

The Pennsylvania State University

The Graduate School

**DO COUPLES OUTSOURCE THEIR DOMESTIC LABOR
UPON RECEIVING AN INCOME SHOCK?
EVIDENCE FROM THE ALASKA PERMANENT FUND DIVIDEND**

A Thesis in

Sociology and Demography

by

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ABSTRACT

Though household income differences in domestic labor outsourcing are well documented, with higher-income couples outsourcing at higher rates, a potential causal link between income and outsourcing has not been established. Using the Alaska Permanent Fund Dividend (PFD) as a natural experiment and data from the 1996-2020 waves of the Consumer Expenditure Survey, I test whether different-gender couples use a positive income shock to outsource their domestic labor. I examine whether there are different effects by type of labor (yardwork, cleaning and laundry, childcare, or adultcare) and by couples' income level. I consistently find null effects, meaning that couples do not outsource more after receiving an income shock, suggesting that couples prioritize other forms of spending over reducing their housework and carework demands. I discuss potential explanations for these findings in the context of continued gender inequalities within different-gender couples.

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Introduction

Though domestic labor outsourcing has been described as a solution to reducing gender inequalities within couples (Platzer, 2006), many different-gender couples in the United States do not outsource, and there exist large income disparities between those that do and those that do not outsource (de Ruijter et al., 2005; Schneider & Hastings, 2017; Treas & de Ruijter, 2008). *Domestic labor outsourcing* involves paying for services to replace time spent in housework, carework (childcare and adultcare), and yardwork (Bittman et al., 1999). Gender disparities in domestic labor persist, with women shouldering the bulk of the responsibility (Bianchi et al., 2000; Lachance-Grzela & Bouchard, 2010; Pailhé et al., 2021; Perry-Jenkins & Gerstel, 2020), even though their labor force participation and education have increased since the 1960s (U.S. Bureau of Labor Statistics, 2021). Housework can be tedious and burdensome (Kroska, 2003; Spitze & Loscocco, 2000), and domestic labor demands may limit time for paid employment, especially for mothers (Bianchi et al., 2012; Hook, 2010). A dearth of supportive work-family policies in the U.S. further contributes to couples' inability to fulfill domestic labor demands in an egalitarian manner (Pedulla & Thébaud, 2015). Income inequality also limits who can afford to outsource (Schneider & Hastings, 2017). However, a potential causal link between a couple's income and whether they outsource their domestic labor has not been established.

Previous research suggests that both cultural beliefs and structural constraints matter in a couple's decision to outsource, and in which domestic labor tasks they outsource. The symbolic gendered meaning of domestic labor can make couples reluctant to outsource depending on their beliefs and preferences (Kornrich, 2012). However, cost may be a more prohibitive barrier to outsourcing, as high-income couples are the most likely to outsource (Baxter, 2002; Cohen, 1998; Craig & Baxter, 2014; Oropesa, 1993). It is unclear within the literature whether high-income

couples outsource in greater numbers because they can afford to, or because they view outsourcing as an appropriate response to their domestic labor demands (Baxter et al., 2009). High-income couples may be able to “afford” gender egalitarianism within their relationships, but to date no studies have tested whether low- and middle-income couples in the U.S. would outsource more if it were more affordable.

Using consumer expenditure data and a natural experiment, this study addresses two main research questions: first, how does a positive and exogenous income shock affect a household’s likelihood to outsource, and will this response vary by outsourcing type? Second, how will this response vary across income level? I exploit the long-standing existence of the Alaska Permanent Fund Dividend (PFD) as a natural experiment and use longitudinal household expenditure data from the 1996-2020 waves of the Consumer Expenditure Survey (CEX) to estimate the potential causal effect of a positive income shock on different-gender couples’ outsourcing using a differences-in-differences design. I then examine whether the changes in couples’ outsourcing behaviors are gendered based on changes in monthly yardwork, cleaning and laundry, childcare, and adultcare outsourcing.

Outsourcing may equalize the gender division of labor within couples, making it relevant to examine how increasing the affordability of outsourcing may increase outsourcing itself. Though the positive income shock caused by the PFD could act as a way for Alaskan couples to better realize their ideal outsourcing level, especially for low- and middle-income couples, my findings demonstrate the persistence of gender inequalities in the domestic sphere. Overall, I find that couples do not outsource more after receiving the income shock, though high-income couples outsource yardwork more. Domestic labor, and in particular “women’s work”, continues to be devalued with respect to other spending decisions in different-gender couples.

