Appendix G

Work-Related Expenses

Appendix G
Work-Related Expenses

Many families with children must pay for childcare in order to work. In addition, the expense of getting to and from work is an unavoidable cost for nearly every jobholder. These nondiscretionary costs limit the ability of families to meet the needs that are represented in the poverty threshold. The National Academy of Sciences (NAS) recommended that work-related expenses be deducted from family resources.[1] The American Community Survey (ACS) does not include data on childcare costs or commuting costs, nor does it contain all the data needed to calculate these expenses. This appendix describes the methodology used to calculate and impute NYCgov childcare costs and commuting costs.

Childcare Costs

NYC Opportunity deducts the cost of childcare expenditures from income in the construction of our poverty measure. Because we are only interested in out-of-pocket childcare costs that are nondiscretionary – that is, necessary for work – we only count the expenses incurred when all the parents are working. If one or both parents are not working, their childcare spending is not counted. Since childcare spending is not reported in the ACS, NYCgov relies on a statistical matching technique to integrate an independent source of information on childcare costs into the ACS. Specifically, a predictive mean match (PMM) is employed to impute childcare costs from the Survey of Income and Program Participation (SIPP) to the ACS.

Source Data: SIPP

The SIPP is a nationally representative longitudinal panel survey that offers fine-grained details on short-term dynamics of labor force participation, income, and government transfer program eligibility and participation, as well as household composition.

In 2013 the U.S. Census Bureau introduced a major redesign of the SIPP, starting with the 2014 panel. The changes in survey design created a significant break in

1 Constance F. Citro and Robert T. Michael (eds). *Measuring Poverty: A New Approach*. Washington, DC: National Academy Press. 1995, pp. 70–71.

the series, not only to our childcare estimates but ultimately to our historic poverty data. Key changes in SIPP methodology include 1) a shift to an annual interview with a 12-month calendar year reference period and a four-month recall period, and 2) an expansion of core contents to include supplemental information previously covered only in a few topical modules (e.g., childcare related questions). In addition, the Census Bureau redesigned childcare-related questions. In earlier SIPP panels, a reference parent was asked about the childcare arrangement regularly used the prior month for each child and the costs of each care arrangement in a typical week for each child. Unlike prior panels, a reference parent in the 2014 panel was asked to identify the type of childcare arrangement they regularly used for a typical week in December. Childcare payment information also was collected for all children under age 14 and for all types of childcare.

We utilized data from wave 4 of the 2004 panel, wave 8 of the 2008 panel, and the four waves of the 2014 SIPP panel to construct a historic donor data series of childcare costs. We then matched those constructed series to the relevant ACS data year. Specifically, data from wave 1 of the 2014 SIPP panel covers calendar year 2013 and thus is matched to the 2013 ACS. Each of the subsequent waves of the 2014 SIPP panels are used for ACS data years 2014 through 2016, respectively. Because the 2018 SIPP panel was not released at the time we were preparing this report, the data from wave 4 of the 2014 panel are also used for the ACS data years 2017 and 2018. Childcare costs are raised to 2017 and 2018 levels using appropriate inflation adjustments for each year.[2]

For the ACS data years 2005–2012, we pool data from two SIPP childcare modules: wave 4 of the 2004 panel and wave 8 of the 2008 panel.[3] The pooled data is then repeatedly matched to each year of ACS data from 2005 to 2012 by deflating or inflating the relevant values.

Our donor sample is limited to working families (i.e., families with parent[s] that work at least part of the year),[4] have at least one child 12 years of age or younger,[5] and live in an urban area.[6] Work criteria are necessary, given that we are measuring work-related out-of-pocket childcare costs. We only count childcare costs for children 12 years of age and under to align childcare cost impacts with families potentially eligible for some refund of those costs through the child and dependent care tax credit. Substantial geographic variation exists in average childcare prices, which mostly reflects parents' ability to pay.[7] Since we are using a nationally representative sample of childcare costs, limiting the sample of donors to urban areas is crucial for maintaining maximum comparability to New York City.

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2 The two income variables (total person income and earned income) are annualized and inflated using the ratio of the Consumer Price Index (CPI) all-items index for the ACS data set year and the periods covered by the SIPP panels. These data are aggregated from the person level to the family level. Childcare costs are inflated using the CPI childcare cost index.

3 The sample in each wave consists of four rotation groups, each interviewed in a different month. For wave 4 of the 2004 panel, interview months were February through May 2005; for wave 8 of the 2008 panel, interview months were January through April 2011.

4 The NYCgov childcare model caps childcare costs by the weeks worked of the spouse that works less. If one spouse does not work, the family will have no childcare costs. To reflect this in the imputation procedure, we narrowed the SIPP sample to mirror the rules we apply to ACS observations.

5 The age range is consistent with the tax code, which provides childcare tax credits for children 12 years of age and under.

6 See the previous years' technical appendix for detailed information on how comparable families are created for the match between the ACS and SIPP data.

