Long-term changes in child poverty in Japan: Evidence from the National Survey of Family Income and Expenditures[*]

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1. Introduction

This paper reports various indices of child poverty in Japan that have been calculated from the most comprehensive household survey in Japan, the National Survey of Family Income and Expenditure (NSFIE). The Japanese government is using a different survey for its estimates of child poverty (the Comprehensive Survey of Living Conditions (CSLC). At present, there remain scant evidence about changes in child poverty in Japan that is based on surveys that are different from the CSLC.

The NSFIE is conducted every 5 years, and this paper reports child poverty indices from five waves of the survey, from 1989 to 2009, using household responses to survey forms, which were provided by the Ministry of Internal Affairs and Communications. The responses constitute the complete sample for the survey, with no top coding or other adjustments to the original responses.

Compared with other household surveys in Japan, the NSFIE has an exceptionally large sample size (nearly 60,000 households, compared to about 9,000 households in the income

sub-survey of the CSLS). Another distinctive feature of the NSFIE is that it collects very detailed information on various household characteristics, including not just incomes (like it is done by the CSLS), but also consumption expenditures on a wide range of goods and services, the stock and flow of financial assets and liabilities, and the ownership of various household durables, from which valuable information can be derived about living conditions of households.

In subsequent subsections, I explain definitions of major variables, discuss major data adjustments, and explain how the original dataset was cleaned of unreliable observations.

2. Definitions

2.1 Income

For resource measure, I used disposable income, which was broadly defined as the difference between gross income and non-living expenditures (essentially, taxes and social security contributions). Gross income included wages, returns from assets (such as dividend and interest income), social security benefits, and remittances from relatives and other households. For households with house ownership, gross income also included the imputed rent from owner-occupied housing. Nonliving expenditures included taxes (mainly income and residential taxes) and social security contributions (such as public pension fees, health insurance fees, and similar payments). Exact formulas to derive disposable income are given below:

Gross annual income	=	Wages and salaries + Business income
	+	Social security benefits + Returns from assets
	+	Remittances from relatives and other households

Disposable income	=	Gross annual income/12
	-	Taxes
	-	Social Security Contributions
	+	Imputed rent from owner-occupied housing

Initial income figures referred to the whole households, and were normalized a equivalence scale that accounts for changing household needs with more household members. The equivalence scale was equal to the square root of the total number of household members. Though this equivalence scale unrealistically assumes that consumption needs of adults and

children are the same, its major advantage is widespread use, especially by the Japanese government in calculating official estimates of child poverty.

2.2 Poverty indices

I calculated two conventional poverty indexes for households with children: the headcount poverty rate and the poverty gap, and used disposable income as a measure of resources that are available for households. The poverty rate counted the number of children, who lived in households with incomes below the poverty line. The poverty line, in turn, was defined as a fixed ratio of median incomes across all households. Various definitions of poverty line are used in the literature, with 50% percent of median income probably the most common choice (it is also used in Japan's official estimated of poverty rates). However, the EU defies its poverty line by 60% percent of median incomes, and 40% thresholds are occasionally used too. Since there is no general agreement about which ratio to use for the poverty line, I will report estimates with the most common definitions, by 40%, 50%, and 60% of disposable incomes.

Poverty gap was defined as the amount of money, needed to raise all poor children up to the poverty line. The index was measured in terms of disposable income (such as 50% of its median), with income normalized by the square-root equivalence scale. Essentially, the poverty gap will show how much income needs to be provided to poor households to lift all of them out of poverty.

Since headcount poverty rate and poverty gap are expressed in percent, they could be calculated from nominal data. When data in real terms were required (for example, for calculating fixed poverty rates, with poverty line fixed, for example, in 1989), I used the consumer price index for all commodities, with the base year 2010.

2.3 Children

Poverty indexes for children were calculated on individual basis, with child poverty rate defined by the number of children living in poor households, compared to the total number of children. Children were defined as unmarried household members, who were younger than 18 years old. This age limit is also used in the official child poverty in Japan, making reported estimates conceptually comparable to the official figures. In several tables the age limit was extended to unmarried children whose age was between 18 and 24.

2.4 Missing data

The NSFIE data does not contain information for taxes and social security contributions for the category of 'other households' (which mostly include self-employed individuals and executives). However, for two waves (in 1989 and 1994), the tax and social security information was available for all household groups, including the problem category of 'other households'. Consequently, the problem of missing data had to be solved only for later surveys, in 1999, 2004, and 2009.

To impute the missing data in the later waves, using available data for 'other households' in 1989 and 1994. Namely, I regressed the rate of tax and social security contributions in 1989 and 1994 on the following explanatory variables: annual gross income, gender, age of household head, region of residence, and a year dummy for 1989. Then the estimated tax rates from this model were used to predict the missing taxes and social security contributions in 1999, 2004, and 2009 using available gross incomes in these years. To avoid unrealistic tax rates, I restricted them to stay within 0 and 1, using the imputation method of predictive mean matching, implemented in STATA (version 14).

2.5. Comparison with official estimates

The NSFIE is not used for regular calculation of poverty indices, but a recent report by the Japanese government (Cabinet Office et al., 2015) examined differences in relative poverty rates in across household surveys in Japan, and reported, inter alia, estimates for total poverty rates from NSFIE's data in 1999, 2004, and 2009. These estimates are listed in Table 1, along with corresponding poverty rates from this study.

The official report calculated the poverty rates for disposable income that was the same as used in this study. The equivalence scale was similarly the square root of the number of household members, and the poverty line was 50% of the median income. However, the report did not explain how it deal with the problem of missing taxes and social security contributions for the category of "other households", as discussed in sub-section 2.4. The possible difference with imputing procedures could explain why the poverty rates turned out different, with 9.1% in the government report for 1999 (Cabinet Office et al., 2015, p.7) versus 8.9% in this study. The difference increased to 0.6 percentage points in 2004 and 2009. Overall, the difference is not too large to produce a totally different conclusion about the poverty extent in Japan.

