

*

†

‡

¶

21 COE 2003 2006

3

2003 2006

JEL : R13、 I32 D63

キーワード:

*

† 945-1393 4730

0257-24-8509

e-mail: yamane@econ.nsu.ac.jp

‡ 560-0043 1-7

e-mail: hgp011ys@mail2.econ.osaka-u.ac.jp

¶ 560-0043 1-7

06-6850-5223() 06-6850-5274

e-mail: tsutsui@econ.osaka-u.ac.jp

1.

1

2007 7

2

3

4

COE 2003

(Frey and Stutzer 2005)

5

1

(2006) 1998

2

3

Lowenstein 2007

4

5

1970

Easterlin (1974)

van Praag (1971)

1997

1990

11

Economic Journal 107

2000

Journal of Happiness Studies

Frey and Stutzer (2002 a,b), Kahneman et al. (1999), Bruni and

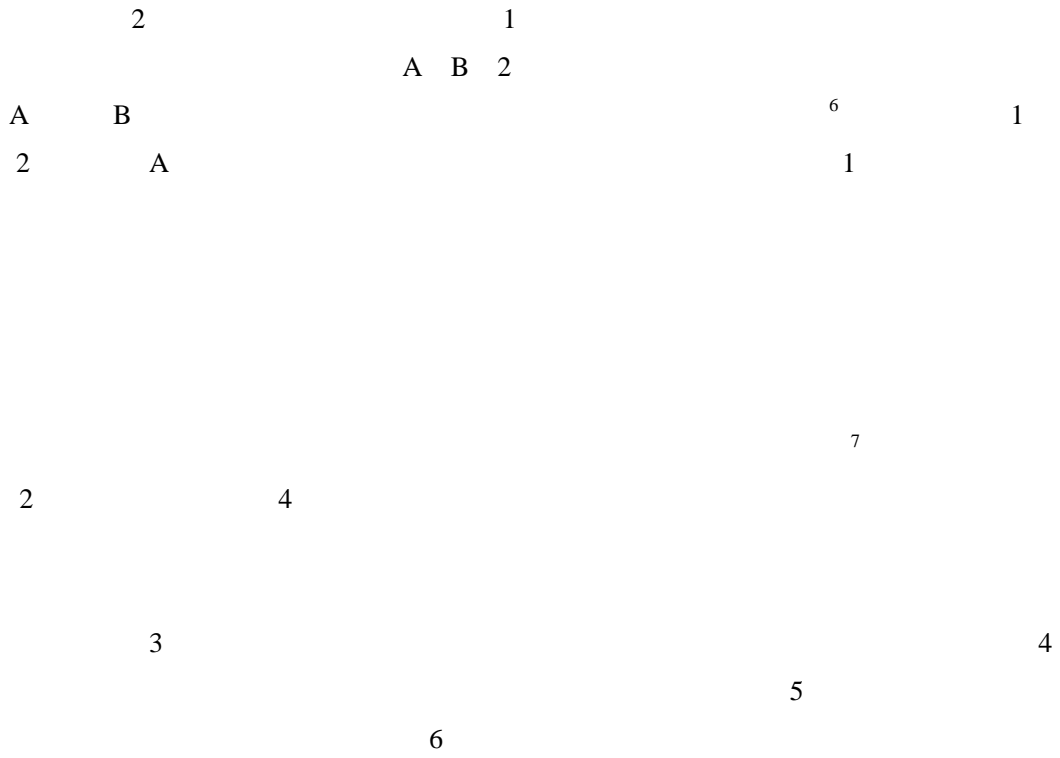
Porta(2005)

Ohtake and Tomioka (2004)

(2005) Tsutsui et al. (2007) Lee and Ono (2007)

(2007)

(Frey and Stutzer 2002a,b)



2.

COE

2.1



2003

3

0.54

0.58

⁹

1

2

174

150

100

1.6

0.1

0.9

0.66

3

3.1

⁹ 2004

0.25

0.37

Miller 1981 ¹⁰

47

₄₇C₂=1081

¹¹

2

RD_j

$$Y_i = \mu + \sum v_j RD_j + \varepsilon_i \quad (1)$$

v_j

μ

v_j

v_j

$$H_i = \alpha + \sum \delta_j RD_j + \varepsilon_i \quad (2)$$

δ_j

0

10

0

1

1

2

(2)

H^*

H^*

0

10

H

3

0

1

2

¹⁰

4

2

2

4

¹¹

Tukey-Kramer

Bonferroni

Scheffe

Games-Howell

SPSS

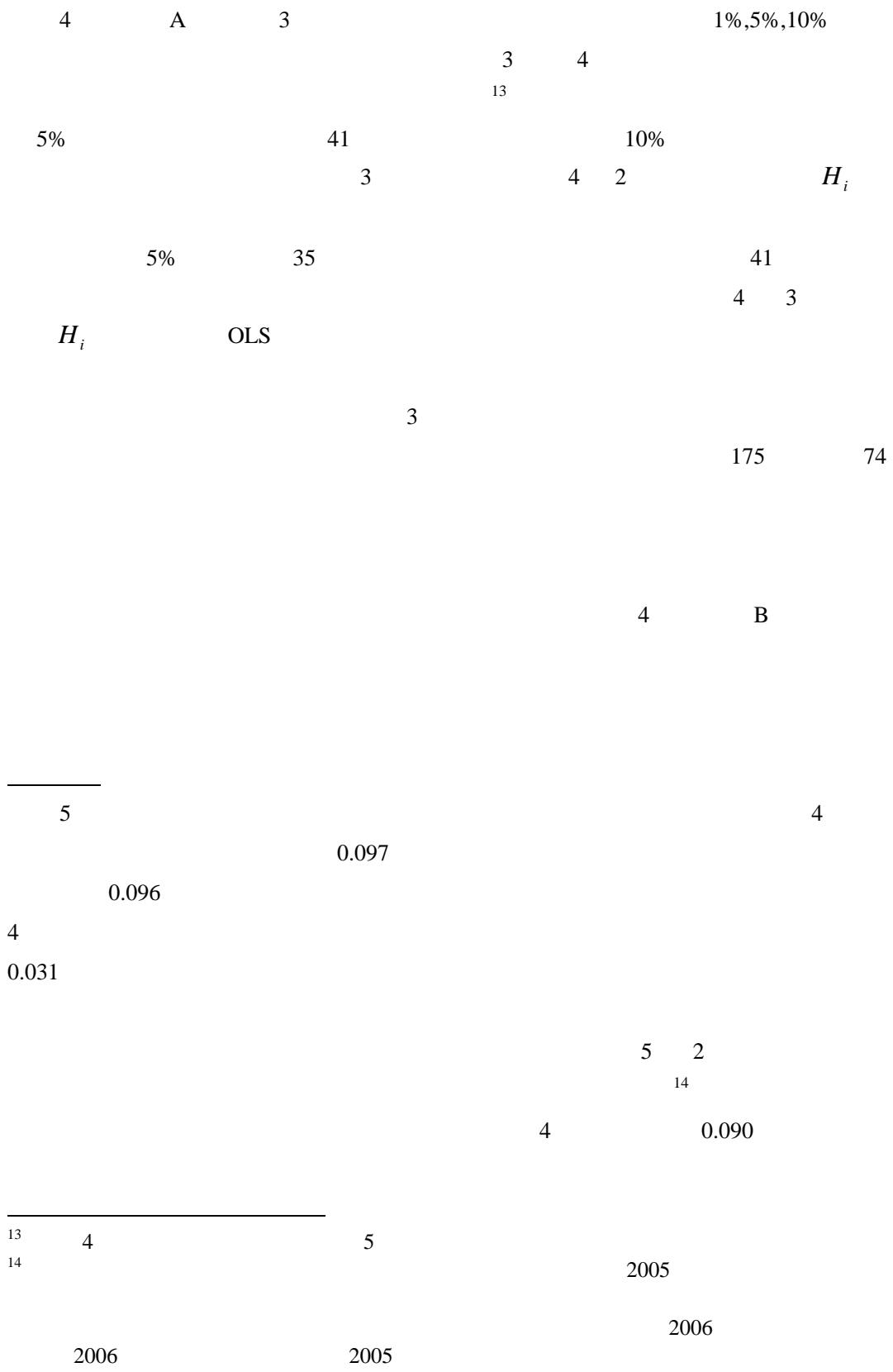
3.2

95% 4
7
6 1.3 4 1.2
37 1.4
5 95% 5
6
4 5
15

7 8
1 1
2 5%
7
8
12 7 8 7
2 1% 5% 10% 1081
5% 136 2 1
65 2 2

3 4 3

12



3.3

3

4.