7 Elizabeth E. Davis and NaiChia Li. "Regional Variation in Child Care Prices: A Cross-State Analysis." 2009. *The Journal of Regional Analysis & Policy*. No. 1100-2016-89707.

Matching SIPP and ACS Cases

To impute childcare costs from SIPP to ACS families, we use predictive mean matching – a statistical matching technique that uses the nearest neighbor algorithm to identify and link similar families across data sets. This statistical matching method typically involves estimating a regression model to construct a distance function. It then matches a record in the recipient file to a record with the smallest distance in the donor file. The most promising aspect of the method is that it replicates the distribution of real values better than a regression-based imputation. However, given that the method uses a prediction model to generate a match between donor and recipient cases, overfitting (i.e., out-of-sample prediction errors) is a concern since it can lead to undesirable matches.

To further complicate matters, data on childcare costs pose challenges for econometric modeling. Childcare expenses are skewed to the right with clumping at zero which makes it difficult to build a prediction model that performs well across different data points.To improve prediction accuracy we use a two-part model that offers a more flexible framework for modeling mixed discrete-positive distributions. First the models estimate the probability of incurring positive childcare costs, then they estimate the amounts spent on childcare – conditional upon the cost being positive. The binomial distribution of childcare expenditure is modeled using a probit model and the continuous component is modeled using a generalized linear regression model. Following work by Iceland and Ribar,[8] we estimate separate regressions for the two parent and sole parent subsamples in the SIPP.

There is no shortage of studies examining parents' childcare decision-making. The literature documents that both choice preference and choice constraints (e.g., parental, informal, or center-based childcare arrangements) vary by family characteristics,[9] including number of children, children's ages, and family resources. They also vary by demographic characteristics such as education, race and ethnicity, maternal employment, and English proficiency;[10] employment characteristics such as irregular work shifts;[11] and family/household structures such as the number of working adults, family size, and presence of adult family members in the household.[12]

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8 John Iceland and David C. Ribar. "Measuring the Impact of Child Care Expenses on Poverty." Paper presented at the 2001 Population Association of America (PAA) meetings in Washington, D.C., March 29, 2001.

9 For association between a child's age and preference for home-based care (parental and relative care), see: Rose K. Kensinger and J. Elicker. 2008. "Parental Decision Making about Child Care." *Journal of Family Issues* 29(9): 1161–1184; Rose K. Kensinger and J. Elicker. 2010. "Maternal Child Care Preferences for Infants, Toddlers, and Preschoolers: The Disconnect Between Policy and Preference in the USA." *Community, Work & Family* 13(2): 205–229; and A. Chaudry et al. 2011. *Child Care Choices of Low-Income Working Families*. Washington, DC: Urban Institute.

10 A.S. Johansen, A. Leibowitz, and L.J. Waite. 1996. "The Importance of Child-Care Characteristics to Choice of Care." *Journal of Marriage and the Family*, 759–772; L.A. Leslie, R. Ettenson, and P. Cumsille. 2000. "Selecting a Child Care Center: What Really Matters to Parents? *Child and Youth Care Forum* 29(5), October: 299–322. Springer Netherlands; Rose K. Kensinger and J. Elicker. 2008. "Parental Decision Making about Child Care." *Journal of Family Issues* 29(9): 1161–1184; M.L. Van Horn et al. 2001. "Reasons for Child Care Choice and Appraisal Among Low-Income Mothers." *Child and Youth Care Forum* 30(4), August: 231–249. Springer Netherlands; E.P. Pungello and B. Kurtz-Costes. 1999. "Why and How Working Women Choose Child Care: A Review with a Focus on Infancy." *Developmental Review* 19(1): 31–96; L.A. Riley and J.L. Glass. 2002. "You Can't Always Get What You Want – Infant Care Preferences and Use among Employed Mothers." *Journal of Marriage and Family* 64(1): 2–15; and D.M. Blau and P.K. Robins. 1991. "Turnover in Child Care Arrangements." *The Review of Economics and Statistics*, 152–157.

11 A. Chaudry et al. "Child Care Choices of Low-Income Working Families." Washington, DC: Urban Institute; Julia R. Henly and Susan Lambert. 2005. "Nonstandard Work and Child-Care Needs of Low-Income Parents." *Work, Family, Health, and Well-Being*, 473–492. Mahwah, NJ: Lawrence Erlbaum Associates Inc.; Julia R. Henly and S. Lyons. 2000. "The Negotiation of Child Care and Employment Demands Among Low-Income Parents." *Journal of Social Issues* 56(4): 683–706; Julia R. Henly, H.L. Shaefer, and E. Waxman. 2006. "Nonstandard Work Schedules: Employer- and Employee-Driven Flexibility in Retail Jobs." *Social Service Review* 80(4): 609–634.

