_3$ )가

, 가

. < -2> < -3>

가

.

.

.

,

.

가

.

.



---

## 第 5 章 水産物 短期 中長期 需要 豫測

### 1. 需要豫測模型 方法

가 . 가 가 .  
가 . 가 ( 가 가 )  
가  
가  
가 ,  
.  
$$C_{it} = C_{it-1} (1 + \dot{L})(1 + \widehat{\dot{Y}}_i)$$
$$\dot{L}, \widehat{\dot{Y}}_i$$
 가 , i , GNP .  
(  $\widehat{\dot{Y}}_i$  ) 2000 2005  
2005 2010 .  
가 GNP < -1>  
, 가 「 (1996) 가  
GNP KDI 「  
( )」(1999. 11) .

< -1> . . 가

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
GNP <sup>1)</sup>		7.8	7.9	7.7	7.8	7.9	7.7	7.6	7.6	7.4	7.3	6.8
		5.8	5.9	5.7	5.8	5.9	5.7	5.6	5.5	5.4	5.3	4.8
		3.9	4.0	3.8	3.9	4.0	3.8	3.7	3.6	3.5	3.4	2.9
가 <sup>2)</sup>		1.0	0.9	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.6
		0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.5
		0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.4

: 1) 2000 2010

KDI  
10 GNP 1/2 SD(1.95) , KDI

2) 2000 2010

가  
10 SD(0.1)

## 2. 品目別 長短期 需要 豫測

1997 50 7 M/T  
2010 76 7 M/T 51% 가  
가 가 가 1997  
9 M/T 2010 2 7 M/T 2 , 1997 2 M/T  
2010 5 4 M/T 1.7 가 가  
1997 34 2 M/T 2010 51 3 M/T 50%  
가 1997 11 7 M/T  
2010 14 3 M/T 22% 가 가  
1997 2010 83% 가가  
46% 가 (< -2> ).

< -2>

: M/T

1997	20	9	13	6	117	342
2000	23	11	14	7	122	367
2005	31	17	16	8	132	424
2010	54	27	19	11	143	513

1997 50 7 M/T

2010 69 3 M/T 37% 가

(< -3> ).

1997 50

7 M/T

2010 62 8 M/T

24% 가

(< -4> ).

< -3>

: M/T

1997	20	9	13	6	117	342
2000	22	10	14	6	121	360
2005	28	14	15	8	129	404
2010	42	20	17	9	138	467

< -4>

: M/T

1997	20	9	13	6	117	342
2000	21	9	13	6	120	353
2005	25	12	15	7	127	385
2010	32	15	16	8	133	424

가 가

1997 2010 가 18 122%, 14 67%

가 .

110 122%, 60 67%

가가 31 50%, 23

33% 가가 . 1 2 2

2 M/T , 6 1 1 M/T 가

가 .

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## 第 6 章 要約 結論

· · · WTO, APEC  
가  
“ ” 가 “ ”  
· 1997 7  
·  
가 , 1990  
·  
·  
가 . 가  
가  
· 가  
·  
· 2010  
· 가  
(Partial Adjustment) (Habit Persistence)  
·  
(Habit Persistence) (0.50145)  
0.6 ,  
·

가  
가 ,  
, 가 가 , ,  
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1997 50 7 M/T  
2010 76 7 M/T 51% 가 .  
37% 가  
24% 가  
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가  
가 가 가  
가 .  
가 가  
가 , , 가  
가  
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1.0 가  
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가 , 가 , 가  
가 가 , ,



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, 「가」, 1989.  
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 1993.  
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가