4.1

i H_i X, Y, Z 3

$$H_i = H_i(X_i, Y_i, Z_j) \quad (3)$$

Y X i
 Z i j

Z

RD

X_i

15

15

$$Y_i = \mu + \lambda X_i + \sum v_j RD_j + \varepsilon_i \quad (4)$$

$$\tilde{Y}_i \equiv Y_i - \hat{v}_k$$

$$H_i = \alpha + \beta \tilde{Y}_i + \gamma X_i + \sum \delta_j RD_j + \varepsilon_i \quad (5)$$

$$\tilde{H}_i \equiv \hat{\alpha} + \hat{\beta} \tilde{Y}_i + \hat{\gamma} \bar{X} + \hat{\delta}_k + \hat{\varepsilon}_i \quad (6)$$

$$\hat{\varepsilon}_i \equiv H_i - \hat{H}_i \quad (5)$$

(5)

(6)

(6)

H_i^*

$$\tilde{H}_i = \frac{2}{k} \tilde{H}_i \bar{X} \bar{Y} + \tilde{H}_i \quad (6)$$

4.2

X X

Y X Y 1

4.3

(6)

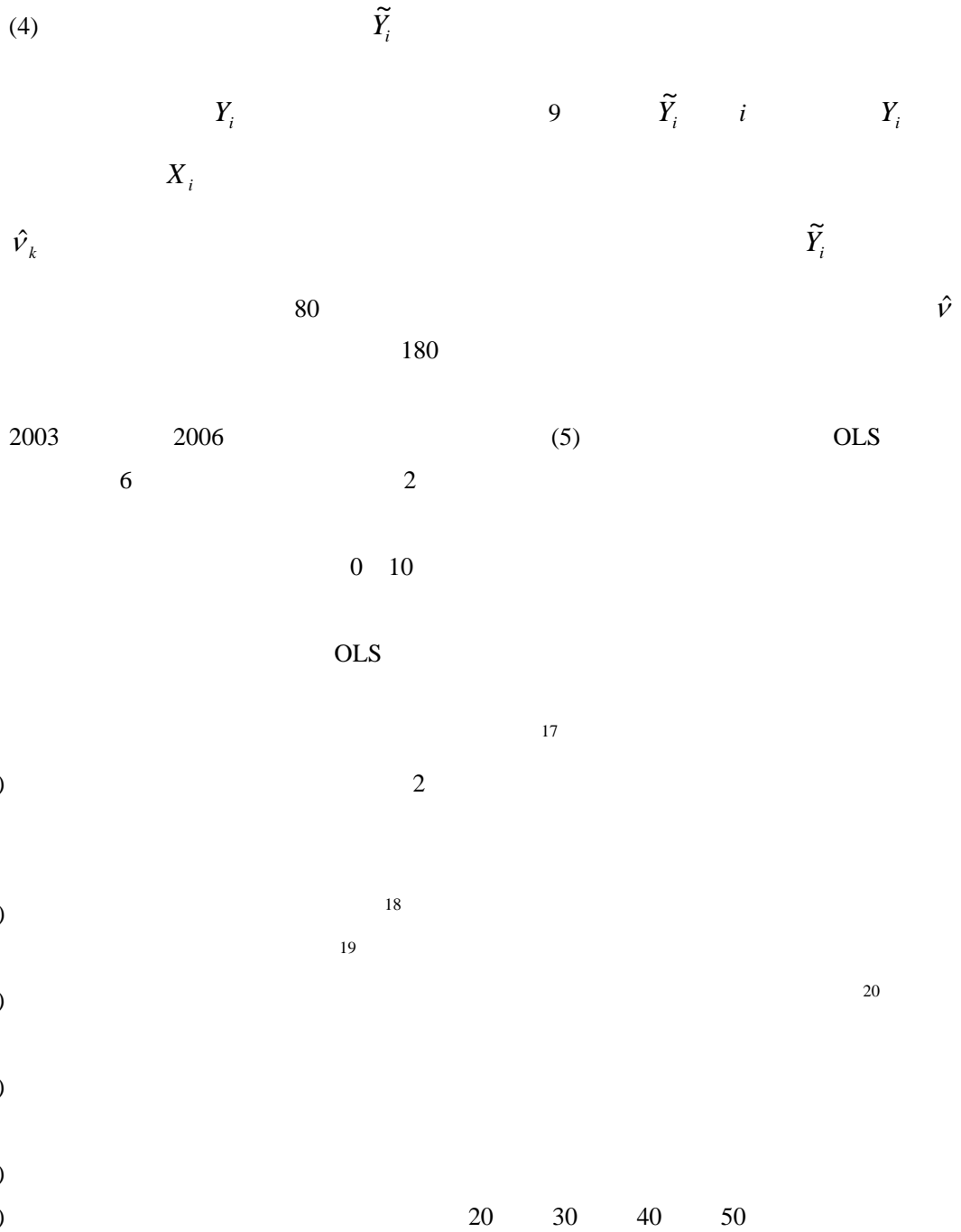
i Y_i X_i RD_j (5)

OLS 6 1 5%

30 16

5% 40

¹⁶ 10% 5



17

18

19 (2005) 2003

20 and Cable-Nenstedt (1985)

Inglehart (1990), White (1992), Hellevik (2003)

Tsang *et al.* (2003), Glenn and Weaver (1981), Holland-Benin (2004)

7)

8)

9)

10)

11)

12)

13)

	(6)	\tilde{H}_i	10
10	5.6	6.5	95%

4.4.

2	A	3	4	\tilde{H}_i	1081
		5%		OLS	
	4				
65					

4	C	(5)	
OLS			
5%			
OLS	16	4	A
		35	
			1%
10%			

24 41 36 5% 2003 2006 41
 136 2 A 1
 5% OLS 2004 3
 10% 20% 30
 30%
 2 B 2003 2004 9 2005 2006 1
 4
 OLS 2003 2004
 7 10 2005 2006
 4

 4 A 2003 2005
 5%
 2004 2006 24 4 32 4
 2003 2006 154 79
 2003 2004 5%
 40 74 5 13 11 15 2003
 4
 4 D
 24, 19, 32, 20

OLS

1, 9, 0, 0

0

2004

5

2006

0.088

0.111

0.078

0.106

0.031, 0.030, 0.030, 0.033

2005

0.025

2003

0.035

4

3

2003

2006

4

7

4

5.3

2006

2003

2006

4

2002

2003

2006

4

Stutzer 2002a,b
1960 1990 30
Stutzer 2002a,b, Frank 2005

Frey and

6

Layard 2005, Frey and
Easterlin 1974)

adaptation

Franak 2005 ²²

Duesenbery 1948

and Kahneman 1991, Kahneman and Tversky 1979
2.5
2003 2006 Tversky

1 1

6.

21 COE 2003 2006

(

²²

)

3

2003

2006

4

14086

40

0

10

- Bruni, Luigino and Peir L. Porta (2005) *Economics and Happiness Framing the analysis*, Oxford UP Oxford.
- Dusenberry, J.S.(1948) Income-Consumption Relation and their Implications, Income, Employment, and Public Policy: Essays in Honor of Alvin H.Hansen., W.W.Norton & Co.,Inc.,54-81
- Easterlin, R. (1974) "Does Economic Growth Improve Human Lot? Some Empirical Evidence," in P. A. Davis and M. w. Reder eds. *Natio and Households in Economic growth: Essays in Hornor of Moses Abramowitz*, Academic Press: London.
- Frank, Robert H. (2005) "Does Absolute Income Matter?" Chapter 2 of Bruni, Luigino and Peir L. Porta (eds.) *Economics and Happiness Framing the analysis*, Oxford UP Oxford.
- Frey, Bruno S. and Alois Stutzer (2002a) "What can Economists Learn from Happiness Research?" *Journal of Economic Literature*, 40 (2), 402-435.
- Frey, Bruno S. and Alois Stutzer (2002b) *Happiness and Economics*, Princeton UP,
- Frey, Bruno S. and Alois Stutzer (2005) "Testing Theories of Happiness," Chapter 4 of Bruni, Luigino and Peir L. Porta (eds.) *Economics and Happiness Framing the analysis*, Oxford UP Oxford.
- Glenn, N. D. and C. N. Weaver (1981) "The Contribution of Marital Happiness to Global Happiness," *Journal of Marriage and Family* 43, 161-168.
- Greene, William H. (2000) *Econometric Analysis*, Prentice-Hall, Inc.
- Hellevik, O. (2003) "Economy, Values and Happiness in Norway," *Journal of Happiness Studies* 4, 243-283.
- Holland-Benin, M. and B. Cable-Nenstedt (1985) "Happiness in Single- and Dual-earner Families; The Effects of Marital Happiness, Job Satisfaction, and Life Cycle," *Journal of Marriage and Family* 47, 975-984.
- Inglehart, R. F. (1990) *Culture Shift in Advanced Industrial Society*, Princeton, N.J., Princeton University Press
- Kahneman, Daniel, Ed Diener, and Norbert Schwarz, ed. (1999), *Well-Being*, Russell Sage Foundation: New York.
- Kahneman, Daniel and Amon Tversky (1979) "Prospect theory: an analysis of decision under risk," *Econometrica* 47 (2), 263-292.
- Layard, Richard (2005) *Happiness: Lessons from a New Science*, Penguin Books: New York.
- Lee, Kristen Schultz and Hiroshi Ono (2007) "Specialization and Happiness: A U.S.-Japan Comparison," 2007
- Lowenstein, George (2007) *Exotic Preferences: Behavioal Econoics and Human Motivation*,

Oxford UP: Oxford.