The official report also reported the poverty line, but only for 2009. It also turned out very close to the estimates of this study, 1.35 and 1.30 million yen in the official and the present report.

3. Child poverty rates

3.1 Poverty line at 50% of equalized disposable income

Table 2 reports estimates of child poverty rate that was calculated with the same parameters as in the replication of the official poverty rate in Section 2.6 (i.e., poverty line at 50% of median), with children less than 18 years old. The total child poverty rate increased from 8.0% in 1989 to 11.9% in 2009. These estimates are roughly 4 percentage points lower the official child poverty rate from the CSLC, and the pattern is similar to differences in relative poverty rates for the total populations, when they are calculated from the NSFIE and CSLC. Cabinet Office et al. (2015) examined likely sources of the differences, and concluded that the true poverty rate is likely to be between these alternative estimates, with the NSFIE underestimating, and the CSLC overestimating the poverty rates due to their particular sampling methods.

From 1989 to 2009, the poverty rate increased by 3.9 percentage points, and the increase was similar for boys and girls. The examine the significance of time trend in poverty, I used a simple test for trend that calculates the Spearman rank coefficient between observed poverty indices and a linear trend. The correlation coefficient for the total poverty rate was 0.965, with a corresponding p-value 0.008. The null hypothesis of the test is the absence of linear trend, and the small p-value provided evidence for significantly increasing time trend in child poverty. Similar conclusions could be made for child poverty among boys and girls, with p-values 0.001 and 0.018.

Table 2 also reports child poverty rates for different household types. The highest poverty rate was for single parent with children[1], at 46.5% in 2009. The poverty rate for this household category did not show a clear trend, with insignificant p-value (0.083). The second highest poverty rate was for "other households", at 17.8% in 2009, and a clear increasing trend (rank correlation 0.978, and p-value 0.004). The third highest category was among two-parent households, and then – among three-generation households, with poverty rates 9.4% and 7.9%, respectively.

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[1] Though this category includes single mothers and single fathers, in practice almost all of them included single mothers, while the number of single fathers was too few for meaningful analysis as a separate category (for example, just 23 households with single fathers in 2004, as compared to 965 single mothers).

In addition, Table 2 provides differences across household types by gender. Overall, estimated poverty rates were broadly similar to the total poverty rate, with the exception of significantly rising poverty rate for single households with girls (p-value 0.026).

Table 3 reports child poverty rates for a different age category, between 18 and 24 years old. Compared with child poverty rates in Table 2 (for children younger than 18), poverty rates are lower by about one-third. Single parents once again have the highest child poverty rate (29.0% in 2009), but the poverty rates among 'other households' is almost as high (for example, 24.1% in 2009). In this group of "grown-up children", the poverty rate for single households showed a significant time trend, with p-value 0.041.

Table 4 is again related to children younger than 18 years old, but uses poverty rates for the fixed poverty line (set in 1989 in this case)[2]. With fixed poverty line, results in table 4 show a more remarkable increase in child poverty rate, by 5.3 percentage points between 1989 and 2009. In contrast, with current poverty lines in Table 2, the child poverty rate increased less during the same period, by 3.9 percentage points. For single parents, the fixed poverty line resulted in significantly increasing time trend, with p-value 0.032. However, for single parents with boys, the lack of significant time trend remained the same as in Table 2

Table 5 is reports poverty rates across six age brackets: 0-3, 4-6, 7-9, 10-12, 13-15, and 16-18 years old. The highest poverty rate is observed among the youngest age group, reaching 15.6% in 2009, which greatly exceeds the poverty rate of 11.9% for children younger than 18 (as reported in Table 2). There is a continuous reduction in poverty rates as child age increases, to 12.1% for ages 4-6, 11.9% for ages 7-9 and similarly all the way to the oldest child group, with poverty rate 9.5% (all these rates are for all children in 2009, with similar patterns for previous years).

The same age groups are reported in Table 6, with the only difference that the poverty line was fixed in 1989 (similarly to Table 4), rather than changed from year to year. The pattern of reduced poverty rates across older age groups was again evident, with poverty rate highest among children aged 0 to 3 (17.9% in 2009), and the lowest among children aged 15 to 18 (10.6%).

3.2 Alternative poverty lines (60% and 40% of equalized disposable income)

Tables 7 to 11 are similar to Tables 2 to 6, with the only exception that the former apply a

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[2] In addition to the fixed poverty line, poverty rates in Table 4 are based on real disposable incomes, which makes them incomparable to results in Table 2, which are based on nominal disposable incomes.

different poverty line (60% of equalized disposable income, rather than 50%). Obviously, the increase in poverty line increased the number of children classified as poor, from 11.9% with 50% poverty line (in Table 2) to 19.7% with 60% poverty line (in Table 7). Unlike Table 2, all household categories in Table 7 showed significant upward trends in poverty rates over time (for example, p-value for children with single parents became significant).

Overall, results for the 60% poverty line were little change compared with 50% threshold. For children in 18-24 age group, the use of 60% poverty line once again produced lower poverty rates (Table 8) compared with children younger than 18 (Table 7). Similarly, the use of fixed poverty line produced a relatively larger increases in child poverty compared with concurrent poverty lines that changed from year to year. Specifically, with poverty line fixed at 1989, total child poverty rate increased by 6.7 percentage points from 1989 to 2009 (Table 9); without fixing, it increased by 4.0 percentage points (Table 7). Finally, the use of different poverty line did not change the relative ranking of poverty rates across age groups, with the highest poverty rates among the youngest children, and the lowest among the oldest children (Table 10), with result not affected by the use of fixed poverty lines (Table 11).

Tables 12-17 report poverty rates with a lower poverty line, at 40% of equivalized disposable income. The lower threshold predictably made poverty rates smaller. For example, the total poverty rate dropped to 6.2% (Table 12), compared with 11.9% and 19.7% with 50% and 60% of equalized disposable income (Tables 2 and 7, respectively). Overall, the use of 40% poverty line did not produce substantial changes compared with previously-reported results.