12 A.D. Witte, M. Queralt, and H. Long. 2004. *An Examination of the Child Care Choices of Low-Income Families Receiving Child Care Subsidies*. Wellesley, MA: Wellesley College, Department of Economics; D.A. Wolf and F.L. Sonenstein. 1991. "Child-Care Use among Welfare Mothers: A Dynamic Analysis." *Journal of Family Issues* 12(4): 519–536; H. Matthews and D. Jang. 2007. "The Challenges of Change: Learning from the Child Care and Early Education Experiences of Immigrant Families." 2 May. https://www.clasp.org/publications/report/brief/challenges-change-learning-child-care-and-early-education-experiences; A.C. Huston, Y.E. Chang, and L. Gennetian. 2002. "Family and Individual Predictors of Child Care Use by Low-Income Families in Different Policy Contexts." *Early Childhood Research Quarterly* 17(4): 441–469.

A set of predictors is selected on the basis of existing literature with the assistance of a Least Absolute Shrinkage and Selection Operator (LASSO).[13] To build a prediction model that performs well on as many data points as possible we create multiple features out of commonly available variables across the two data sets, e.g., 20 parental age groups created out of a continuous age variable. The flip side of having multiple features is the risk of a rise in overfitting as dimensionality increases. This necessitates careful feature selection.

LASSO is useful for identifying the best set of predictors that result in minimal prediction errors, yet we did not use it to its full potential due to replicability issues.[14] We instead relied on LASSO results to determine which variables should be included to predict childcare spending but not to compute predicted values. As a result, the performance of our classification model diminished by a nontrivial percentage. The overall rate of correct classification for two parent and sole parent families is 78.4 percent and 71.5 percent, respectively. However, our binary classification model yields very low sensitivity rates (i.e., a measure of how accurately the true positive group is classified) for both two parent (42.7 percent) and sole parent (22.1 percent) groups (not reported in tables). Despite this, our classification model perfectly replicates clumping at zero for each subgroup of parents. As Table G.1 illustrates, the share of parents with positive childcare costs was 31 percent and 33 percent, respectively, for two parent and sole parent families in wave 4 of the 2014 panel of SIPP data. Those shares are reproduced in the ACS.

The regression output for childcare dollar values is summarized in Table G.2.[15] The regression coefficients are used to compute predicted values of childcare expenditures for both the SIPP and ACS parents. ACS parents are then matched with SIPP parents that have the closest predicted childcare costs. Matching algorithms are implemented with an additional constraint that explicitly requires a donor and recipient case to be matched within the same category of parent types: two parents, including cohabiting unmarried couples, and sole parents. The constraint is added to preserve potentially differential distributions of childcare expenditures. Once matching is completed, the actual weekly childcare cost reported by the SIPP observation is imputed to the matched ACS observation. Weekly childcare values are then adjusted to reflect annual costs. To calculate nondiscretionary childcare expenditures, we multiply the weekly value by the lowest reported number of weeks worked among the parents and cap the childcare costs for the family by the wages of the lower earning parent.

Figure G.1 visualizes how closely our imputation method reproduces the distributions of childcare data by parent types. Panel A compares the distributions of weekly childcare costs between the SIPP and imputed ACS data for two parent families and

13 For two parent families, the probit model includes a categorical variable designating parent's race and ethnicity, the maximum level of parents' education, work experience and the share of parents' income earned by mother, the number of children ages 0-5, age of youngest child, an indicator of linguistic isolation, presence of grandparents, sibling age 15 or over, and the number of non-working adults. For sole parent families, the classification model is specified as a function of demographic characteristics, number of children under age 5, a binary indicator of being self-employed and being a single mother, a log of earnings, number of hours of work, and categorical variables of parent's shift and marital status.

14 The glmnet package in R gives different results each time the cross validation runs to find the best lambda.

15 Regression results of our probit model are not reported here due to space limitations but are available upon request.

panel B shows the distributions for sole parent families. The dashed lines in each panel mark average childcare costs in each data set. Highly skewed distributions of childcare expenditures are fairly well replicated in the ACS for each parent type but with a higher mean, shorter peak at the lower end of the distribution, and wider variation. This implies that families in New York City on average pay larger amounts for childcare than families throughout the nation but the level of expenditures varies more in the city. Given that both average earning and childcare price is higher in the city than the nation (data not reported here), the larger average value of childcare costs in the ACS is not a surprising result.

What would be the most plausible explanation for greater cost variability in the augmented ACS data? Is it driven by families with higher incomes or lower incomes? We are particularly concerned about the quality of the match for low-income parents whose earnings are below $50,000 per year. Table G.3 reports aggregate childcare costs and the share of aggregate expenditure paid by low-income families with the accompanying population share. Note that the actual dollar values reported in Table G.3 are not comparable between the SIPP and ACS datasets, but the share of low-income parent expenditures are. Table G.3 rules out the possibility of overstating childcare costs for low-income families. In New York City, 16 percent of parents with positive childcare costs are low-income families, but approximately one fifth of the citywide aggregate childcare costs are borne by low income families. In comparison, just over 20 percent of parents in the United States with positive childcare costs are low income parents but their share of the expenditure is almost one third (28.3 percent) of the nation's aggregate total expenditure.