- Miller, R. G. Jr., 1981. *Simultaneous Statistical Inference*. Springer-Verlag, New York.
- Ohtake, Fumio and Jun Tomioka, (2004) "Who Supports Redistribution?" *The Japanese Economic Review* 55 (4), 333-354.
- Tsang, L. L. W., C. D. H. Harvey, K. A. Duncan, and R. Sommer (2003) "The Effects of Children, Dual Earner Status, Sex Role Traditionalism, and Marital Structure on Marital Happiness over Time," *Journal of Family and Economic Issues* 24 (1), 5-26.
- Tsutsui, Yoshiro, Miles Kimball, and Fumio Ohtake (2007) "Koizumi Carried the Day: Did the Japanese Election Results Make People Happy and Unhappy?" ISER Discussion Paper No. 695.
- Tversky, Amos and Daniel Kahneman (1991) "Loss Aversion in Riskless Choice: A Reference-Dependent Model," *The Quarterly Journal of Economics*, Vol. 106, No. 4, pp. 1039-1061.
- van Praag, Bernard M. S. (1971) "The Welfare Function of Income in Belgium: An Empirical Investigation," *European Economic Review*, 2, 337-369.
- White, J. M. (1992) "Marital Status and Well-Being in Canada," *Journal of Family Issues* 13, 390-409.
- (2004) 528 59-68
- (2006)
- (2007) ESRI Discussion PaperNo.181
- 1998
- (2005) ISER Discussion Paper No.
- 630
- 2008

	北海道	東北	関東	甲信越	北陸	東海	近畿	中国	四国	九州	合計
2003 年度	206	311	1316	175	119	504	709	262	150	472	4224
2004 年度	135	220	901	123	90	359	516	193	109	341	2987
2005 年度	179	277	1175	160	113	448	620	245	127	419	3763
2006 年度	139	222	985	143	99	359	526	205	100	334	3112

2

A

	プールデータ			年別データ				4年間の平均
	1%	5%	10%	2003	2004	2005	2006	
一人あたり所得	106	136	154	41	24	41	36	35.5
幸福度 H	41	65	89	1	0	0	0	0.25
調整済幸福度 (6)式;順序プロビット	0	0	0	0	0	0	0	0
調整済幸福度 (6)式;OLS	1	4	8	0	3	0	0	0.75

2003 2006

5%

1 COE

2

3

4

3

(6)

4

(6)

OLS

OLS

B

	2003			2004			2005			2006		
	有意水準			有意水準			有意水準			有意水準		
	10%	20%	30%	10%	20%	30%	10%	20%	30%	10%	20%	30%
幸福度 H	3	7	9	0	2	9	0	0	1	1	1	4
調整済幸福度 (6)式;順序プロビット	0	0	0	0	0	0	0	0	0	0	0	0
調整済幸福度 (6)式;OLS	0	2	7	3	4	10	0	0	0	0	0	0

A

10

30%

変数	従属変数					
	所得		幸福度 (順序プロビット推定)		幸福度 (OLS 推定)	
	推定値	p-値	推定値	p-値	推定値	p-値
定数	129.606	[.000]	2.311	[.000]	5.520	[.000]
北海道	75.1444	[.000]	0.374	[.003]	0.653	[.004]
青森	39.6811	[.048]	0.192	[.191]	0.338	[.200]
岩手	59.3757	[.002]	0.269	[.055]	0.465	[.064]
宮城	79.4164	[.000]	0.375	[.004]	0.652	[.006]
秋田	113.21	[.000]	0.310	[.057]	0.539	[.065]
山形	18.2931	[.491]	0.295	[.091]	0.514	[.102]
福島	35.4254	[.046]	0.291	[.033]	0.506	[.039]
茨城	87.3142	[.000]	0.354	[.007]	0.620	[.009]
栃木	83.7076	[.000]	0.317	[.015]	0.555	[.017]
群馬	73.6766	[.000]	0.406	[.004]	0.718	[.005]
埼玉	101.552	[.000]	0.497	[.000]	0.878	[.000]
千葉	107.786	[.000]	0.533	[.000]	0.930	[.000]
東京	160.121	[.000]	0.609	[.000]	1.069	[.000]
神奈川	111.879	[.000]	0.555	[.000]	0.971	[.000]
新潟	61.6463	[.000]	0.385	[.003]	0.669	[.005]
富山	69.8465	[.000]	0.479	[.001]	0.851	[.001]
石川	84.2349	[.000]	0.188	[.198]	0.331	[.208]
福井	150.374	[.000]	0.343	[.026]	0.597	[.030]
山梨	48.9611	[.118]	0.238	[.233]	0.419	[.242]
長野	79.563	[.000]	0.336	[.013]	0.588	[.015]
岐阜	83.0573	[.000]	0.528	[.000]	0.929	[.000]
静岡	92.1138	[.000]	0.425	[.001]	0.735	[.002]
愛知	83.6407	[.000]	0.363	[.003]	0.636	[.004]
三重	100.188	[.000]	0.523	[.000]	0.917	[.000]
滋賀	58.6401	[.007]	0.678	[.000]	1.196	[.000]
京都	87.7918	[.000]	0.473	[.000]	0.823	[.000]
大阪	82.2337	[.000]	0.516	[.000]	0.902	[.000]
兵庫	106.972	[.000]	0.743	[.000]	1.309	[.000]
奈良	89.5082	[.000]	0.501	[.000]	0.883	[.001]
和歌山	56.9985	[.005]	0.534	[.000]	0.935	[.000]

鳥取	70.472	[.001]	0.063	[.675]	0.082	[.758]
島根	32.7346	[.086]	0.216	[.122]	0.377	[.132]
岡山	94.0662	[.000]	0.685	[.000]	1.205	[.000]
広島	95.2461	[.000]	0.416	[.001]	0.729	[.002]
山口	49.3328	[.022]	0.538	[.000]	0.945	[.001]
徳島	45.8426	[.057]		基準県		基準県
香川	66.7408	[.000]	0.266	[.057]	0.454	[.070]
愛媛	37.1335	[.046]	0.212	[.132]	0.358	[.157]
高知	54.0964	[.054]	0.115	[.546]	0.191	[.575]
福岡	93.8151	[.000]	0.612	[.000]	1.080	[.000]
佐賀	75.3169	[.009]	0.624	[.001]	1.101	[.001]
長崎	123.348	[.000]	0.428	[.002]	0.752	[.002]
熊本	93.1922	[.000]	0.717	[.000]	1.262	[.000]
大分	46.4908	[.011]	0.350	[.012]	0.605	[.015]
宮崎	60.4465	[.004]	0.422	[.005]	0.750	[.006]
鹿児島	57.2192	[.002]	0.404	[.004]	0.700	[.005]
沖縄		基準県	0.498	[.000]	0.882	[.000]
第2の閾値			0.402	[.000]		
第3の閾値			0.712	[.000]		
第4の閾値			1.267	[.000]		
第5の閾値			1.638	[.000]		
第6の閾値			2.426	[.000]		
第7の閾値			2.811	[.000]		
第8の閾値			3.373	[.000]		
第9の閾値			4.042	[.000]		
第10の閾値			4.486	[.000]		
決定係数	0.037		0.018		0.017	
観測数	11521		13938		13938	

(1) (2)

OLS

1 0

2

A

	プールデータ			年別データ				基準県
	1%	5%	10%	2003	2004	2005	2006	
一人あたり所得; (1)式; OLS	36	41	44	24	4	32	4	
幸福度 H;(2)式; 順序プロビット	30	35	39	5	13	11	15	最低県
幸福度 H;(2)式; OLS	30	35	39	5	12	11	14	

B

一人あたり所得; (1)式; OLS	7	14	22	0	4	4	0	メジアン付近で 統一; 山口県
幸福度 H;(2)式; 順序プロビット	6	11	15	0	4	9	0	
幸福度 H;(2)式; OLS	6	11	14	0	3	8	0	

A

C

幸福度調整 (6)式; 順序プロビット	0	0	0	2	1	0	0	最低県
幸福度調整 (6)式; OLS	1	16	24	13	10	0	0	
(6) OLS								

D

				()	()			
一人あたり所得; (1)式; OLS	36	41	44	24	19	32	20	
幸福度 H;(2)式; 順序プロビット	30	35	39	14	13	11	15	所得; 沖縄県 幸福度; 徳島県
幸福度 H;(2)式; OLS	30	35	39	13	12	11	14	
幸福度調整 (6)式; 順序プロビット	0	0	0	0	0	0	0	
幸福度調整 (6)式; OLS	0	0	1	1	9	0	0	

A

4

	プールデータ	年別データ				4年間の平均
		2003	2004	2005	2006	
一人あたり所得	0.097	0.088	0.087	0.097	0.111	0.096
一人あたり実質所得	0.091	0.078	0.082	0.093	0.106	0.090
幸福度 H	0.031	0.031	0.030	0.030	0.033	0.031
幸福度調整 (6)式; 順序プロビット	0.020	0.030	0.031	0.025	0.031	0.029
幸福度調整 (6)式; OLS	0.021	0.035	0.032	0.028	0.030	0.031