3.3 Poverty gaps

While poverty rates are intuitively appealing indices of poverty, they may create a misleading picture about the degree of deprivation among the poor, because they lump together households that are deep in poverty, and those who may fall short the poverty line just a bit. Poverty gaps do not have this shortcoming. Rather than counting the number of poor (no matter how deep their poverty is), poverty gaps look how much below the poverty line the typical (median) income of the poor is. Consequently, if living standards of the poorest households get worse, the poverty rate would not change (because the poor households are already classified as poor), but the poverty gap would indicate their worsening living standards.

Tables 17-21 report estimates of poverty gaps, for the same household attributes as

was used for poverty rates. Since not much difference was found for different threshold of poverty lines, the results for poverty gaps are reported for the most common choice (50% of equalized disposable income).

Table 17 reports that poverty gap was increasing between 1989 and 2009, from 1.7% to 3.2% of the poverty line, with similar change for boys and girls. The increasing trend was statistically significant (p-value for the total sample was 0.004, and the same for sub-samples by gender). Across different household types, the poverty gap was the largest for single parents (17% in 2009), but without a clear time trend for this household category (with p-value just 0.090).

Poverty gaps turned out lower for children between 18 and 24 years old (Table 18), with estimates roughly two third compared with children younger than 18 (Table 17). Finally, the use of fixed poverty line in year 1989 increased the magnitude of poverty gap. In 2009 it became 3.6% (Table 19), which was almost double the poverty gap without fixing (Table 17).

When poverty gaps were calculated for 6 age categories, results turned out different from corresponding estimates for poverty rates, when poverty rates were the highest for the youngest age category, and then monotonically decreased for older children. The youngest age category once again demonstrated the highest poverty gap, 3.8% in 2009 for children aged 0-3 (Table 20), compared with 3.2% for all children younger than 18 (Table 17). However, there was no monotonic reduction in the gap, with estimates clustered within 2.8-3.2% interval for age groups 4-6, 7-9, and 10-12, and 13-15, and once again the lowest poverty gap for the oldest age category (16-18 years old), at 2.6%. After the poverty line was fixed in 1989, the same clustering was evident in the middle range (Table 21), and a similar pattern to Table 20 of no monotonic reduction in estimated poverty gaps.

Conclusions.

This paper presents an extensive compilation of child poverty indexes for Japan from a very rich household survey, the National Survey of Family Income and Expenditure. The survey remains underutilized, except for notable studies by Ohtake and Kohara (2010, 2011)).

Four general conclusions can be identified. First, even though the level of child poverty rates from the NSFIE is consistently below the official estimates from the CSLC, estimates from both surveys show the same pattern, a rapid worsening in child poverty rates from the 1980s. Second, the worsening poverty for all children was broadly similar by gender, and by major household types, with no clear laggards or winners in the generally deteriorating

situation across all groups, examined in this study. Third, the choice of a threshold for poverty lines (either the most conventional choice of 50%, or other ratios of equivalized disposable income) mattered little for trends in poverty indices, though the choice obviously shifted their levels. Finally, the use of fixed poverty line (at its level in 1989) indicated a relatively larger worsening of poverty indices compared with indices that uses concurrent poverty lines.

References:

Cabinet Office, Ministry of General Affairs and Communication, Ministry of Health, Labor and Welfare (2015) "Report on the Analysis of Relative Poverty Ratios" [Japanese title: *Soutaiteki Hinkontitsu-to ni-kan suru Chousa Bunseki Kekka ni tsuite*], ttp://www5.cao.go.jp/keizai3/kakusa/ 20151218kakusa.pdf

Ohtake, Fumio and Miki Kohara (2010), "Income Disparities (Japanese title: Shotoku-no Kakusa)," in Yoshio Higuchi, ed., Labor Market and Income Distribution (Japanese title: *Roudo Shijou to Shotoku Bunpai*), Tokyo: Keio University Press, 2010, chapter 8, pp. 253–285.

Ohtake, Fumio and Miki Kohara (2011), "Poverty Rate and Inequality in Income and Financial Asset (Japanese title: *Hinkonritsu to Shotoku Kinyu Shisan Kakusa*)," in K. Iwai, M. Seko, and Y. Okina, eds., Financial Crisis and Macro Economy (Japanese title: Kinyu Kiki to Macro Keizai), Tokyo: Tokyo, University Press, 2011, chapter 8, pp. 253–285.

List of tables

Table 1. Comparison with official poverty rate for the total population

	Poverty rate (%)		Poverty line (million yen)	
	Official	This study	Official	This study
1999	9.1	8.9		
2004	9.5	8.9		
2009	10.1	9.5	1.35	1.30

Table 2. Child poverty rate (<18 years old, poverty line: 50% of the median)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Total	8.0	9.0	11.0	10.9	11.9	0.965	0.008
Boys	7.9	9.1	11.2	10.8	12.6	0.989	0.001
Girls	8.1	8.9	10.8	11.1	11.3	0.940	0.018
2. By household type (total):							
Two parents	7.9	8.9	10.5	9.6	9.4	0.972	0.006
Single parent	46.4	33.8	44.1	44.5	46.5	0.829	0.083
3 generations	6.0	6.0	6.9	6.3	7.9	0.914	0.030
Other	7.2	9.4	10.4	15.2	17.8	0.978	0.004
By household type (boys):							
Two parents	7.9	9.2	10.6	9.5	10.1	0.975	0.005
Single parent	45.3	32.3	45.7	43.9	46.6	0.810	0.097
3 generations	5.8	5.9	7.0	6.1	7.9	0.944	0.016
Other	7.3	9.4	10.8	14.7	18.9	0.978	0.004
(b) By household type (girls):							
Two parents	7.9	8.7	10.4	9.7	8.7	0.974	0.005
Single parent	47.4	35.4	42.3	45.1	46.4	0.921	0.026
3 generations	6.3	6.2	6.7	6.4	7.8	0.889	0.044
Other	7.1	9.4	10.0	15.7	16.5	0.960	0.009