Background

Gender, housework, and domestic labor outsourcing

Domestic labor outsourcing blurs the boundary between the home and market, allowing couples to reorganize their gender division of labor by paying for services that replace their food production, yardwork, cleaning and laundry, and care work (Bittman et al., 1999). However, excluding food outsourcing, less than half of different-gender couples in the United States regularly outsource their housework, yardwork, or carework (Consumer Expenditure Survey 1996-2020). Outsourcing may reduce time pressures (Craig et al., 2016), and may help to equalize the gender division of labor within different-gender couples (Deutsch et al., 2007; Windebank & Martinez-Perez, 2018), though evidence is mixed (Craig & Baxter, 2014; Killewald, 2011). Research has demonstrated how family policies and institutional logics (Estes et al., 2007; Hook, 2010; Ruppanner & Maume, 2016), as well as women's relative income and time pressures (Bittman et al., 2003; Carlson & Lynch, 2017; Gupta, 2006), may be related to the gender division of housework, which could provide some insight into the factors that drive outsourcing disparities. This has implications for our understanding of the gender division of labor within couples, which scholars have argued may be set prior to union formation itself (Baxter et al., 2010).

The domestic sphere is a gendered site of production where the performance of household chores and care responsibilities reaffirms social roles of masculinity and femininity (Berk, 1985; Ferree, 1990; West & Zimmerman, 1987). Following the literature on gender and domestic labor that classifies childcare and adultcare, laundry, and cleaning as *female-typed* and yardwork as *male-typed* (de Ruijter et al., 2005; Kroska, 2003), I term the outsourcing of female-typed tasks as *female-typed outsourcing* and the outsourcing of male-typed tasks as *male-typed outsourcing*.

Though domestic labor outsourcing involves the exchange of money for services in the market, these terms emphasize the gendered symbolism imbued in both domestic labor and outsourcing.

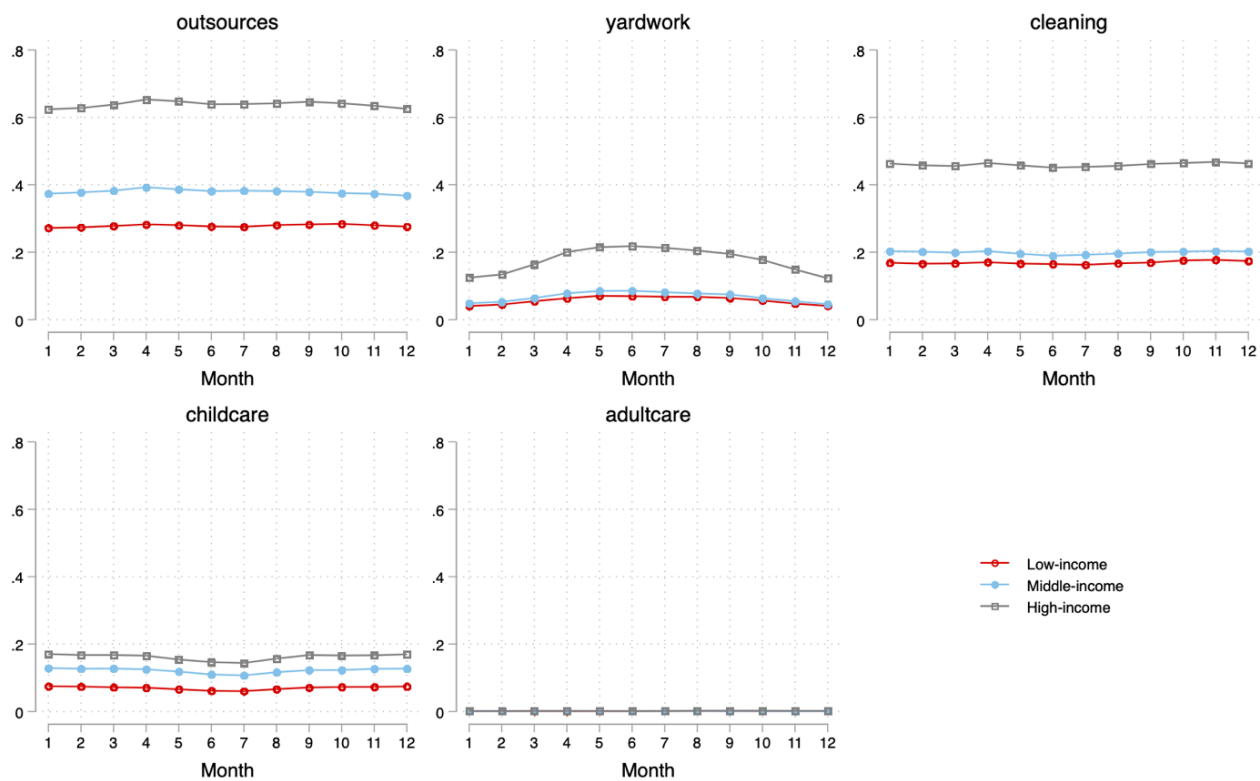
Challenges of measuring the causal effect of income on outsourcing