2003 2006

2

2006

2005

4

変数	(4)式 (従属変数:所得)		(5)式 (順序プロビット推定)		(5)式 (OLS 推定)	
	推定値	p-値	推定値	p-値	推定値	p-値
定数	219.894	[.000]	1.924	[.000]	4.596	[.000]
男性D	-12.975	[.000]	-0.055	[.036]	-0.088	[.041]
未婚D	-6.911	[.172]	-0.160	[.000]	-0.252	[.000]
死別D	-41.729	[.000]	-0.233	[.000]	-0.382	[.000]
単身世帯D	75.945	[.000]	-0.196	[.001]	-0.335	[.001]
世帯人数	-37.814	[.000]	-0.003	[.792]	-0.004	[.818]
健康	4.562	[.000]	0.070	[.000]	0.113	[.000]
20代D	-7.896	[.289]	0.356	[.000]	0.565	[.000]
30代D	-18.227	[.001]	0.322	[.000]	0.505	[.000]
40代D	6.080	[.227]	0.148	[.000]	0.230	[.000]
50代D	38.707	[.000]	0.057	[.098]	0.087	[.125]
子無しD	10.624	[.040]	-0.320	[.000]	-0.521	[.000]
事務D	-59.812	[.000]	-0.079	[.085]	-0.123	[.104]
販売D	-93.345	[.000]	-0.177	[.002]	-0.292	[.002]
専門D	-40.627	[.000]	0.016	[.733]	0.032	[.677]
サービスD	-91.432	[.000]	-0.127	[.013]	-0.207	[.014]
現業D	-88.002	[.000]	-0.057	[.275]	-0.088	[.308]
農林D	-72.044	[.000]	-0.229	[.006]	-0.364	[.009]
パートD	-92.901	[.000]	-0.124	[.017]	-0.195	[.022]
主婦D	-89.535	[.000]	0.095	[.045]	0.155	[.046]
学生D	16.086	[.308]	0.015	[.908]	0.031	[.884]
無職D	-132.564	[.000]	0.034	[.562]	0.046	[.626]
高校D	32.262	[.000]	0.157	[.000]	0.264	[.000]
短大・専門D	41.938	[.000]	0.286	[.000]	0.475	[.000]
大学D	62.438	[.000]	0.232	[.000]	0.387	[.000]
大学院D	84.385	[.000]	0.312	[.001]	0.513	[.001]
所得			0.001	[.000]	0.002	[.000]
所得2			-0.000001	[.000]	-0.000001	[.000]
所得変化			0.027	[.000]	0.045	[.000]
所得予想			0.027	[.000]	0.044	[.000]
総資産			0.00002	[.000]	0.00004	[.000]
求職D	-27.104	[.000]	-0.273	[.000]	-0.459	[.000]
失業経験D	-34.206	[.000]	-0.122	[.000]	-0.207	[.000]
お金	-3.935	[.012]	-0.119	[.000]	-0.190	[.000]
利他性	11.323	[.000]	0.084	[.000]	0.138	[.000]
危険回避	0.129	[.072]	0.001	[.099]	0.001	[.110]
時間割引	2.602	[.018]	-0.008	[.325]	-0.012	[.382]
自信過剰	-0.613	[.681]	-0.011	[.336]	-0.016	[.412]
飲酒	3.271	[.005]	-0.003	[.773]	-0.003	[.846]
ギャンブル	1.401	[.212]	-0.057	[.000]	-0.092	[.000]
一戸建てD	68.774	[.000]	0.156	[.076]	0.276	[.056]
集合住宅D	60.317	[.000]	0.102	[.292]	0.189	[.232]
民間借家D	26.418	[.020]	0.036	[.696]	0.070	[.641]
社宅D	51.374	[.002]	0.325	[.012]	0.548	[.010]
公営借家D	6.026	[.649]	0.043	[.687]	0.085	[.623]

北海道	45.982	[.063]	0.474	[.049]	0.743	[.060]
青森	48.588	[.080]	0.300	[.245]	0.461	[.277]
岩手	63.357	[.019]	0.421	[.098]	0.649	[.121]
宮城	72.968	[.004]	0.519	[.035]	0.821	[.042]
秋田	88.584	[.004]	0.403	[.151]	0.613	[.185]
山形	41.648	[.191]	0.403	[.160]	0.609	[.198]
福島	47.406	[.075]	0.421	[.095]	0.665	[.109]
茨城	82.355	[.001]	0.415	[.092]	0.639	[.115]
栃木	73.769	[.004]	0.388	[.111]	0.611	[.128]
群馬	60.662	[.026]	0.403	[.114]	0.635	[.131]
埼玉	72.391	[.003]	0.462	[.053]	0.730	[.063]
千葉	78.151	[.002]	0.449	[.061]	0.697	[.078]
東京	119.739	[.000]	0.565	[.017]	0.885	[.024]
神奈川	89.011	[.000]	0.589	[.014]	0.926	[.019]
新潟	64.074	[.012]	0.419	[.088]	0.653	[.106]
富山	81.320	[.003]	0.480	[.059]	0.757	[.071]
石川	74.324	[.007]	0.181	[.487]	0.263	[.539]
福井	178.700	[.000]	0.561	[.038]	0.863	[.052]
山梨	37.902	[.293]		基準県		基準県
長野	59.576	[.022]	0.258	[.302]	0.388	[.345]
岐阜	69.022	[.008]	0.443	[.072]	0.691	[.089]
静岡	89.663	[.000]	0.383	[.117]	0.588	[.143]
愛知	78.323	[.001]	0.374	[.117]	0.580	[.140]
三重	93.870	[.000]	0.566	[.024]	0.895	[.031]
滋賀	47.048	[.108]	0.641	[.016]	1.016	[.021]
京都	59.905	[.017]	0.520	[.032]	0.809	[.043]
大阪	62.801	[.010]	0.528	[.026]	0.828	[.034]
兵庫	79.141	[.002]	0.693	[.005]	1.092	[.007]
奈良	43.011	[.119]	0.278	[.282]	0.425	[.318]
和歌山	46.537	[.095]	0.611	[.019]	0.967	[.024]
鳥取	74.930	[.010]	0.455	[.096]	0.709	[.116]
島根	31.256	[.251]	0.277	[.279]	0.426	[.312]
岡山	92.997	[.001]	0.562	[.038]	0.887	[.047]
広島	67.842	[.008]	0.416	[.091]	0.654	[.106]
山口	42.604	[.139]	0.653	[.014]	1.028	[.019]
徳島	27.869	[.360]	0.363	[.194]	0.576	[.211]
香川	56.219	[.034]	0.171	[.496]	0.240	[.563]
愛媛	32.061	[.228]	0.293	[.246]	0.446	[.283]
高知		基準県	0.160	[.589]	0.238	[.626]
福岡	70.170	[.005]	0.619	[.010]	0.975	[.014]
佐賀	77.406	[.022]	0.702	[.018]	1.096	[.024]
長崎	66.678	[.013]	0.533	[.037]	0.842	[.045]
熊本	65.911	[.026]	0.501	[.063]	0.793	[.074]
大分	46.062	[.086]	0.373	[.141]	0.565	[.175]
宮崎	43.837	[.120]	0.488	[.063]	0.776	[.073]
鹿児島	31.946	[.233]	0.477	[.058]	0.747	[.071]
沖縄	11.048	[.679]	0.643	[.011]	1.034	[.013]
第2の閾値			0.465	[.000]		
第3の閾値			0.780	[.000]		
第4の閾値			1.389	[.000]		

第5の閾値		1.784	[.000]
第6の閾値		2.607	[.000]
第7の閾値		3.046	[.000]
第8の閾値		3.685	[.000]
第9の閾値		4.426	[.000]
第10の閾値		4.906	[.000]
決定係数	0.277	0.174	0.169
観測数	10338	8642	8642

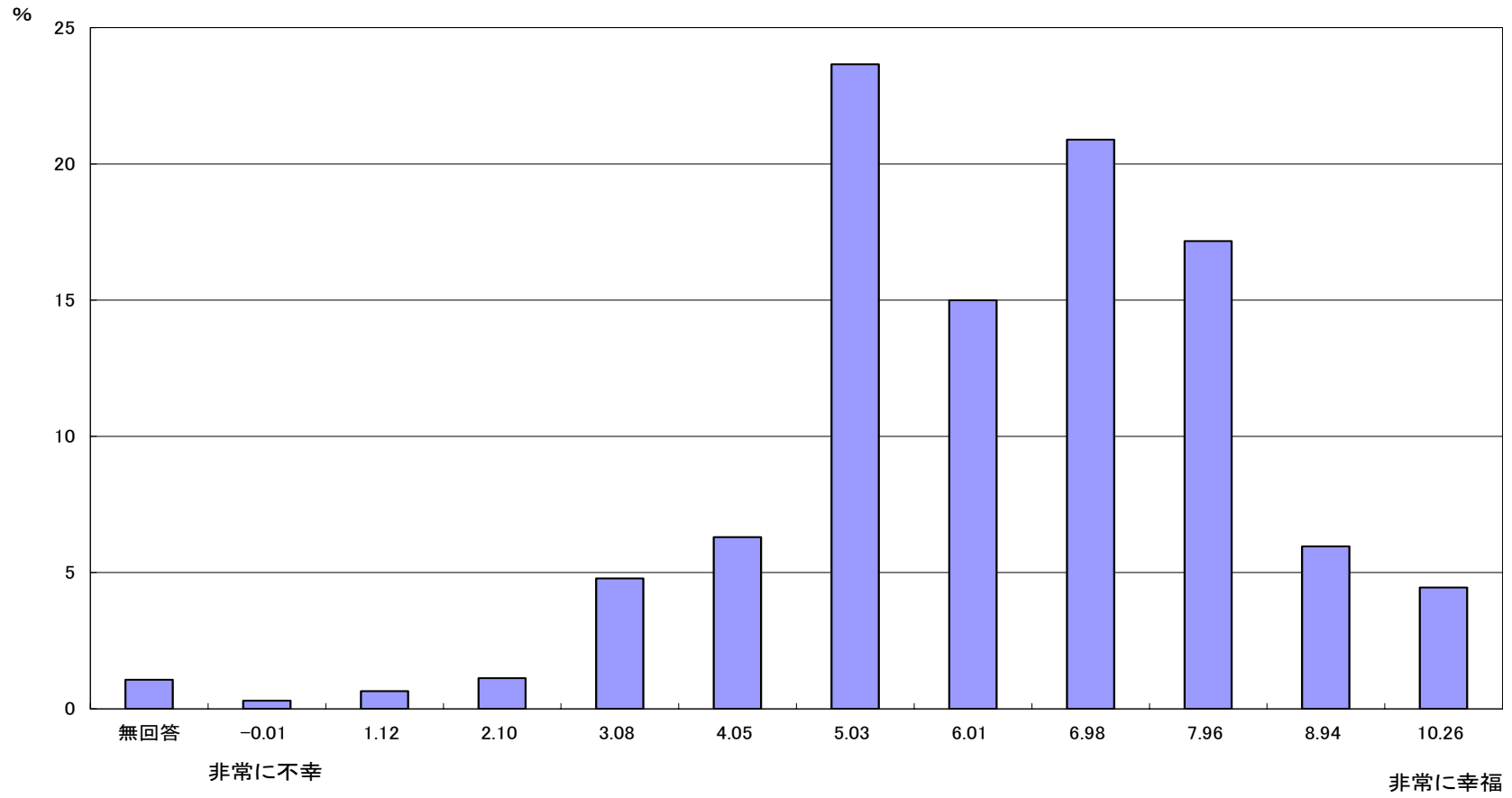
1 OLS . 4
 (4) 2
 1 \tilde{Y} (5) 3 OLS
 2