Table 3. Child poverty rate (18-24 years old, poverty line: 50% of the median)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Total	3.2	4.3	5.5	6.4	7.1	0.996	0.000
Boys	3.1	4.7	5.7	6.7	7.0	0.975	0.005
Girls	3.4	4.1	5.3	6.1	7.3	0.996	0.000
2. By household type (total):							
Two parents	3.4	3.4	6.3	5.4	6.1	0.939	0.018
Single parent	25.2	28.3	27.5	36.6	29.0	0.893	0.041
3 generations	3.3	4.2	5.4	4.6	6.5	0.989	0.001
Other	9.2	9.3	14.1	11.3	24.1	0.884	0.047
By household type (boys):							
Two parents	3.6	3.6	6.1	5.8	6.4	0.927	0.023
Single parent	23.3	32.3	30.0	37.8	31.6	0.952	0.013
3 generations	2.8	4.7	6.0	4.7	6.1	0.939	0.018
Other	7.5	12.1	11.3	8.7	26.9	0.852	0.067
(b) By household type (girls):							
Two parents	3.3	3.1	6.4	5.1	5.9	0.969	0.006
Single parent	27.0	24.5	24.9	35.3	25.9	0.840	0.075
3 generations	3.7	3.8	4.9	4.5	6.9	0.913	0.030
Other	10.5	6.9	16.0	13.3	21.8	0.988	0.002

Table 4. Child poverty rate (<18 years old, poverty line: 50% of the median, fixed in 1989)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Total	8.2	5.9	9.6	10.9	13.5	0.993	0.001
Boys	8.1	5.9	9.8	10.7	14.1	0.984	0.002
Girls	8.2	5.9	9.4	11.1	12.9	0.996	0.000
2. By household type (total):							
Two parents	8.2	5.6	9.1	9.6	10.9	0.963	0.008
Single parent	46.4	30.0	41.8	44.5	49.0	0.910	0.032
3 generations	6.0	3.7	6.1	6.3	8.6	0.919	0.028
Other	7.0	6.3	8.9	15.2	20.4	0.950	0.013
By household type (boys):							
Two parents	8.2	5.7	9.0	9.5	11.6	0.964	0.008
Single parent	45.1	28.2	43.6	43.9	48.5	0.845	0.072
3 generations	5.7	3.5	6.4	6.1	8.6	0.944	0.016
Other	7.1	6.3	9.5	14.7	22.0	0.946	0.015
(b) By household type (girls):							
Two parents	8.1	5.5	9.1	9.7	10.2	0.939	0.018
Single parent	47.5	32.0	39.9	45.1	49.4	0.957	0.011
3 generations	6.2	4.0	5.8	6.4	8.7	0.942	0.016
Other	6.9	6.3	8.2	15.7	18.6	0.941	0.017

Note: disposable income is in real 2000 prices.

Table 5. Child poverty rate by age brackets (poverty line: 50% of the median)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Age: 0-3 years old							
Total	12.4	14.4	16.2	16.2	15.6	0.924	0.025
Boys	12.3	14.2	16.4	15.7	16.6	0.947	0.015
Girls	12.6	14.6	16.0	16.7	14.7	0.965	0.008
2. Age: 4-6 years old							
Total	9.7	10.8	12.3	12.9	12.1	0.967	0.007
Boys	9.4	11.3	12.6	13.3	12.3	0.950	0.013
Girls	9.9	10.2	12.0	12.5	11.9	0.952	0.012
3. Age: 7-9 years old							
Total	7.8	9.0	11.3	10.4	11.9	0.988	0.002
Boys	8.0	8.9	11.6	9.9	12.9	0.994	0.001
Girls	7.7	9.1	11.0	10.9	10.7	0.918	0.028
4. Age: 10-12 years old							
Total	6.6	7.1	8.7	9.2	10.7	0.988	0.002
Boys	6.8	7.5	8.8	9.5	11.5	0.983	0.003
Girls	6.3	6.8	8.6	8.9	9.8	0.975	0.005
5. Age: 13-15 years old							
Total	5.6	6.0	8.0	8.0	10.0	0.965	0.008
Boys	5.2	6.2	8.4	7.9	10.1	0.990	0.001
Girls	6.0	5.8	7.7	8.0	9.9	0.967	0.007
6. Age: 16-18 years old							
Total	4.7	5.6	7.8	7.2	9.5	0.991	0.001
Boys	4.6	5.7	7.6	6.4	10.0	0.974	0.005
Girls	4.9	5.5	8.0	8.0	9.0	0.954	0.012

Table 6. Child poverty rate by age bracket (poverty line: 50% of the median, fixed in 1989)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Age: 0-3 years old							
Total	13.0	9.2	14.2	16.2	17.9	0.981	0.003
Boys	13.0	8.9	14.4	15.7	18.9	0.978	0.004
Girls	13.0	9.5	14.1	16.7	16.8	0.960	0.010
2. Age: 4-6 years old							
Total	9.9	7.1	10.7	12.9	13.9	0.985	0.002
Boys	9.6	7.4	11.1	13.2	13.9	0.988	0.002
Girls	10.1	6.7	10.3	12.5	13.9	0.971	0.006
3. Age: 7-9 years old							
Total	7.9	5.8	9.7	10.4	13.4	0.984	0.002
Boys	8.0	5.5	10.0	9.9	14.5	0.958	0.010
Girls	7.8	6.1	9.4	10.9	12.2	0.999	0.000
4. Age: 10-12 years old							
Total	6.6	4.8	7.6	9.2	12.1	0.983	0.003
Boys	6.9	4.9	7.7	9.5	12.8	0.977	0.004
Girls	6.5	4.8	7.5	9.1	11.6	0.989	0.001
5. Age: 13-15 years old							
Total	6.0	3.9	6.8	8.0	10.8	0.979	0.004
Boys	5.6	4.0	7.1	8.0	11.2	0.978	0.004
Girls	5.2	4.0	7.2	7.9	11.5	0.972	0.006
6. Age: 16-18 years old							
Total	4.8	3.9	6.9	7.2	10.4	0.965	0.008
Boys	4.6	4.3	6.7	6.4	10.8	0.916	0.029
Girls	4.9	3.5	7.1	8.0	10.0	0.995	0.000

Note: disposable income is in real 2000 prices.