The link between income and domestic labor outsourcing may be confounded by unmeasured characteristics that positively predict both income and outsourcing. However, disentangling the influence of cultural factors from structural constraints on whether different-gender couples outsource their domestic labor is complicated. Scholars find that generalized trust (Aassve et al., 2016; de Ruijter et al., 2003; de Ruijter & van der Lippe, 2009), personal preferences (van der Lippe et al., 2013), and egalitarian gender attitudes (Baxter et al., 2009; Berk, 1985) positively predict outsourcing, yet these predictors are also correlated with being a high-income couple (Bjørnskov, 2007; Stephany, 2017; Usdansky, 2011), making it difficult to establish the direction of causality of income on outsourcing. Income may allow couples who were already more likely to outsource the opportunity to pay for domestic services, but this is difficult to test without studying how making outsourcing more affordable for low- and middle-income couples might cause them to outsource.

Household income is directly associated with outsourcing through two main mechanisms. First, through income inequality, which shapes who can afford to outsource their domestic labor (Gonalons-Pons, 2015; Schneider & Hastings, 2017), demonstrating the importance of the *relative* rather than *absolute* cost of outsourcing (Heisig, 2011). Second, there is a “household wealth effect” whereby more income allows couples to afford to outsource a greater level of many different tasks (Cooke, 2010; Craig & Baxter, 2014). The ability to outsource varies by the task, as some are easier or cheaper to outsource (Killewald & Gough, 2010).

High-income couples may outsource more because they can afford to. Household income differences in outsourcing are well documented, with higher-income couples outsourcing at higher rates (Craig & Baxter, 2014; Kornrich & Roberts, 2018; Schneider & Hastings, 2017). See Figure 1 for a visual depiction of this trend. They may also have more objective demands such as longer work hours, bigger homes to clean, or larger yards to be tended. High-income couples also have fewer financial constraints that allow them to outsource regardless of the price, and to outsource more regularly.

Figure 1. Proportion of Couples who Outsource, by Type of Outsourcing Expenditure, Across Month and Couples' Income Rank



Source: 1996-2020 Consumer Expenditure Survey. Note: Author's calculations. January = 1, December = 12.

Low- and middle-income couples, by contrast, may be unable to afford outsourcing (Windebank, 2010), or may not be able to afford a level of outsourcing that would reduce their domestic burden (Killewald & Gough, 2010). Research has found that low-income households do outsource, but to a much smaller extent than their more affluent peers (Bittman et al., 1999). Low- and middle-income couples may forgo outsourcing when they cannot afford to outsource the amount of task replacement that they need. For instance, a couple may wish to outsource their cleaning but may not be able to afford to outsource it as often as they need. However, it is still not clear whether income is directly associated with outsourcing (i.e. through affordability), or if the association is indirect (i.e. through its association with other characteristics favorable to outsourcing).