7 3

	多重比較	県ダミー回帰	ジニ係数
一人あたり所得			
幸福度			

1

2003 2006



2003

2006

21

COE

0 10

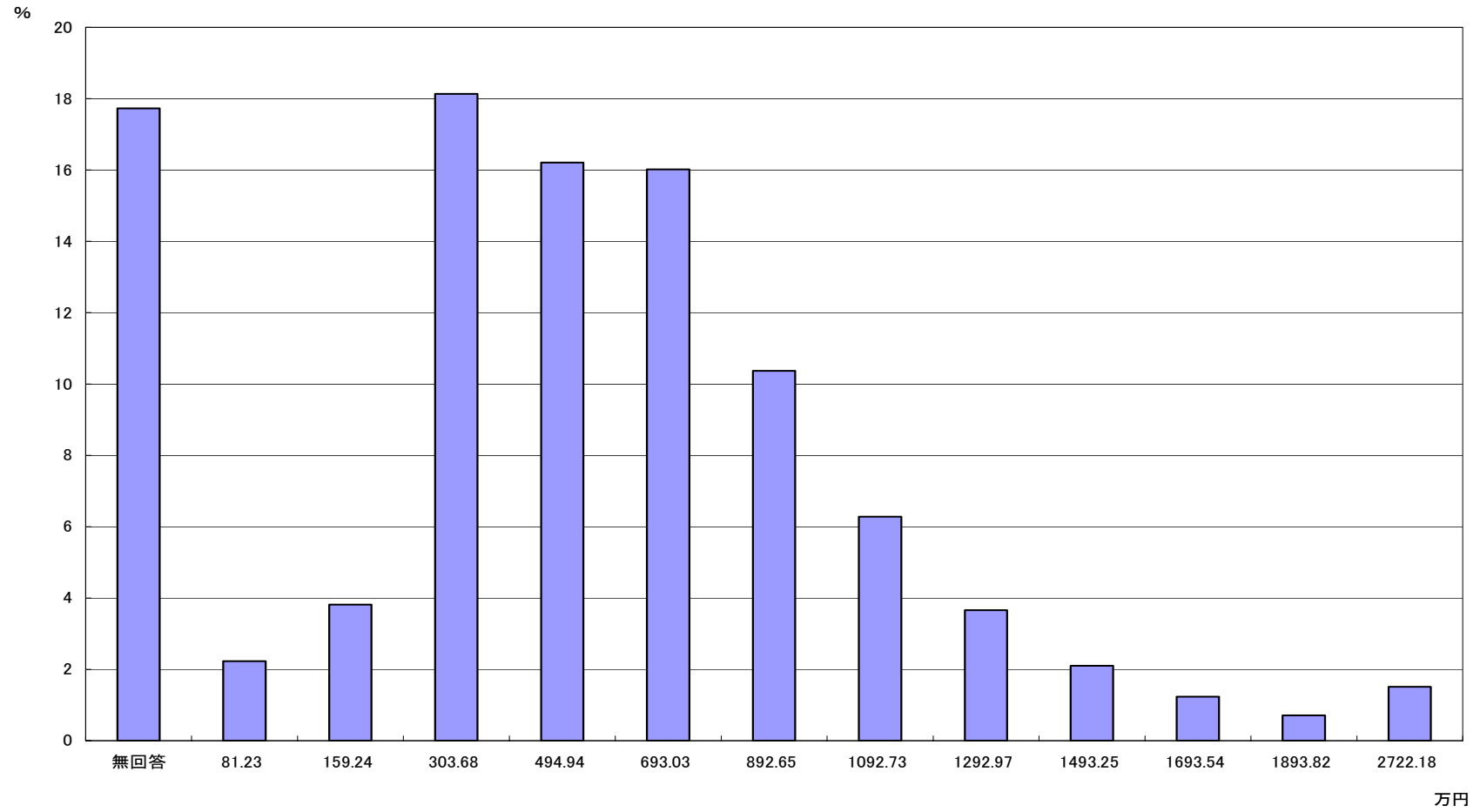
14086

10

0 10

2

2003 2006



万円

2003
12. 2000

2006

12