Table 7. Child poverty rate (<18 years old, poverty line: 60% of the median)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Total	15.7	17.1	19.2	18.8	19.7	0.965	0.008
Boys	15.7	17.1	19.4	18.6	20.2	0.990	0.001
Girls	15.7	17.1	19.1	19.0	19.3	0.916	0.029
2. By household type (total):							
Two parents	16.2	18.0	19.5	17.7	17.2	0.970	0.006
Single parent	58.5	43.5	52.6	53.6	57.4	0.930	0.022
3 generations	12.4	11.7	12.3	11.9	13.1	0.969	0.007
Other	12.1	13.9	17.6	23.9	27.6	0.984	0.003
By household type (boys):							
Two parents	16.4	18.1	19.5	17.6	17.6	0.947	0.015
Single parent	56.9	43.0	54.7	52.8	57.3	0.885	0.046
3 generations	12.0	11.4	12.3	11.9	13.2	0.951	0.013
Other	12.5	14.0	18.1	22.7	28.9	0.979	0.004
(b) By household type (girls):							
Two parents	16.0	17.9	19.5	17.9	16.7	0.972	0.005
Single parent	60.0	44.1	50.3	54.6	57.4	0.982	0.003
3 generations	12.8	12.0	12.3	11.9	12.9	0.972	0.005
Other	11.7	13.8	17.0	25.2	26.0	0.966	0.007

Table 8. Child poverty rate (18-24 years old, poverty line: 60% of the median)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Total	5.8	7.3	9.3	10.8	11.3	0.985	0.002
Boys	5.7	7.6	9.9	11.4	11.3	0.963	0.008
Girls	5.9	7.0	8.7	10.1	11.2	0.998	0.000
2. By household type (total):							
Two parents	6.8	7.1	10.5	10.6	10.2	0.905	0.035
Single parent	35.8	30.7	31.8	43.6	38.0	0.976	0.005
3 generations	6.6	7.1	9.3	9.6	9.3	0.921	0.026
Other	17.6	12.2	20.3	22.1	29.3	0.977	0.004
By household type (boys):							
Two parents	6.7	7.0	10.1	11.5	10.1	0.948	0.014
Single parent	28.4	32.7	34.3	46.9	40.7	0.980	0.003
3 generations	5.5	7.3	10.7	10.0	10.0	0.937	0.019
Other	16.2	13.9	16.3	17.9	32.1	0.826	0.085
(b) By household type (girls):							
Two parents	6.9	7.2	10.8	9.7	10.3	0.954	0.012
Single parent	42.7	28.9	29.3	40.2	34.9	0.975	0.005
3 generations	7.5	6.9	8.1	9.2	8.6	0.999	0.000
Other	18.7	10.8	22.9	25.2	26.8	0.951	0.013

Table 9. Child poverty rate (<18 years old, poverty line: 60% of the median, fixed in 1989)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Total	15.9	11.6	17.1	18.8	22.6	0.979	0.004
Boys	15.9	11.5	17.2	18.6	23.0	0.973	0.005
Girls	15.9	11.7	17.1	19.0	22.0	0.983	0.003
2. By household type (total):							
Two parents	16.5	11.8	17.2	17.7	20.1	0.929	0.023
Single parent	58.9	37.3	51.0	53.6	59.1	0.913	0.030
3 generations	12.2	7.8	10.8	11.9	15.5	0.961	0.009
Other	12.1	10.7	15.9	23.9	31.1	0.967	0.007
By household type (boys):							
Two parents	16.6	11.9	17.1	17.5	20.6	0.926	0.024
Single parent	57.8	35.4	53.0	52.8	58.9	0.870	0.055
3 generations	11.9	7.6	10.8	11.9	16.1	0.943	0.016
Other	12.4	10.6	16.6	22.7	32.2	0.964	0.008
(b) By household type (girls):							
Two parents	16.3	11.8	17.3	17.8	19.6	0.926	0.024
Single parent	59.9	39.5	48.9	54.6	59.3	0.956	0.011
3 generations	12.6	8.0	10.8	11.9	14.8	0.976	0.004
Other	11.7	10.8	15.3	25.2	29.9	0.959	0.010

Table 10. Child poverty rate by age brackets (poverty line: 60% of the median)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Age: 0-3 years old							
Total	24.8	28.1	28.6	27.8	25.7	0.956	0.011
Boys	24.9	27.6	28.8	26.7	26.5	0.975	0.005
Girls	24.8	28.6	28.4	29.0	24.9	0.912	0.031
2. Age: 4-6 years old							
Total	19.4	20.6	22.4	22.7	21.1	0.983	0.003
Boys	19.7	21.1	22.8	23.0	20.7	0.973	0.005
Girls	19.1	20.2	21.9	22.4	21.4	0.977	0.004
3. Age: 7-9 years old							
Total	15.2	16.9	19.5	18.2	19.5	0.966	0.008
Boys	15.2	16.8	19.4	17.9	20.3	0.996	0.000
Girls	15.2	17.0	19.5	18.4	18.6	0.963	0.009
4. Age: 10-12 years old							
Total	12.8	13.5	15.3	14.9	17.9	0.963	0.009
Boys	13.3	13.5	15.2	15.1	18.7	0.908	0.033
Girls	12.3	13.5	15.4	14.7	17.0	0.995	0.000
5. Age: 13-15 years old							
Total	10.1	11.1	14.0	13.9	16.5	0.972	0.006
Boys	9.8	11.4	14.4	14.2	16.8	0.979	0.004
Girls	10.4	10.7	13.5	13.6	16.2	0.960	0.010
6. Age: 16-18 years old							
Total	9.1	9.8	12.4	12.2	14.4	0.975	0.005
Boys	8.8	9.6	12.2	11.6	14.6	0.981	0.003
Girls	9.3	9.9	12.6	12.7	14.1	0.963	0.009