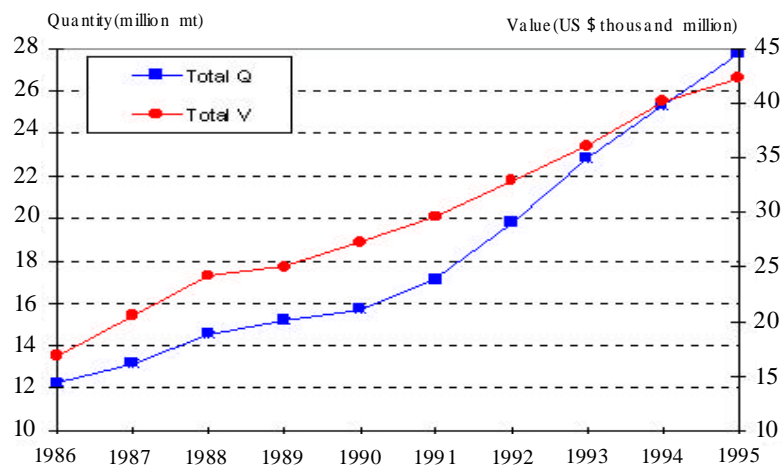
가

.10)

1995 2,780 M/T, 4 2,300 가

11) (< -1> ).

< -1>



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1995  
SCFFS (Sustainable Contribution of Fisheries to Food  
Securities)  
가  
< -1>

< -1> (1992 2010)

: M/T, %

	APR 1992	1992	APR 1992	2010	APR 1992	2010	APR 1992	2010	APR 1992	2050
	7.8	9417	4.5	20,810	3.7	17,970	5.7	25,540	2.4	37,340
	16.8	982	3.4	1,800	2.5	1,530	4.5	2,150	2.1	3,260
	6.5	3,501	6.0	9,980	3.9	7,000	6.6	1,098	2.6	15,410
	8.0	5,390	5.5	14,230	4.0	10,920	6.3	16,310	3.9	49,020
( )	19,290		5.1	47,000	3.7	37,000	6.0	55,000	3.0	105,000
( )	13,900		4.9	33,000	3.8	27,000	5.8	39,000	2.4	56,000

: < -1>

: APR

1992 2010 ( )  
2010 3,700 M/T (1992  
5.1%), 5,500  
M/T (1992 6.0%)  
2010 4,700 M/T . 2050  
1 500 M/T (1992 3.0%)  
1995 2,800 M/T 3.7 가  
, 2010 3,300 M/T, 2050 5,600 M/T  
.  
1995 10 2,460 M/T ,

88% , 10 가  
( < -2> ).

< -2> 10

	1984	1989	1995	2000	1984/ 1989	1990/ 1995	1984 1995	1995 2000
	3,826	7,294	17,582	22,500	13.8	18.5	14.9	5.1
	510	1,005	1,609	2,400	14.5	9.7	11.0	8.0
	1,199	1,359	1,381	1,400	2.5	0.3	1.3	0.0
	668	822	990	1,220	4.2	5.5	3.7	4.0
	478	629	812	1,000	5.6	3.9	4.9	4.0
	331	521	719	875	9.5	3.7	7.3	4.0
	112	260	464	680	18.4	9.7	13.8	8.0
	326	369	413	500	2.5	5.6	2.2	4.0
	117	163	322	475	6.8	13.6	9.6	8.0
	245	244	284	300	-0.1	-3.8	1.3	0.0
( )	3,986	5,372	6,995	8,850	6.2	4.8	5.2	4.8
	7,812	12,666	24,577	31,350	10.1	13.5	11.0	5.0
	2,312	2,463	3,139	3,640	1.2	2.8	2.7	3.0
	10,124	15,129	27,715	34,990	8.4	12.1	9.6	4.8

: < -1> .

72.4% ( 63.4% ),  
가  
1984 1989 13.8%  
가 1995 1,760 M/ T 18.5% 가  
9 가 700 M/ T ,  
1984 89 ,  
1990 95 가  
가 1984 89 6.2%, 1990 1995 4.8%

1995  
 , , ,  
3.7 5.6% 가 1990 1995  
가 가  
.

養殖水產物	消費習慣	需要 分析
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 1984 8 6 16-80

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