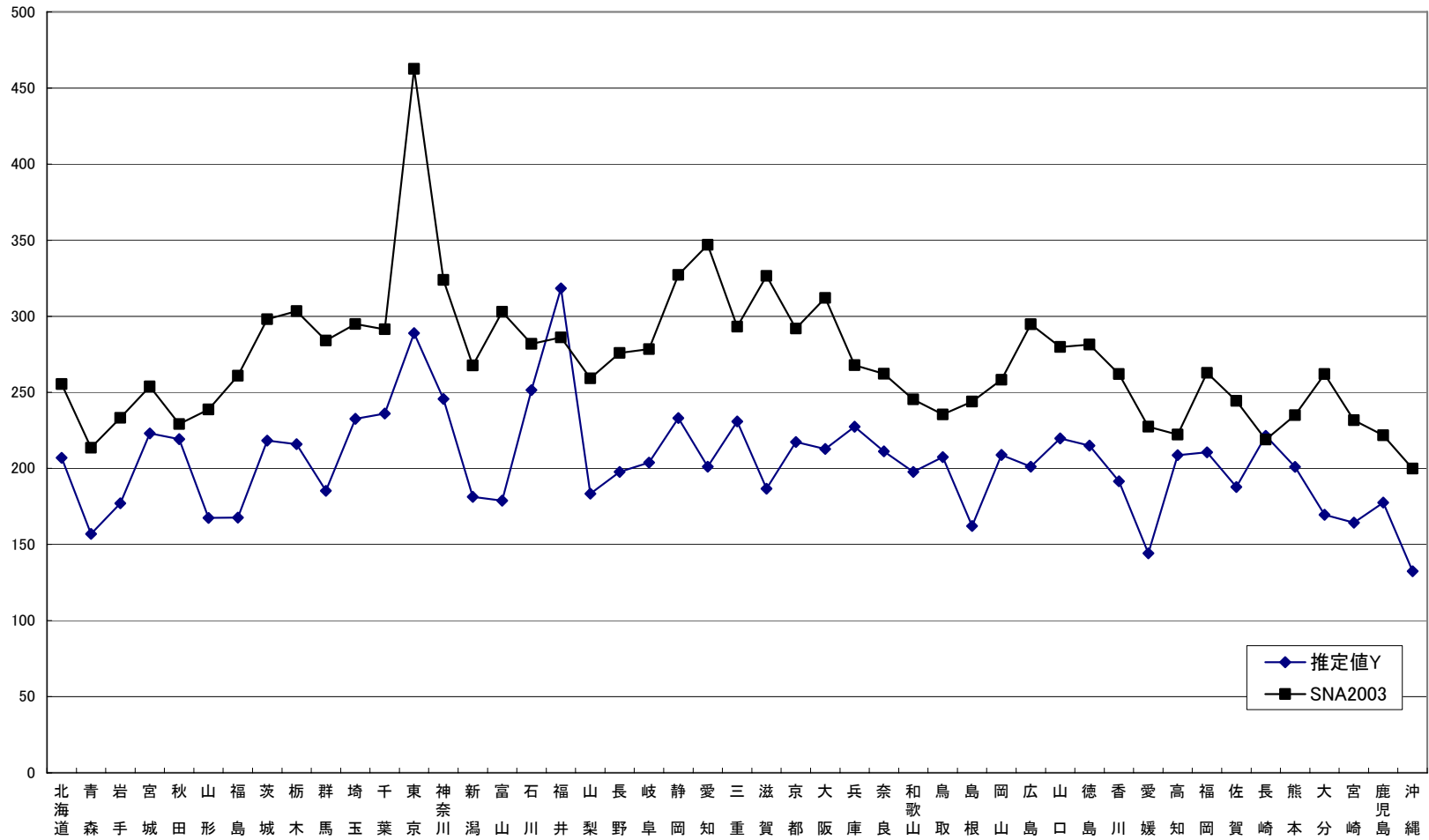
21 COE

14086

100
1 12

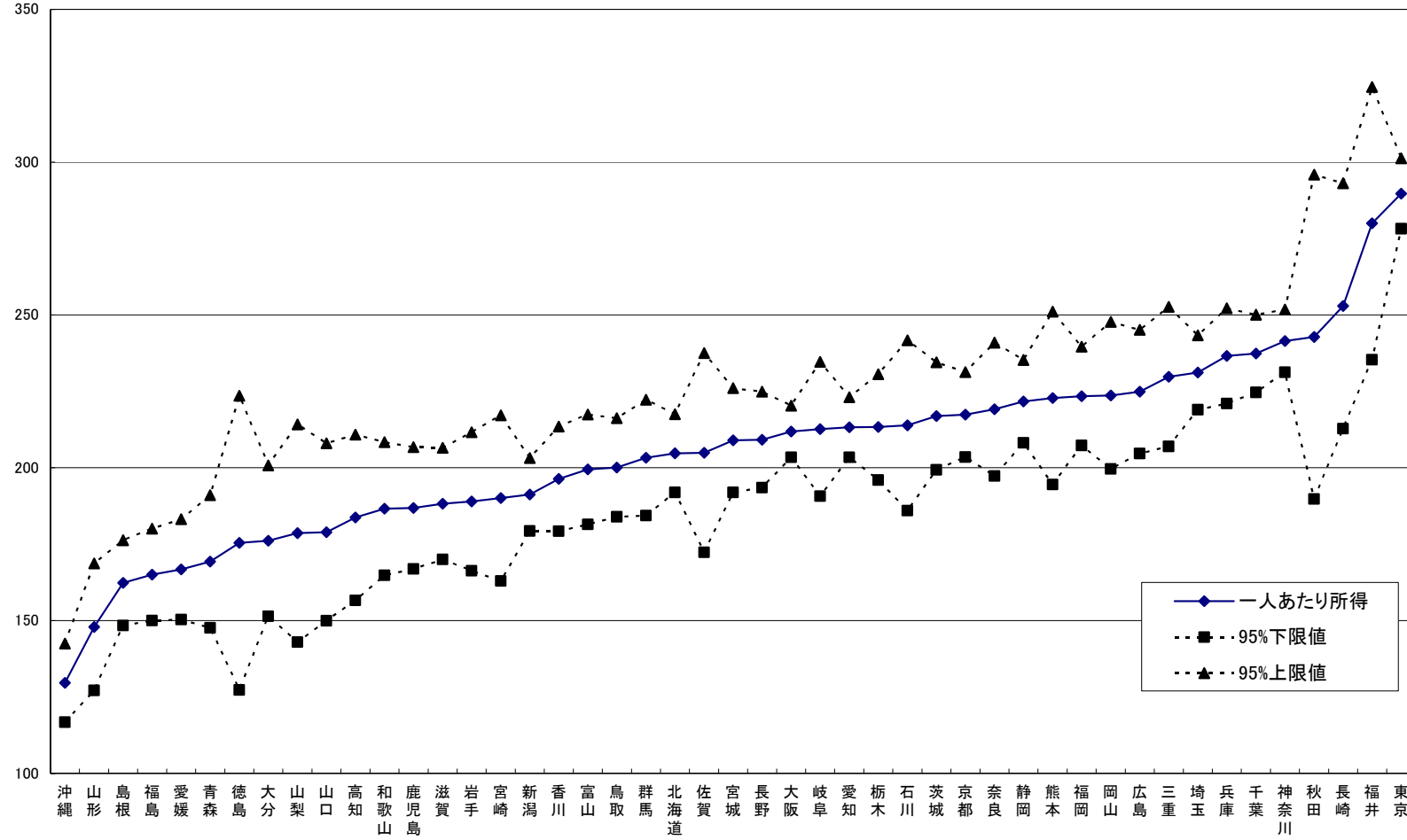
3

(単位万円)

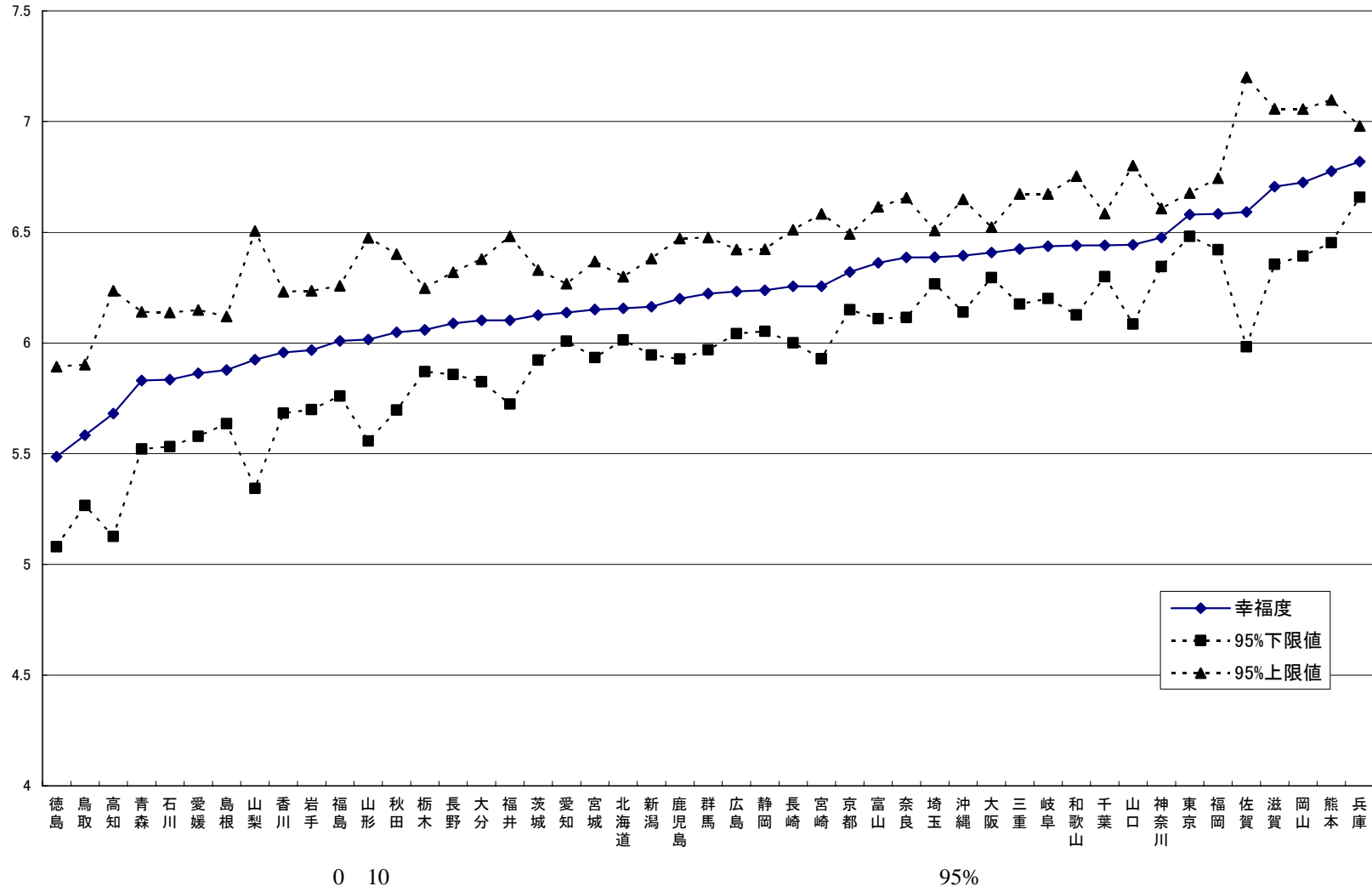


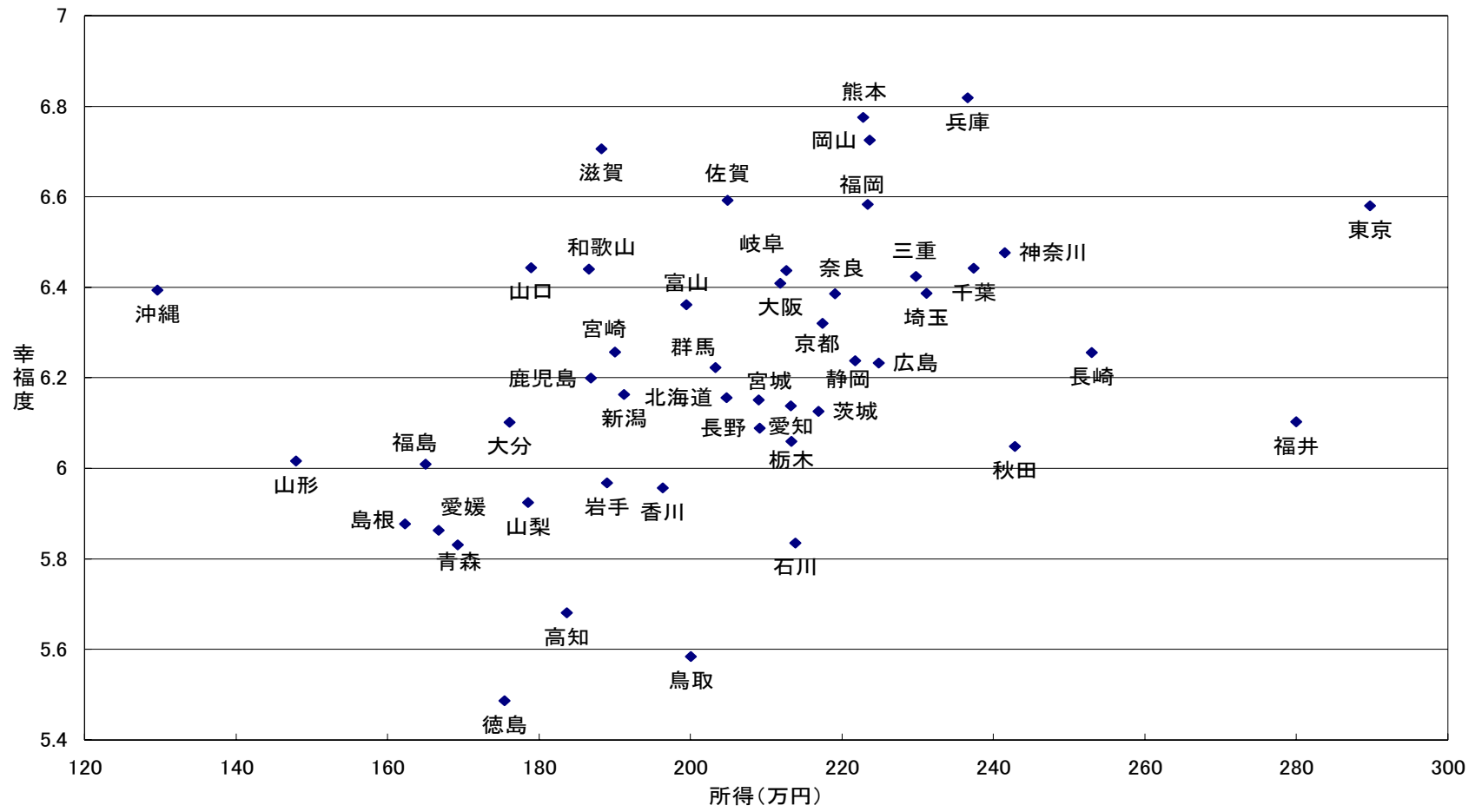
2003

(単位万円)



