

Table 1: Variation of WFR index and population in Tokyo Metropolitan Area

Area Name	WFR indx					population (Thousand)				
	1985	1990	1995	2000	2005	1985	1990	1995	2000	2005
Chiyoda	0.74	0.57	0.55	0.50	0.52	50	39	35	36	42
Chuo	1.00	0.80	0.78	0.68	0.54	80	68	64	73	98
Minato	0.84	0.68	0.69	0.60	0.53	195	158	145	159	186
Shinjuku	0.74	0.63	0.53	0.48	0.46	333	297	279	287	306
Bunkyo	0.82	0.64	0.57	0.56	0.52	196	181	172	176	190
Taito	0.87	0.72	0.62	0.63	0.65	177	163	154	156	165
Sumida	1.03	0.84	0.76	0.69	0.70	230	223	216	216	231
Kouto	1.10	0.89	0.75	0.72	0.81	389	385	366	377	421
Shinagawa	0.96	0.72	0.60	0.58	0.57	358	345	325	325	346
Megro	0.76	0.56	0.53	0.49	0.51	269	251	243	250	264
Ohta	1.07	0.85	0.74	0.71	0.71	663	648	636	650	666
Setagaya	0.84	0.63	0.55	0.54	0.54	811	789	781	815	841
Shibuya	0.69	0.57	0.48	0.46	0.45	242	206	188	197	203
Nakano	0.77	0.61	0.52	0.47	0.44	336	320	307	310	311
Suginami	0.77	0.59	0.53	0.49	0.47	540	529	516	522	529
Toshima	0.78	0.60	0.51	0.47	0.49	278	262	246	249	251
Kita	1.01	0.81	0.65	0.64	0.64	368	355	334	327	330
Arakawa	0.99	0.85	0.76	0.71	0.68	190	185	177	180	191
Itabashi	1.06	0.86	0.74	0.69	0.72	506	519	511	514	523
Nerima	1.04	0.86	0.78	0.75	0.75	588	619	636	658	692
Adachi	1.15	0.99	0.89	0.84	0.84	623	631	622	617	625
Katsushika	1.08	0.96	0.86	0.81	0.83	419	425	424	422	425
Edogawa	1.13	1.02	0.90	0.90	0.87	515	566	589	620	654

Table 2: Descriptive Statistics

Variable	Mean	Std. Dev.	Min.	p25	Med.	p75	Max.
WFR index	1.120	0.244	0.000	0.962	1.107	1.257	3.668
ln(WFR index)	0.090	0.220	-2.026	-0.039	0.102	0.229	1.300
Per Capita Child Welfar Expenditure (million Yen)	2.971	2.026	0.108	1.667	2.506	3.745	39.347
Per Capita Income (million Yen)	1.621	0.487	0.411	1.273	1.636	1.949	7.747
Nuclear Family Ratio	0.555	0.088	0.232	0.495	0.559	0.619	0.790
Self-Employed Ratio	0.278	0.114	0.067	0.189	0.262	0.351	0.846
Population Density (thousand individuals/km ²)	0.855	2.037	0.002	0.073	0.220	0.619	21.334
Male Unemployment Ratio	0.299	0.191	0.000	0.164	0.256	0.386	1.919
Female LFP Ratio	0.305	0.042	0.101	0.277	0.305	0.333	0.444
Rbaby (Numerator of Per Capita Child Welfar Expenditure)	538	1522	0	61	148	440	35678
E95baby (Denominator of Per Capita Child Welfar Expenditure)	537	1649	1	54	133	394	39291
Child Welfare Expenditure (million Yen)	1201	3716	1	146	336	931	112516
Unemployed Male							
20<=age<25	106	348	0	9	27	77	10436
25<=age<30	91	331	0	7	19	61	11403
30<=age<35	72	271	0	5	16	49	11680
35<=age<40	61	224	0	5	15	43	9620
40<=age<45	55	194	0	5	14	40	8118
45<=age<49	55	197	0	5	14	41	7246
Base Unemployed Male							
20<=age<25	109	363	0	9	24	69	8980
25<=age<30	88	282	0	9	21	62	7276
30<=age<35	64	198	0	7	16	48	5272
35<=age<40	54	161	0	6	15	43	4322
40<=age<45	55	156	0	7	15	44	4037
45<=age<49	53	148	0	7	16	43	3891
Working Female							
20<=age<25	1258	3924	0	119	308	897	92767
25<=age<30	1148	3555	0	116	288	847	94624
30<=age<35	998	2815	1	124	293	820	82164
35<=age<40	1132	2939	2	157	365	989	73369
40<=age<45	1301	3363	2	181	420	1135	76125
Base LF Female							
20<=age<25	1279	4098	1	112	293	873	96210
25<=age<30	1161	3635	2	113	279	837	89558
30<=age<35	970	2937	1	102	248	733	78149
35<=age<40	1121	3267	2	128	306	880	83048
40<=age<45	1296	3686	1	155	364	1029	92111