Table G.4 shows the distributions of the annualized values of non-discretionary childcare expenditures that are aggregated to the poverty unit level. Most of working families in New York City with children under 13 years old are estimated to have zero costs for non-discretionary childcare. Regardless of whether zero costs are included in the universe or not, the average childcare cost is always greater than the median value, which suggests a highly skewed distribution of childcare costs with a long tail on the right side.

Commuting Costs

To estimate work-related commuting cost, we utilize the ACS variables that provide information about means of transportation, travel time, usual weekly hours, vehicle occupancy, work location, and weeks worked in the past 12 months. We rely on administrative data to calculate the cost per trip of various modes of transportation. Listed below are the means of transportation and the cost per trip:

- Drove: $0.545 per vehicle mile – the Internal Revenue Service (IRS) standard mileage rate[16] for 2018, plus bridge and tunnel tolls
- Drove with Others: Divide all driving costs by number of carpoolers
- Motorcycle: IRS standard mileage rate with motorcycle rates for tolls

16 See: https://www.irs.gov/tax-professionals/standard-mileage-rates

- Bus, Subway, or Ferry: $2.46 per trip[17]
- Railroad: Average $88.05 per week for out-of-city work locations and $63.50 per week for in-city work locations[18]
- Taxi: Estimate each commute at $13.54[19]
- Walk, Bike, or Work from Home: No cost per trip
- Other Methods:[20] Assume a bus or subway fare of $2.46 per trip

Once we have established a cost per trip for each mode of transportation (other than railroad, which is already a weekly cost), we use the formula below to calculate the weekly commuting cost:

Weekly Commuting Cost = (Cost/Trip x Min ((WKHP/8 x 2), 14))

We assume an eight-hour work day and use the ACS variable "WKHP – Usual hours worked per week in the past 12 months" to calculate the number of days worked per week.[21] To account for a trip to and from work, we multiply the number of work days by two and cap the number of possible weekly trips at 14. We next multiply the cost per trip by the number of commuting trips per week to establish a weekly commuting cost. This is then multiplied by "WKW – Weeks worked in the last 12 months"[22] to establish the annual commuting cost. Table G.5 shows that 49.5 percent of all New York City commuters used either the subway or bus, with a median annual commuting cost of $1,230. The highest commuting costs were incurred by those taking a taxi, taking the railroad, or driving alone.

Impact of Work-Related Costs on NYCgov Poverty Rate

Panel A of Table G.6 illustrates the impact of work-related expenses on the poverty status of the total population. It shows the combined impact, as well as the individual impact, of both commuting costs and childcare expenditures between 2010 and 2018. Note that there is a significant break-in-series to our historic poverty data for the year 2013, influenced by the methodological change in various sub-components of NYCgov Incomes such as SNAP, HEAP, and MOOP that were implemented only to the year 2013 and onward. We will extend those methodological changes to years prior to 2013 in future reports. Thus, any uncovered pattern in time-trends data should be interpreted with caution.

17 Metropolitan Transportation Authority (MTA) increased fares from $2.50 in 2015 to $2.75 in 2016. We use $2.46 as the cost of a subway or bus trip, which is the average cost per ride of pay-per-ride, 7-day, and 30-day MetroCards, weighted by their usage for 2018. We assume that ferry riders take the free-of-charge Staten Island Ferry and then use an additional form of public transit.

18 A Long Island Railroad (LIRR) Zone 1 to Zone 1 weekly pass costs $60.75; a Zone 1 to Zone 4 pass, including out-of-city stations, costs $83.50. A weekly pass from Grand Central Terminal (GCT) to Harlem on Metro-North costs $57.50. A weekly pass from GCT to White Plains, NY, costs $85.75.

19 The cost of commuting to work by taxicab was updated in 2018 to reflect rising taxi fares. Prior to this year's report, the standard taxi commute was estimated to be $8 per ride using data from http://www.schallerconsult.com/taxi/taxifb.pdf. The most recent available data are from the 2018 TLC Fact Book, which publishes data for the years 2016–2018 (see https://www1.nyc.gov/site/tlc/about/fact-book.page). As no data were available from the TLC prior to 2016, a decision was made to extrapolate taxi fares from the $8 fare used in 2005 on an annual basis to the 2016 fare published by the TLC.

20 The ACS only asks for means of transportation to work if the respondent worked last week. We therefore assume a subway or bus fare for respondents who have worked in the past 12 months but not last week.

21 We round to the nearest whole number for the number of work days.

22 In 2008, the WKW variable was changed from the actual number of weeks to a range format. Since 2008, we have used the midpoint of each range in our calculations. We cap the number of weeks worked at 50 to account for sickness or vacation.

As expected, poverty rates are lower when we do not subtract work-related expenses from household income. The effect of commuting costs has grown slowly from 2011 to 2018, ranging from 1.6 to 1.8 percentage points as fares have increased. The impact of childcare expenses remains fairly stable over time. Childcare expenses increased poverty by 0.2 percentage points from 2010 through 2012. Starting in 2013, the average impact of childcare expense ticked up to 0.7 percentage points. This increase reflects a break-in-series to our historical childcare estimates resulting from changes in our donor dataset – i.e., SIPP – that was discussed in the "Source Data: SIPP" section above.