95%

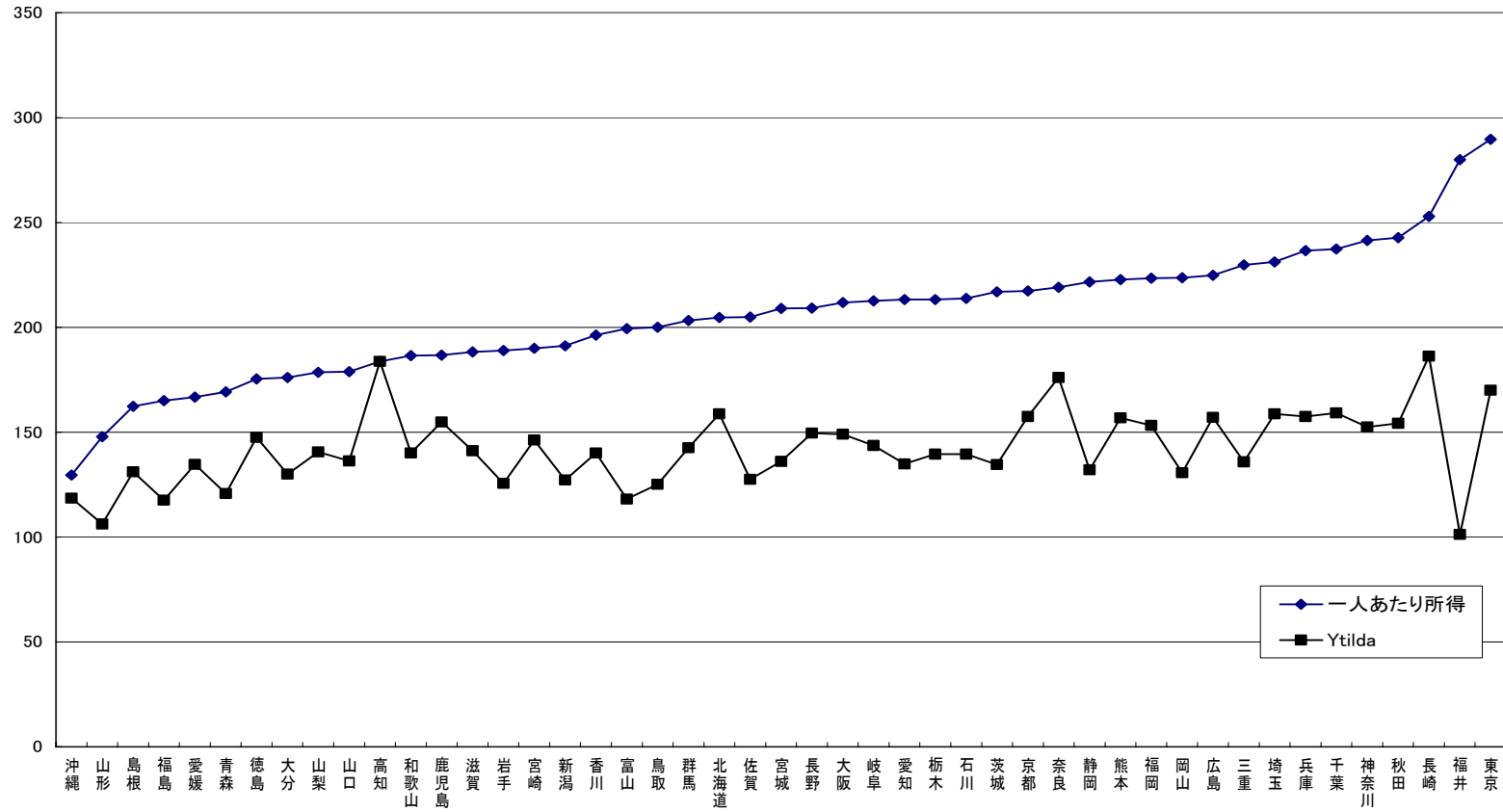




	北海道	青森	岩手	宮城	秋田	山形	福島	茨城	栃木	群馬	埼玉	千葉	東京	神奈川	新潟	富山	石川	福井	山梨	長野	岐阜	静岡	愛知	三重	滋賀	京都	大阪	兵庫	奈良	和歌山	鳥取	島根	岡山	広島	山口	徳島	香川	愛媛	高知	福岡	佐賀	長崎	熊本	大分	宮崎	鹿児島	沖縄								
北海道	*											*	*	*																																			*						
青森		*										*	*	*														*																								*			
岩手			*									*	*	*																																						*			
宮城				*								*	*	*																																						*			
秋田					*							*	*	*																																						*			
山形						*						*	*	*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
福島							*					*	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
茨城								*				*	*	*																																						*			
栃木									*			*	*	*																																						*			
群馬										*		*	*	*																																						*			
埼玉											*	*	*	*																																						*			
千葉												*	*	*	*																																					*			
東京												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
神奈川												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*			
新潟											*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
富山												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
石川												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
福井												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
山梨												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
長野												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
岐阜												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
静岡												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
愛知												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
三重												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
滋賀												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
京都												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
大阪												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
兵庫												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
奈良												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
和歌山												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
鳥取												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
島根												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
岡山												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
広島												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
山口												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
徳島												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
香川												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
愛媛												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
高知												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
福岡												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
佐賀												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
長崎												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
熊本												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
大分												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
宮崎												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
鹿児島												*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
沖縄	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

1 1 2 5%

(単位万円)