Table 11. Child poverty rate by age bracket (poverty line: 60% of the median, fixed in 1989)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Age: 0-3 years old							
Total	25.3	19.0	25.4	27.8	29.5	0.932	0.021
Boys	25.6	18.4	25.3	26.6	30.3	0.924	0.025
Girls	25.1	19.6	25.5	29.0	28.7	0.935	0.020
2. Age: 4-6 years old							
Total	19.4	13.7	19.7	22.6	24.7	0.960	0.010
Boys	19.6	13.8	19.8	22.9	24.6	0.955	0.011
Girls	19.2	13.6	19.6	22.3	24.8	0.963	0.008
3. Age: 7-9 years old							
Total	15.3	11.5	17.4	18.1	22.3	0.976	0.005
Boys	15.3	11.5	17.6	17.9	22.8	0.967	0.007
Girls	15.4	11.5	17.3	18.4	21.7	0.982	0.003
4. Age: 10-12 years old							
Total	12.9	9.2	13.5	14.9	20.5	0.946	0.015
Boys	13.4	9.6	13.3	15.1	21.2	0.930	0.022
Girls	12.7	8.7	13.8	14.8	19.9	0.959	0.010
5. Age: 13-15 years old							
Total	10.5	7.6	12.0	13.6	17.6	0.984	0.002
Boys	10.1	7.6	12.5	13.9	18.4	0.985	0.002
Girls	9.8	7.7	13.0	14.2	19.1	0.983	0.003
6. Age: 16-18 years old							
Total	9.1	6.9	11.3	12.2	15.8	0.985	0.002
Boys	8.8	6.8	11.2	11.6	16.3	0.967	0.007
Girls	9.4	7.0	11.5	12.7	15.3	0.995	0.000

Note: disposable income is in real 2000 prices.

Table 12. Child poverty rate (<18 years old, poverty line: 40% of the median)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Total	3.4	3.8	5.4	5.7	6.2	0.970	0.006
Boys	3.3	3.9	5.5	5.8	6.3	0.971	0.006
Girls	3.5	3.8	5.3	5.7	6.2	0.966	0.007
2. By household type (total):							
Two parents	3.0	3.5	4.8	4.6	4.3	0.970	0.006
Single parent	32.5	23.8	32.6	33.1	33.8	0.784	0.117
3 generations	2.3	2.1	3.1	2.6	3.4	0.989	0.001
Other	3.7	4.6	4.8	8.7	9.2	0.940	0.018
By household type (boys):							
Two parents	3.0	3.7	4.7	4.6	4.5	0.928	0.023
Single parent	30.4	21.9	33.9	33.0	33.1	0.852	0.067
3 generations	2.1	2.0	3.4	2.6	3.2	0.972	0.006
Other	3.8	4.9	5.1	8.4	9.9	0.957	0.011
(b) By household type (girls):							
Two parents	3.0	3.4	4.9	4.5	4.1	0.992	0.001
Single parent	34.5	25.8	31.1	33.2	34.6	0.907	0.033
3 generations	2.4	2.2	2.8	2.7	3.7	0.927	0.024
Other	3.6	4.3	4.5	8.9	8.6	0.926	0.024

Table 13. Child poverty rate (18-24 years old, poverty line: 40% of the median)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Total	1.5	2.5	2.7	3.3	4.1	0.981	0.003
Boys	1.4	2.9	2.9	3.4	4.3	0.955	0.011
Girls	1.5	2.1	2.6	3.1	3.9	0.995	0.000
2. By household type (total):							
Two parents	1.4	1.5	3.2	2.4	3.0	0.974	0.005
Single parent	10.0	20.2	18.2	23.2	21.6	0.911	0.031
3 generations	1.2	2.5	2.5	1.8	2.9	0.960	0.010
Other	4.2	3.9	5.8	7.6	12.3	0.929	0.022
By household type (boys):							
Two parents	1.3	1.8	3.4	3.2	4.0	0.976	0.004
Single parent	8.1	28.5	18.5	21.2	24.1	0.959	0.010
3 generations	0.9	3.0	3.3	2.4	2.5	0.925	0.025
Other	2.9	5.7	4.8	7.6	17.2	0.882	0.047
(b) By household type (girls):							
Two parents	1.4	1.3	3.0	1.7	2.1	0.936	0.019
Single parent	11.8	12.2	17.9	25.2	18.5	0.954	0.012
3 generations	1.4	2.1	1.9	1.2	3.3	0.947	0.015
Other	5.3	2.5	6.4	7.6	8.1	0.959	0.010

Table 14. Child poverty rate (<18 years old, poverty line: 40% of the median, fixed in 1989)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Total	3.4	2.5	4.8	5.7	7.1	0.997	0.000
Boys	3.3	2.6	4.9	5.8	7.2	0.993	0.001
Girls	3.6	2.5	4.8	5.7	6.9	0.999	0.000
2. By household type (total):							
Two parents	3.1	2.1	4.2	4.5	5.0	0.978	0.004
Single parent	33.1	18.8	31.2	33.1	35.8	0.850	0.068
3 generations	2.2	1.5	2.7	2.6	4.3	0.935	0.020
Other	3.4	3.0	4.2	8.7	10.3	0.941	0.017
By household type (boys):							
Two parents	3.0	2.2	4.1	4.6	5.3	0.994	0.001
Single parent	30.4	18.6	32.4	33.0	35.1	0.861	0.061
3 generations	2.0	1.5	2.9	2.6	4.0	0.984	0.002
Other	3.5	3.3	4.6	8.4	10.8	0.948	0.014
(b) By household type (girls):							
Two parents	3.2	2.1	4.3	4.5	4.7	0.946	0.015
Single parent	35.6	19.1	29.8	33.2	36.5	0.911	0.032
3 generations	2.4	1.6	2.5	2.7	4.7	0.889	0.044
Other	3.3	2.8	3.8	8.9	9.7	0.926	0.024