Panel B of Table G.6 shows the impact of work-related expense for persons living in working families with children. This is the population that would be most affected by work-related expenses; the percent by which commuting and childcare expenses affect their poverty rate is accordingly larger.

Table G.1

Share of Parents with Zero and Positive Childcare Costs in the SIPP and ACS

	2014 SIPP Wave 4 (Self-Reported)			2018 ACS (Predicted)		
	Sole Parent	Two Parents	Total	Sole Parent	Two Parents	Total
Zero Childcare Costs						
Number of Parents	400	1,342	1,742	1,081	2,467	3,548
Percent of Parents	67.1	69.1	68.6	67.2	69.1	68.5
Positive Childcare Costs						
Number of Parents	196	601	797	528	1,104	1,631
Percent of Parents	32.9	30.9	31.4	32.8	30.9	31.5
Total	595	1,944	2,539	1,608	3,571	5,179

Sources: American Community Survey Public Use Micro Sample as augmented by NYC Opportunity, and Wave 4 of the 2014 Panel of Survey of Income and Program Participation (SIPP), restricted to U.S. urban sample.
Notes: Sample comprised of ACS and SIPP families with at least one child under 13 and at least one parent working. Values are reported at the level of the designated parent.

Table G.2

Regression Model to Predict Dollar Amounts of Childcare Expenditure, Two Parent and Sole Parent Families, 2018

Panel A. Two Parent Families

	Coefficient	t-Statistic
Ethnicity		
Black (Non-Hispanic)	-15.3843	-0.4
Asian (Non-Hispanic)	30.2027	1
Hispanic, Any Race	30.6907	0.88
Other	112.3846	0.96
Maximum Education Level of Parents		
Completed High School	24.4065	0.45
Has Some College Education	52.4805	1.14
Completed College	43.4555	0.89
Language Isolated	-147.7548	-3.5
Non-Working Adults in Poverty Unit (PU)	-26.9687	-0.63
Employed Adults in PU	14.9005	0.38
Grandparents Living in PU	-23.0567	-0.28
Receives SNAP	36.8439	0.67
Self-Employed Parent in PU	-16.9838	-0.64
2 Children Age 0-5 in Family	-63.3560	-2.05
3 Children Age 0-5 in Family	115.7249	1.46
Age	13.6159	1.39
Age Squared	-0.1544	-1.29

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Table G.2 *(continued)*

Regression Model to Predict Dollar Amounts of Childcare Expenditure, Two Parent and Sole Parent Families, 2018

Panel A. Two Parent Families

	Coefficient	t-Statistic
Work Experience (Married Couples)		
One Full-Time Worker, One Part-Time Worker	-18.0470	-0.58
One Full-Time Worker, One Non-Worker	-123.1590	-1.85
Two Part-Time Workers	-50.0875	-0.73
One Part-Time Worker, One Non-Worker	-191.3716	-1.97
Share of Parents' Income Earned by Mother		
10%	129.4576	1.13
15%	117.3994	1.21
20%	-70.5729	-0.77
25%	-383.2303	-2.76
30%	46.9711	0.49
35%	352.5137	1.56
40%	-63.1073	-1.15
45%	207.7811	1.8
50%	42.3918	0.27
55%	74.3406	0.69
60%	-205.4793	-1.81
65%	77.5165	0.8
70%	-11.7364	-0.11
75%	-92.4277	-0.74
80%	126.9490	1.03
85%	55.8415	0.67
90%	-185.4606	-2.58
95%	95.9866	1.1
100%	51.6419	1.47

Continued on the following page

Table G.2 *(continued)*

Regression Model to Predict Dollar Amounts of Childcare Expenditure, Two Parent and Sole Parent Families, 2018

Panel A. Two Parent Families

	Coefficient	t-Statistic
Age of Youngest Child		
1	57.4294	1.29
2	49.0431	1.07
3	85.6471	1.68
4	-4.2908	-0.1
5	-15.6471	-0.35
6	-62.0409	-0.95
7	-165.0230	-2.61
8	-160.3695	-3.14
Total Work Hours of Parents		
20	61.2325	0.72
30	66.1967	0.45
40	48.2676	0.66
50	21.2595	0.26
60	17.4250	0.2
70	-19.6600	-0.21
80	35.6336	0.37
90	6.8509	0.07
100	9.7891	0.1
110	52.5169	0.49
120	-41.8697	-0.39
130	-66.9583	-0.56
140	-71.0420	-0.64

Continued on the following page

Table G.2 *(continued)*

Regression Model to Predict Dollar Amounts of Childcare Expenditure, Two Parent and Sole Parent Families, 2018