Table 3: Discriptive Statistics: means by year

obs.=11045

(obs. of ln(WFR index) = 11042)

means by year	1985	1990	1995	2000	2005	Total
WFR index	1.298	1.174	1.129	1.040	0.964	1.120
ln(WFR index)	0.250	0.145	0.101	0.018	-0.061	0.090
Per Capita Child Welfar Expenditure	1.676	2.243	3.029	3.562	4.306	2.971
Per Capita Income (million Yen)	1.093	1.443	1.846	1.907	1.803	1.621
Nuclear Family Ratio	0.550	0.552	0.552	0.558	0.561	0.555
Self-Employed Ratio	0.347	0.303	0.268	0.242	0.234	0.278
Population Density (thousand individuals/km²)	0.791	0.851	0.858	0.879	0.893	0.855
Male Unemployment Ratio	0.218	0.187	0.259	0.324	0.502	0.299
Female LFP Ratio	0.288	0.300	0.302	0.311	0.322	0.305
Rbaby (Numerator of Per Capita Child Welfar Expenditure)	631	543	522	524	473	538
E95baby (Denominator of Per Capita Child Welfar Expendit	527	511	530	574	543	537
Child Welfare Expenditure (million Yen)	718	895	1130	1436	1808	1201
Unemployed Male						
20<=age<25	70	76	124	123	136	106
25<=age<30	55	50	90	120	139	91
30<=age<35	57	37	59	82	126	72
35<=age<40	59	41	47	60	100	61
40<=age<45	42	44	55	52	80	55
45<=age<49	41	33	62	64	74	55
Base Unemployed Male						
20<=age<25	103	112	125	109	95	109
25<=age<30	80	84	90	101	85	88
30<=age<35	66	58	60	66	72	64
35<=age<40	65	55	48	50	54	54
40<=age<45	55	66	55	48	50	55
45<=age<49	48	54	63	54	46	53
Working Female						
20<=age<25	1241	1399	1469	1199	987	1258
25<=age<30	888	1046	1184	1405	1208	1148
30<=age<35	953	851	897	1043	1241	998
35<=age<40	1333	1167	983	1037	1142	1132
40<=age<45	1300	1559	1298	1150	1198	1301
Base LF Female						
20<=age<25	1221	1328	1466	1274	1111	1279
25<=age<30	1060	1107	1180	1331	1122	1161
30<=age<35	1004	876	891	983	1094	970
35<=age<40	1338	1155	976	1031	1110	1121
40<=age<45	1318	1556	1292	1139	1178	1296

Table 4:Regression result

obs. = 11042

(* 10%, ** 5%, *** 1%)

	1. regression. with year dummies		2. Regression w/o year dummies		3. Fixed Effect Model	
	F(11, 11030) = 676.76 Prob > F = 0.0000 R-squared = 0.4030 Adj R-squared = 0.4024 Root MSE = .17001		F(7, 11034) = 965.36 Prob > F = 0.0000 R-squared= 0.3798 Adj R-squared = 0.3794 Root MSE = .17324		Number of groups = 2237 Obs per group: min = 2, avg. =4.9 max=5 R-sq: within = 0.4516 between = 0.0007 overall = 0.2034 F(10,8795) = 724.24 Prob > F = 0.0000 corr(u_i, Xb) = -0.1009	
dep. var. = ln(WFR index)	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Per Capita Child Welfar Expenditure	0.0159	0.00099 ***	0.0118	0.00096 ***	0.0038	0.00127 ***
Per Capita Income (million Yen)	-0.1767	0.00617 ***	-0.2042	0.00477 ***	-0.0020	0.01185
Nuclear Family Ratio	-0.0718	0.02491 ***	-0.1029	0.02532 ***	-0.3105	0.06413 ***
Self-Employed Ratio	0.0297	0.02132	0.0906	0.02151 ***	0.0802	0.05969
Population Density (thousand individuals/km^2)	-0.0147	0.00093 ***	-0.0131	0.00092 ***		
Male Unemployment Ratio	-0.2384	0.01219 ***	-0.3466	0.00971 ***	-0.1536	0.01665 ***
Female LFP Ratio	-0.5573	0.05551 ***	-0.8832	0.05345 ***	-1.5020	0.08585 ***
Year dummy 1985	0.0160	0.00707 **			0.1136	0.01122 ***
1990	-0.0343	0.00588 ***			0.0305	0.00692 ***
2000	-0.0598	0.00529 ***			-0.0577	0.00472 ***
2005	-0.1188	0.00615 ***			-0.0930	0.00683 ***
cont. term	0.6541	0.03163 ***	0.8012	0.02840 ***	0.7372	0.05438 ***
					sigma_u	0.1575
					sigma_e	0.1330
					rho	0.5839
					(fraction of variance to u_j)	
					F test that all u_i=0:	
					F(2236, 8795)=4.31	
					Prob > F = 0.0000	

Table 5. factor decompositions

	1985	1990	1995	2000
	> 1990	> 1995	>2000	>2005
Total Changes	-0.1048	-0.0444	-0.0837	-0.0782
Unexplained	-0.0879	-0.0298	-0.0586	-0.0357
Explained sum	-0.0168	-0.0146	-0.0250	-0.0425
Per Capita Child Welfar Expenditure	0.0021	0.0030	0.0020	0.0028
Per Capita Income (million Yen)	-0.0007	-0.0008	-0.0001	0.0002
Nuclear Family Ratio	-0.0008	0.0002	-0.0021	-0.0009
Self-Employed Ratio	-0.0036	-0.0028	-0.0021	-0.0006
Male Unemployment Ratio	0.0047	-0.0111	-0.0100	-0.0273
Female LFP Ratio	-0.0186	-0.0031	-0.0127	-0.0167