Table 15. Child poverty rate by age brackets (poverty line: 40% of the median)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Age: 0-3 years old							
Total	4.5	5.6	7.5	8.0	7.6	0.943	0.016
Boys	4.3	5.6	7.5	8.0	7.9	0.932	0.021
Girls	4.7	5.6	7.4	8.0	7.2	0.967	0.007
2. Age: 4-6 years old							
Total	4.0	4.5	5.9	6.6	5.6	0.983	0.003
Boys	3.8	4.7	6.1	7.0	5.4	0.999	0.000
Girls	4.1	4.2	5.5	6.2	5.9	0.952	0.013
3. Age: 7-9 years old							
Total	3.3	3.9	5.4	5.7	6.5	0.981	0.003
Boys	3.1	3.8	5.4	5.6	6.9	0.983	0.003
Girls	3.5	4.1	5.4	5.8	6.0	0.962	0.009
4. Age: 10-12 years old							
Total	2.9	3.2	4.6	4.9	6.2	0.981	0.003
Boys	3.0	3.3	4.7	5.3	6.3	0.984	0.002
Girls	2.7	3.2	4.5	4.5	6.1	0.967	0.007
5. Age: 13-15 years old							
Total	2.8	2.7	4.3	4.2	5.6	0.956	0.011
Boys	2.7	2.6	4.4	4.2	5.7	0.962	0.009
Girls	2.8	2.7	4.2	4.3	5.6	0.959	0.010
6. Age: 16-18 years old							
Total	2.3	2.9	4.0	4.1	5.2	0.978	0.004
Boys	2.2	3.3	3.8	3.5	4.9	0.965	0.008
Girls	2.4	2.5	4.2	4.6	5.4	0.969	0.007

Table 16. Child poverty rate by age bracket (poverty line: 40% of the median, fixed in 1989)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Age: 0-3 years old							
Total	4.6	3.4	6.6	8.0	8.7	0.990	0.001
Boys	4.3	3.2	6.7	8.0	9.1	0.991	0.001
Girls	4.9	3.5	6.6	8.0	8.4	0.984	0.002
2. Age: 4-6 years old							
Total	4.0	2.8	5.2	6.6	6.2	0.983	0.003
Boys	3.7	2.8	5.6	7.0	6.1	0.983	0.003
Girls	4.3	2.7	4.9	6.2	6.4	0.972	0.006
3. Age: 7-9 years old							
Total	3.3	2.7	4.7	5.7	7.3	0.992	0.001
Boys	3.2	2.7	4.6	5.6	7.8	0.977	0.004
Girls	3.5	2.8	4.8	5.8	6.7	0.997	0.000
4. Age: 10-12 years old							
Total	2.9	2.2	4.1	4.9	6.8	0.983	0.003
Boys	2.9	2.3	4.2	5.3	6.9	0.990	0.001
Girls	2.8	2.1	4.0	4.5	6.8	0.969	0.006
5. Age: 13-15 years old							
Total	2.8	1.7	3.9	4.2	6.4	0.973	0.005
Boys	2.7	1.9	4.1	4.2	6.5	0.961	0.009
Girls	2.9	1.6	3.8	4.3	6.2	0.982	0.003
6. Age: 16-18 years old							
Total	2.3	2.2	3.6	4.1	6.2	0.947	0.014
Boys	2.2	2.5	3.3	3.5	6.2	0.900	0.037
Girls	2.4	1.9	3.8	4.6	6.1	0.989	0.001

Note: disposable income is in real 2000 prices.

Table 17. Child poverty gap (<18 years old, poverty line: 50% of the median)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Total	1.7	2.0	2.7	2.8	3.2	0.979	0.004
Boys	1.6	2.0	2.7	2.8	3.2	0.978	0.004
Girls	1.7	1.9	2.6	2.8	3.1	0.979	0.004
2. By household type (total):							
Two parents	1.5	1.8	2.3	2.1	2.2	0.967	0.007
Single parent	15.2	11.4	17.0	17.2	17.0	0.818	0.090
3 generations	1.2	1.3	1.6	1.2	1.7	0.953	0.012
Other	1.7	2.4	2.6	4.2	4.6	0.968	0.007
By household type (boys):							
Two parents	1.5	1.8	2.2	2.2	2.3	0.895	0.040
Single parent	14.0	10.9	18.0	16.7	16.4	0.953	0.012
3 generations	1.1	1.2	1.7	1.2	1.6	0.991	0.001
Other	1.9	2.5	3.0	4.1	4.8	0.991	0.001
(b) By household type (girls):							
Two parents	1.6	1.7	2.4	2.1	2.1	0.969	0.007
Single parent	16.4	12.1	15.9	17.8	17.6	0.900	0.037
3 generations	1.3	1.3	1.5	1.2	1.8	0.969	0.007
Other	1.6	2.3	2.2	4.2	4.4	0.945	0.015