Panel A. Two Parent Families

	Coefficient	t-Statistic
Total Parental Earnings	0.0007	2.96
Interaction Between Share of Mother's Earning and Total Parental Earnings		
10%	-0.0011	-1.33
15%	-0.0010	-2.93
20%	0.0005	0.44
25%	0.0057	3.32
30%	-0.0023	-1.35
35%	-0.0031	-1.62
40%	-0.0009	-2.73
45%	-0.0013	-3.31
50%	0.0001	0.03
55%	-0.0008	-2.18
60%	0.0014	1.42
65%	-0.0009	-0.8
70%	0.0008	0.61
75%	0.0006	0.27
80%	-0.0014	-2.62
85%	0.0006	0.94
90%	0.0013	1.49
95%	-0.0005	-1.08
100%	-0.0004	-1.54
Intercept	-116.7538	-0.5

Source: 2014 Panel of Survey of Income and Program Participation (SIPP), Wave 4.
Notes: Dependent variable is weekly childcare expenditures in 2018 dollars. Sample is restricted to U.S. urban sample and comprised of SIPP families with at least one child under 13 and all parents working at least part of the year.

Continued on the following page

Table G.2 *(continued)*

Regression Model to Predict Dollar Amounts of Childcare Expenditure, Two Parent and Sole Parent Families, 2018

Panel B. Sole Parent Families

	Coefficient	t-Statistic
Ethnicity		
Black (Non-Hispanic)	-4.279922	-0.13
Asian (Non-Hispanic)	32.08137	0.92
Hispanic, Any Race	117.4303	1.95
Other	7.993223	0.15
Maximum Education Level of Parents		
Has Some College Education	27.19469	1.03
Completed College	-27.58085	-0.62
Employed Adults in Poverty Unit (PU)		
2	-46.97453	-1.39
3	42.0071	0.61
4	-111.4633	-1.93
5	113.2687	1.99
Language Isolated	-71.18534	-2.02
Grandparents Living in PU	53.94963	1.13
Presence of Sibling Age 15 +	-79.26755	-2.1
1 Child Age 0-5 in Family	-160.4505	-3.93
2 Children Age 0-5 in Family	-70.50039	-1.71
3 Children Age 0-5 in Family	0	
Self-Employed Parent in PU	-124.7896	-1.57
Receives SNAP	5.635664	0.19
Age	-17.38287	-1.19
Age Squared	0.2305736	1.14

Continued on the following page

Table G.2 *(continued)*

Regression Model to Predict Dollar Amounts of Childcare Expenditure, Two Parent and Sole Parent Families, 2018