0 10

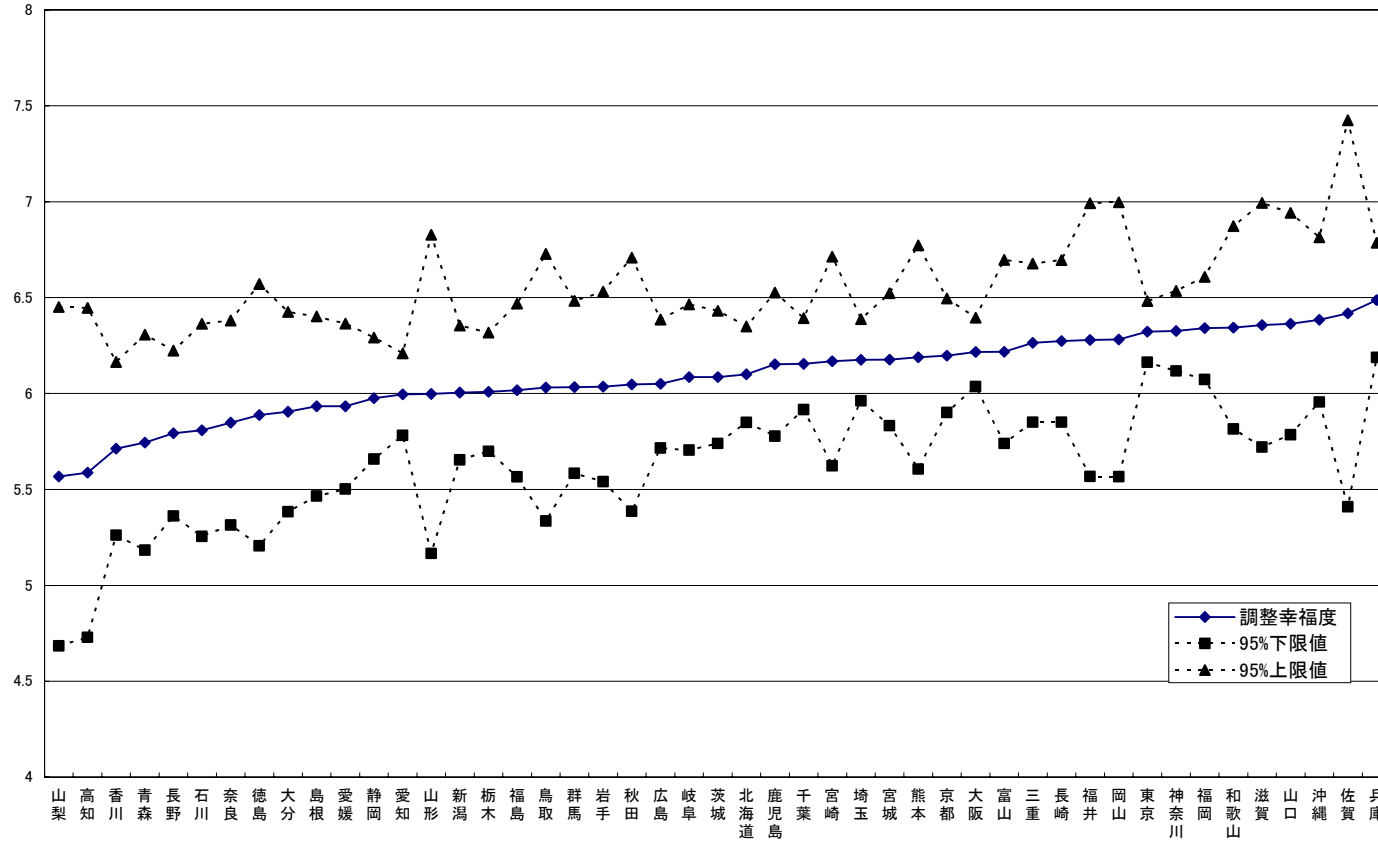
0 10

95%

95%

10

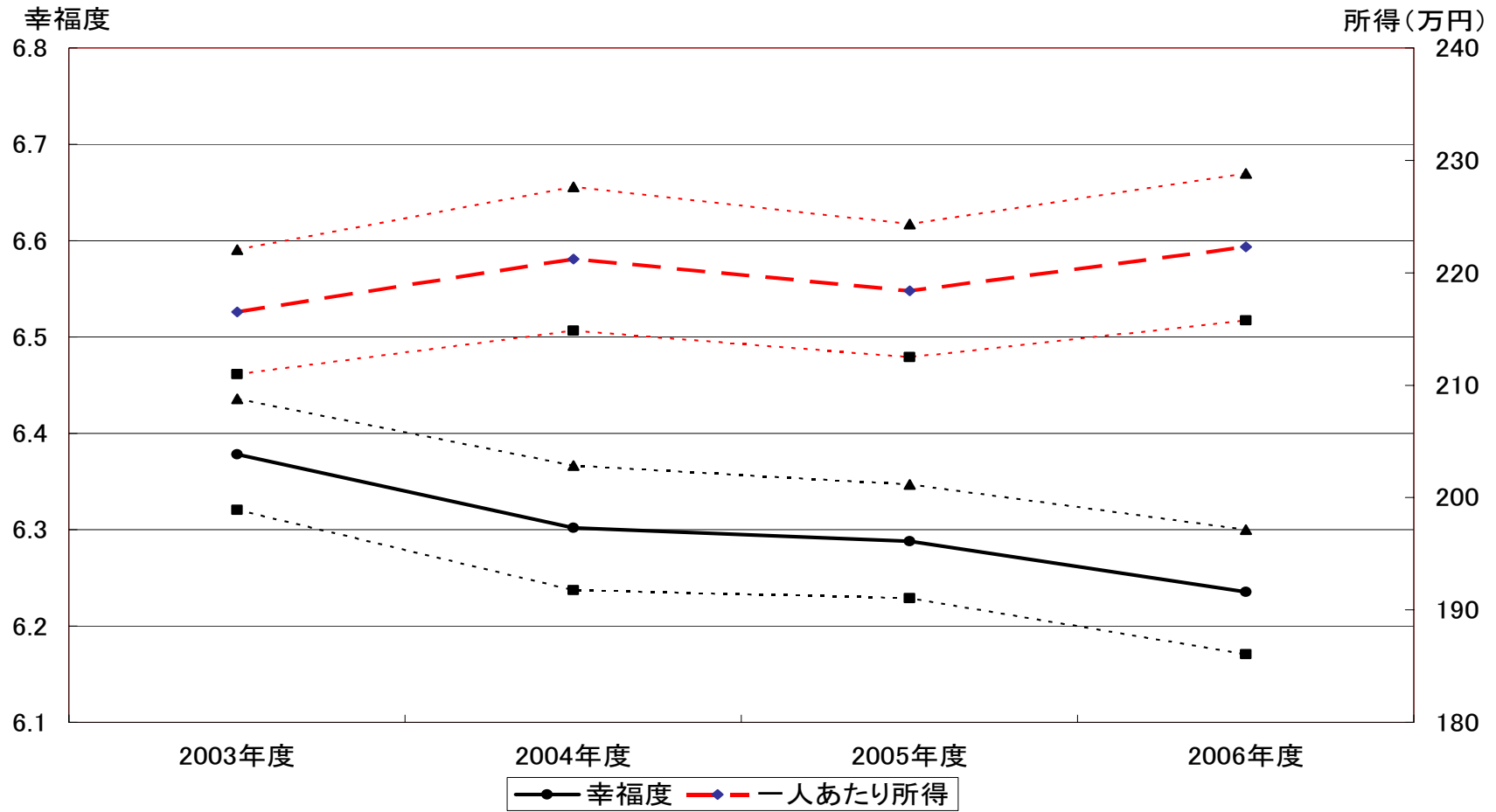
$\tilde{H}_i: (6)$



(6)

(7)

95%



95%

	<i>D</i>		1	0					
20	<i>D</i>	20	1		0				
30	<i>D</i>	30	1		0				
40	<i>D</i>	40	1		0				
50	<i>D</i>	50	1		0				
									0
	<i>D</i>		1						
	<i>D</i>			1					
	<i>D</i>			1					
	<i>D</i>				1				
	<i>D</i>			1					1
	<i>D</i>			1					
	<i>D</i>			1					
	<i>D</i>				1				
	<i>D</i>					1			
	<i>D</i>						1		
	<i>D</i>							1	
	<i>D</i>			1					
	<i>D</i>				1				
	<i>D</i>		1						
	<i>D</i>					1			
	<i>D</i>						1		
	<i>D</i>		1						
	<i>D</i>			1					
	<i>D</i>				1				
	<i>D</i>					1			
	<i>D</i>		5				1		

%

100

1

2

3

4

5

2004

1000

9 9000

10

1000

1

2

3

2005

1 3 2
5 1

5 1

1 2 3 4 1 10
5 1 1 6 1 2
1 2 3 4
(350ml) 1 5 (350ml) 3
6 (350ml) 5
2 3 4 1
5 1 6

0

D 1
D 1
D 1
D 1
D 1

2 2
2003 2002 -9% 9% 11
(0 10)
2004 2003 -9% 9% 11
(0 10)
10
10

X Y

 \tilde{H}_i

$$(A1) \quad \hat{\alpha} \quad \hat{\beta} \quad \hat{\gamma} \quad \kappa_k (k=1,2,\dots,10)$$

$$H_i = \alpha + \beta\tilde{Y}_i + \gamma X_i + \varepsilon_i \quad (A1)$$

$$\hat{\alpha} \quad \hat{\beta} \quad \hat{\gamma} \quad \hat{\varepsilon}_i \quad (A2)$$

$$\tilde{H}_i^* \equiv \hat{\alpha} + \hat{\beta}\tilde{Y} + \hat{\gamma}\tilde{X} + \hat{\varepsilon}_i \quad (A2)$$

$$\bar{X} \quad \bar{Y} \quad H^*$$

$$\tilde{H}_i^* \quad h \quad \tilde{P}_h \equiv \Pr(H_i = h)$$

Greene

2000

$$\tilde{P}_0 \equiv \Pr(H_i = 0) = \phi(\kappa_1 - \tilde{H}_i^*)$$

$$\tilde{P}_1 \equiv \Pr(H_i = 1) = \phi(\kappa_2 - \tilde{H}_i^*) - \phi(\kappa_1 - \tilde{H}_i^*) \quad (A3)$$

⋮

$$\tilde{P}_{10} \equiv \Pr(H_i = 10) = \phi(\tilde{H}_i^* - \kappa_{10})$$

$$\phi \quad \tilde{P}_h$$

$$\tilde{H}_i \equiv E(H_i) = \sum_{h=0}^{10} \tilde{P}_h h \quad (A4)$$

$$(A2) \quad \hat{\varepsilon}_i \equiv H_i - \hat{H}_i \quad (A1)$$

$$\hat{\alpha} \quad \hat{\beta} \quad \hat{\gamma} \quad H_i^* \quad \hat{H}_i^* \quad (A5)$$

$$\hat{H}_i^* \equiv \hat{\alpha} + \hat{\beta}\tilde{Y}_i + \hat{\gamma}X_i \quad (A5)$$

$$\hat{H}_i^* \quad h \quad P_h \equiv \Pr(H_i = h), \quad h = 0, 1, \dots, 10 \quad (A3)$$

$$\tilde{H}_i^* \quad \hat{H}_i^* \quad P_h$$

$$H_i \quad \hat{H}_i \quad (A6) \quad \hat{\varepsilon}_i \equiv H_i - \hat{H}_i$$

$$\hat{H}_i \equiv E(H_i) = \sum_{h=0}^{10} P_h h \quad (A6)$$

Regional Disparity Measured by Subjective Happiness

Chisako Yamane (Niigata Sangyo University)[†]

Shoko Yamane (Osaka University)[‡]

Yoshiro Tsutsui (Osaka University)[¶]

Abstract

In this paper we estimate the regional disparity of income and happiness between prefectures using the results of questionnaire survey conducted by 21st Century COE program of Osaka University from 2003 to 2006. We found the followings. 1) Three measures of disparity, multiple comparisons, regression over prefecture dummies, and Gini indexes, reveal that the disparity of happiness was smaller than that of income. 2) When a part of income that depends on the personal attributes as well as attributes of respondents, such as gender and age are adjusted, most of the disparity of happiness between prefectures is dissolved. 3) Three measures indicate that the average income increased, while income disparity has widened from 2003 to 2006, and average happiness decreased, while disparity of happiness remained constant over this period.

JEL Classification Number: R13, I32, D63

Keywords: income disparity, regional disparity, subjective happiness, economics of happiness, Japan

[†]Department of Economics, Niigata Sangyo University, Karuigawa, Kashiwazaki, Niigata 945-1393 Japan, Phone: 0257-24-8509, e-mail: yamane@econ.nsu.ac.jp

[‡]Graduate School of Economics, Osaka University, 1-7 Machikaneyama, Toyonaka, Osaka 560-0043 Japan, e-mail: hgp011ys@mail2.econ.osaka-u.ac.jp

[¶]Graduate School of Economics, Osaka University, 1-7 Machikaneyama, Toyonaka, Osaka 560-0043 Japan, Phone: 06-6850-5223, Fax: 06-6850-5274, e-mail: tsutsui@econ.osaka-u.ac.jp