Table 18. Child poverty gap (18-24 years old, poverty line: 50% of the median)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Total	1.0	1.2	1.4	1.7	1.9	0.997	0.000
Boys	0.7	1.4	1.5	1.8	2.0	0.954	0.012
Girls	1.2	1.1	1.3	1.6	1.9	0.967	0.007
2. By household type (total):							
Two parents	0.7	0.9	1.5	1.1	1.4	0.992	0.001
Single parent	5.9	8.5	7.9	12.2	9.7	0.978	0.004
3 generations	0.7	1.5	1.5	1.0	1.4	0.979	0.004
Other	2.0	2.2	2.9	3.3	6.5	0.877	0.051
By household type (boys):							
Two parents	0.7	1.0	1.7	1.4	1.7	0.999	0.000
Single parent	4.5	11.5	7.8	11.9	9.9	0.961	0.009
3 generations	0.6	1.7	2.0	1.0	1.2	0.994	0.001
Other	1.7	2.9	2.6	3.2	8.4	0.834	0.079
(b) By household type (girls):							
Two parents	0.8	0.7	1.4	0.9	1.0	0.936	0.019
Single parent	7.2	5.6	8.1	12.4	9.4	0.975	0.005
3 generations	0.8	1.2	0.9	1.0	1.5	0.969	0.007
Other	2.3	1.6	3.1	3.4	4.8	0.980	0.003

Table 19. Child poverty gap (<18 years old, poverty line: 50% of the median, fixed in 1989)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Total	1.7	1.3	2.4	2.8	3.6	0.993	0.001
Boys	1.7	1.4	2.4	2.8	3.7	0.986	0.002
Girls	1.8	1.3	2.4	2.7	3.5	0.992	0.001
2. By household type (total):							
Two parents	1.6	1.2	2.0	2.1	2.6	0.986	0.002
Single parent	15.4	9.1	16.0	17.2	18.4	0.894	0.041
3 generations	1.1	0.8	1.4	1.2	2.0	0.955	0.012
Other	1.7	1.7	2.3	4.1	5.3	0.948	0.014
By household type (boys):							
Two parents	1.6	1.2	2.0	2.2	2.7	0.994	0.001
Single parent	14.1	8.7	17.0	16.7	17.9	0.902	0.036
3 generations	1.1	0.8	1.5	1.2	1.9	0.983	0.003
Other	1.8	1.8	2.6	4.1	5.5	0.960	0.010
(b) By household type (girls):							
Two parents	1.6	1.1	2.1	2.1	2.4	0.940	0.017
Single parent	16.6	9.5	14.9	17.7	19.0	0.933	0.021
3 generations	1.2	0.9	1.3	1.2	2.1	0.891	0.042
Other	1.5	1.6	1.9	4.2	5.0	0.927	0.024

Table 20. Child poverty gap by age brackets (poverty line: 50% of the median)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Age: 0-3 years old							
Total	2.3	2.8	3.7	3.7	3.8	0.866	0.057
Boys	2.2	2.8	3.7	3.7	3.8	0.865	0.058
Girls	2.4	2.9	3.6	3.8	3.8	0.983	0.003
2. Age: 4-6 years old							
Total	1.9	2.2	3.0	3.2	2.8	0.978	0.004
Boys	1.9	2.3	3.1	3.3	2.7	0.994	0.001
Girls	2.0	2.1	2.8	3.1	2.9	0.954	0.012
3. Age: 7-9 years old							
Total	1.7	1.9	2.7	2.8	3.2	0.971	0.006
Boys	1.7	1.9	2.7	2.7	3.5	0.982	0.003
Girls	1.7	2.1	2.7	2.8	2.9	0.947	0.015
4. Age: 10-12 years old							
Total	1.4	1.7	2.3	2.5	3.1	0.990	0.001
Boys	1.4	1.8	2.3	2.6	3.2	0.996	0.000
Girls	1.4	1.6	2.2	2.3	3.0	0.975	0.005
5. Age: 13-15 years old							
Total	1.4	1.4	2.1	2.0	2.9	0.962	0.009
Boys	1.3	1.4	2.2	2.0	2.8	0.977	0.004
Girls	1.6	1.5	2.0	2.1	2.9	0.942	0.017
6. Age: 16-18 years old							
Total	1.1	1.5	2.0	2.0	2.6	0.991	0.001
Boys	1.1	1.7	1.8	1.8	2.5	0.977	0.004
Girls	1.2	1.3	2.2	2.2	2.7	0.945	0.015

Table 21. Child poverty gap by age bracket (poverty line: 50% of the median, fixed in 1989)

	1989	1994	1999	2004	2009	Spearman rank correlation	p-value
1. Age: 0-3 years old							
Total	2.4	1.8	3.2	3.7	4.4	0.998	0.000
Boys	2.3	1.8	3.3	3.7	4.5	0.993	0.001
Girls	2.5	1.9	3.2	3.7	4.3	0.999	0.000
2. Age: 4-6 years old							
Total	2.0	1.4	2.7	3.2	3.3	0.975	0.005
Boys	1.9	1.5	2.8	3.3	3.2	0.966	0.007
Girls	2.0	1.4	2.5	3.1	3.4	0.995	0.000
3. Age: 7-9 years old							
Total	1.7	1.3	2.4	2.8	3.7	0.991	0.001
Boys	1.7	1.2	2.4	2.7	4.0	0.975	0.005
Girls	1.7	1.4	2.4	2.8	3.3	0.994	0.000
4. Age: 10-12 years old							
Total	1.4	1.2	2.0	2.4	3.5	0.966	0.007
Boys	1.4	1.3	2.1	2.6	3.6	0.969	0.006
Girls	1.4	1.1	2.0	2.2	3.4	0.959	0.010
5. Age: 13-15 years old							
Total	1.6	1.1	1.8	2.1	3.2	0.949	0.014
Boys	1.4	1.0	1.9	2.0	3.2	0.952	0.013
Girls	1.3	1.0	2.0	2.0	3.2	0.993	0.001
6. Age: 16-18 years old							
Total	1.1	1.1	1.8	2.0	2.9	0.970	0.006
Boys	1.1	1.3	1.6	1.8	2.9	0.923	0.025
Girls	1.2	0.9	2.0	2.2	3.0	0.984	0.002

Note: disposable income is in real 2000 prices.