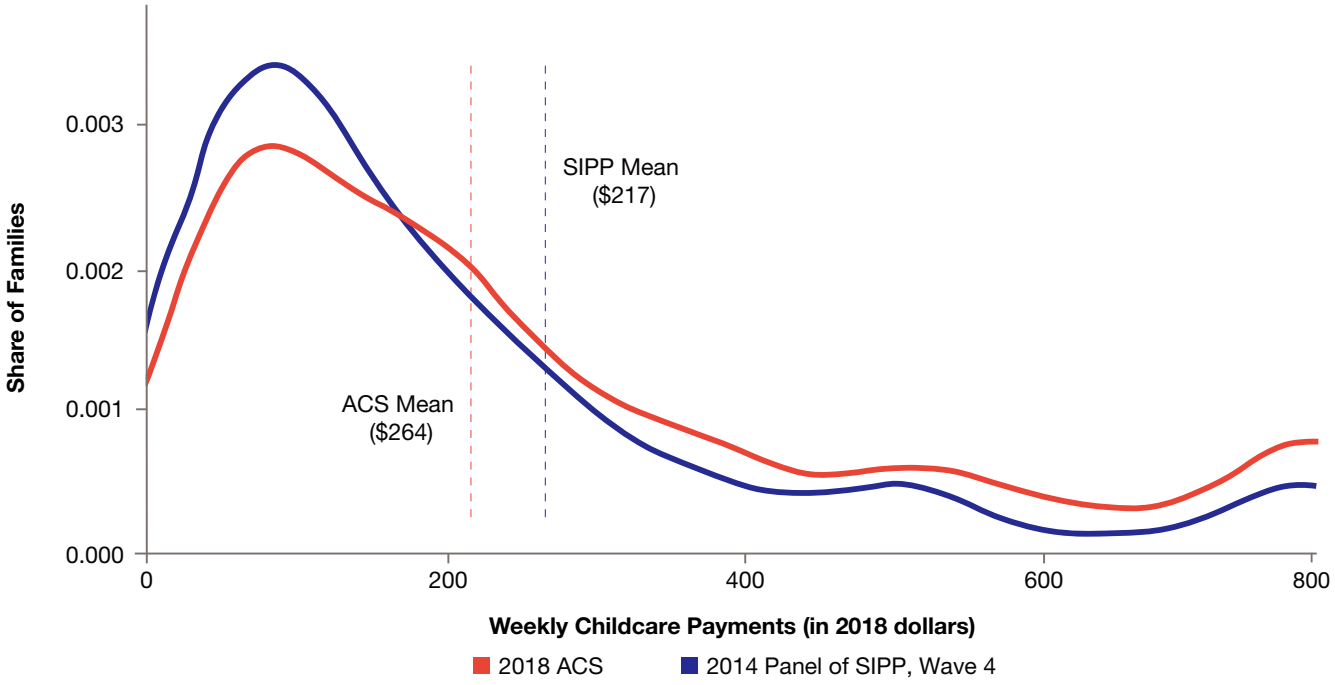
Panel B. Sole Parent Families

	Coefficient	t-Statistic
Total Parental Earnings	0.00109	2.25
Total Work Hours of Parents		
20	20.40522	0.42
30	20.00244	0.49
40	28.8585	0.68
50	92.49814	1.41
60	77.44585	1.39
80	112.3095	2.31
Female	5.303275	0.14
Marital Status		
Widowed	-231.0527	-3.29
Divorced	3.440695	0.06
Seperated	38.57791	0.44
Never Married	-25.56695	-0.48
Intercept	481.6906	1.94

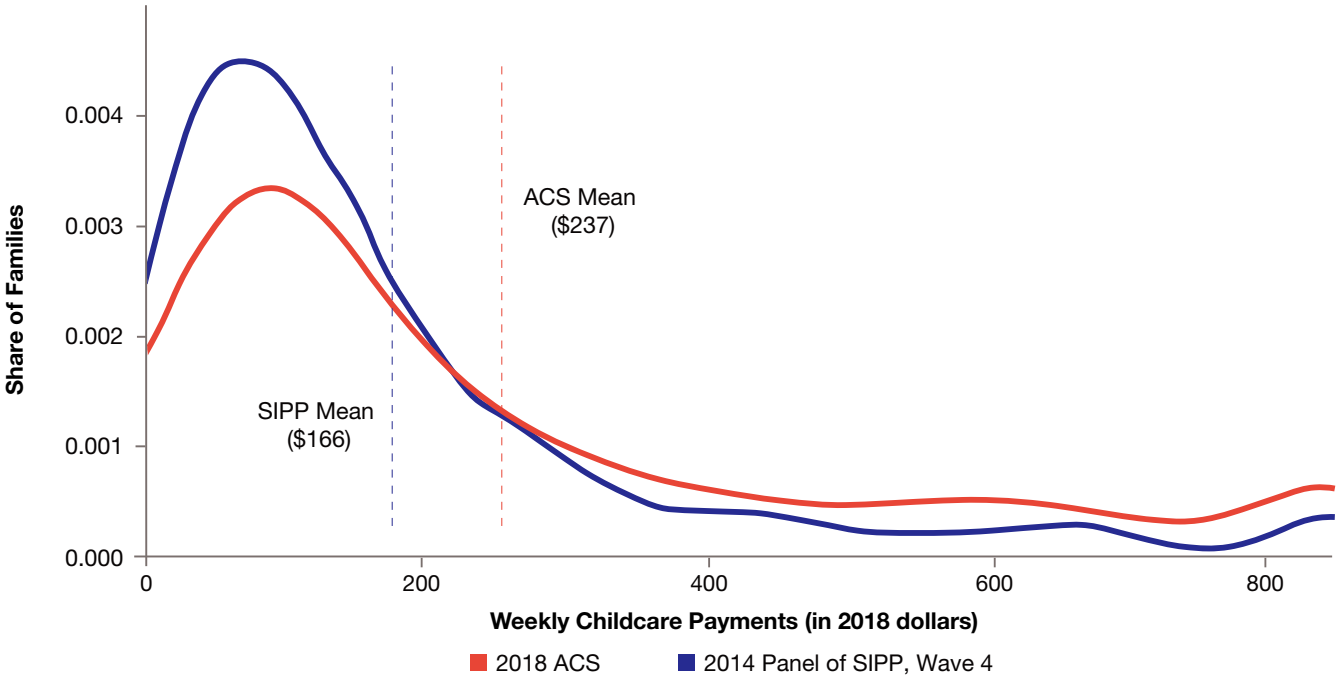
Source: Wave 4 of 2014 Panel of SIPP, restricted to U.S. urban sample.
Notes: Dependent variable is weekly childcare expenditures in 2018 dollars. Sample comprised of SIPP families with at least one child under 13 and all parents working at least part of the year.

Figure G.1
Distribution of Child Care Costs in the ACS and SIPP

Panel A. Weekly Child Care Payments: Two Parent Families



Panel B. Weekly Child Care Payments: Single Parent Families



Sources: American Community Survey Public Use Micro Sample as augmented by NYC Opportunity, and Wave 4 of the 2014 Panel of Survey of Income and Program Participation (SIPP), restricted to U.S. urban sample.
Notes: Sample comprised of ACS and SIPP families with at least one child under 13 and at least one parent working. Values are reported at the level of the designated parent.

Table G.3
Low-Income Working Families and Childcare Expenditure in the SIPP and ACS (In 2018 Dollars)

	Weekly Childcare Expenditure in Wave 4, 2014 SIPP Panel (Self-reported)	Annualized Childcare Expenditure in 2018 ACS (Imputed from SIPP)
Aggregate Childcare Expenditure (in Millions)	$1,668	$2,107
Total Childcare Costs Incurred by Low-Income Working Parents (Earnings up to $50K)	$473	$454
Percent of Expenditure Paid by Low-Income Working Parents	28.3	21.6
Share of Low-Income Working Parents	20.5	15.9

Sources: American Community Survey Public Use Micro Sample as augmented by NYC Opportunity, and Wave 4 of the 2014 Panel of Survey of Income and Program Participation (SIPP), restricted to U.S. urban sample.
Notes: Samples are comprised of ACS families with at least one child under 13 and at least one parent working. Values are reported at the level of the designated parent. Data weighted by ACS person weight.

Table G.4
Annual Non-Discretionary Childcare Expenditures, 2018

	All Working Parents	Working Parents with Non-Zero Expenditures
Mean	$3,584	$10,502
Percent Zero	65.9%	N.A.
Percentile		
5	$0	$1,100
10	$0	$1,500
25	$0	$3,300
50	$0	$7,500
75	$3,750	$15,000
90	$12,375	$25,575
95	$20,000	$35,000

Source: American Community Survey Public Use Micro Sample as augmented by NYC Opportunity.
Notes: Samples are comprised of ACS families with at least one child under 13 and at least one parent working. Values are reported at the level of the designated parent. Data weighted by ACS household weight.
N.A. - Not applicable because these families all have positive childcare costs.

Table G.5
Transportation Mode and Costs, 2018

Mode of Transport	Number of Commuters	Percent	Weekly Cost		Annual Cost	
			Median	Mean	Median	Mean
Drove Alone	887,298	20.4	$45	$57	$2,235	$2,776
Drove with Others	170,969	3.9	$21	$25	$931	$1,206
Bus	376,801	8.6	$25	$23	$1,230	$1,075
Subway	1,779,315	40.8	$25	$24	$1,230	$1,166
Railroad	51,878	1.2	$64	$72	$3,175	$3,348
Ferry	13,093	0.3	$25	$26	$1,230	$1,258
Taxi	46,709	1.1	$135	$142	$6,770	$6,841
Motorcycle	2,587	0.1	$52	$59	$2,607	$2,876
Bike	48,071	1.1	$0	$0	$0	$0
Walked	370,897	8.5	$0	$0	$0	$0
Worked at Home	180,949	4.2	$0	$0	$0	$0
Other Method	29,259	0.7	$25	$23	$1,230	$1,061
No Mode	399,999	9.2	$20	$19	$492	$577
All Modes	4,357,825	100.0	$25	$29	$1,230	$1,360
Percent Using Subway or Bus		49.5				
Cost per Subway or Bus Trip		$2.46				

Sources: American Community Survey Public Use Micro Sample as augmented by NYC Opportunity using data from the following: "Regional Travel-Household Interview Survey," New York Metropolitan Transportation Council-New Jersey Transportation Planning Authority, February 2000; IRS Standard Mileage Rates, https://www.irs.gov/tax-professionals/standard-mileage-rates; and The New York City Taxicab Fact Book, Schaller Consulting, March 2006.
Note: Those who commuted via "Other Method" or reported no mode but did have work within the last 12 months were assigned the average cost per subway or bus trip.

Table G.6
Impact of Work-Related Expenses on Poverty Rates, 2010–2018

(Numbers are Percent of the Population)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Panel A. Total Population									
Total NYCgov Income	20.6	20.8	20.7	20.5	20.2	19.6	19.0	19.3	19.1
Net of:									
Commuting Costs	19.2	19.2	19	18.6	18.2	17.6	17.2	17.4	17.2
Childcare Expenses	20.4	20.6	20.5	19.6	19.3	18.7	18.0	18.2	18.4
Total Work-Related Expenses	19	19	18.9	17.7	17.5	16.9	16.3	16.5	16.7
Marginal Effects									
Commuting Costs	1.5	1.6	1.7	1.9	2.0	2.0	1.9	1.8	1.8
Childcare Expenses	0.2	0.2	0.2	1.0	0.9	0.9	1.0	1.0	0.7
Total Work-Related Expenses	1.6	1.8	1.8	2.8	2.7	2.7	2.7	2.7	2.4
Panel B. Persons Living in Working Families with Children									
Total NYCgov Income	12.4	13.4	13.0	12.7	12.9	12.4	12.3	13.2	10.9
Net of:									
Commuting Costs	10.6	11.3	10.5	9.8	10.2	9.4	9.7	10.6	8.3
Childcare Expenses	11.9	12.9	12.6	10.6	10.7	10.3	10.0	10.9	9.5
Total Work-Related Expenses	10.2	11	10.2	7.9	8.5	7.8	7.8	8.7	7.2
Marginal Effects									
Commuting Costs	1.8	2.1	2.5	3.0	2.7	3.1	2.6	2.6	2.6
Childcare Expenses	0.5	0.5	0.4	2.1	2.2	2.2	2.3	2.3	1.4
Total Work-Related Expenses	2.2	2.4	2.8	4.8	4.4	4.7	4.5	4.5	3.7

Source: American Community Survey Public Use Micro Sample as augmented by NYC Opportunity.