Empirical Case: The Alaska Permanent Fund Dividend

To test if there is a causal relationship between income and outsourcing, I use the Alaska Permanent Fund Dividend (PFD) as an example of a positive income shock (i.e. extra income that is exogenous to the household) that exists for couples of all income levels in the United States. The PFD is a resource dividend that has been paid once per year in October since 1982. Because of its long history and existence as the only cash transfer of its kind in the United States, the PFD has been studied extensively with regards to how a positive income shock may affect fertility (Cowan & Douds, 2022; Yonzan et al., 2020), spending on children (Amorim, 2021), crime (Dorsett, 2021; Watson et al., 2020), labor market attachment (Jones & Marinescu, 2022), and income inequality (Kozminski & Baek, 2017). Since 1985, less than three percent of the annual growth of the Alaska Permanent Fund has come from the state oil revenue which had initially capitalized the fund; the remaining growth comes from earnings reinvestment. Thus, the amount

of the PFD is not tied to Alaska's economic conditions, so its amount is exogenous to Alaskan households and not affected by fluctuations in oil prices (Watson et al., 2020). The annual disbursement amount changes each year, and there is no anticipatory spending in advance of the October payment (Kueng, 2018). Eligibility is near-universal, and program take-up rate is consistently high. Previous research has shown that household spending on nondurable goods and services is sensitive to the PFD payout, with a spending increase of about eight percent of pre-tax income (Kueng, 2015). See Appendix Figure A1 for information on the dividend amount and take-up rate over time.

The current study

In this study I employ two competing mechanisms which I term the *gender perspective* and the *affordability perspective* to consider how different-gender couples may respond to a positive income shock. These mechanisms are informed by economic and sociological theories of housework and carework. The first, the *gender perspective*, recognizes that domestic labor is devalued and often invisible, rendering it not a priority to replace through outsourcing. Gender remains a primary cultural frame that shapes how men and women divide their domestic labor (Ridgeway, 2009), and women may feel it is their gendered duty to perform intensive childcare (Hays, 1996). Gender inequality within couples is important for the decision-making process on outsourcing, and what gender-typed labor is outsourced (Raz-Yurovich, 2014). This perspective also accounts for the fact that in some different-gender couples, “gender trumps money”, meaning that women who out-earn or out-work their male partners may still spend more time than them in domestic labor. The mechanism behind this has been termed “gender display” or “gender deviance neutralization” (Bittman et al., 2003; Brines, 1994; Davis & Greenstein, 2004; Tichenor, 2005).

The *affordability perspective*, on the other hand, predicts that couples will outsource if they desire to and have the financial means to do so. Many couples may not outsource because financial constraints limit their ability to do so, or they may not be able to afford tasks with a consistency that would be meaningful. Couples may also have work schedules that are too unpredictable to allow it. These mechanisms help us understand how couples' outsourcing responses could vary across domestic labor task and by income rank.

Will couples outsource?

A positive income shock could allow couples to outsource their domestic labor, but the symbolic gendered meaning of domestic labor may discourage them from doing so. Here, the *gender perspective* recognizes that domestic labor's devaluation and association with "women's work" has implications for how an income shock may affect outsourcing. Female-typed tasks may be the most attractive to outsource (Treas & de Ruijter, 2008) as they are considered less desirable to perform because they are more time-consuming and routine as compared to male-typed tasks (Coltrane, 2000; Hook, 2010). The cultural norms and structural constraints dictating the gender division of paid and unpaid labor are strong, meaning that female-typed tasks may be less likely to be outsourced regardless of a couple's time demands. Couples may enter a relationship with an understanding of the time input and division of labor that they prefer (Baxter et al., 2010), and an income shock may not be enough to rearrange a couple's gender division of labor. Therefore, barring individual preferences regarding men and women's enjoyment of various tasks and cultural norms dictating the gender division of labor, we should expect that couples will likely prioritize male-typed tasks (i.e. yardwork) or those with the weakest connection to gendered norms of caregiving (i.e. cleaning and laundry).

Regardless of a couple's cultural beliefs or preferences, a positive income shock could encourage couples to outsource. The *affordability perspective* predicts that the income shock would make outsourcing more affordable, and thus we could expect that they would outsource more in the time after receiving the money. Couples may want to reduce their time spent in domestic labor and would outsource some quantity of it if they could. The tasks easiest to replace—yardwork and cleaning/laundry—should be outsourced relative to childcare and adultcare after receiving the income shock.

Income heterogeneity in outsourcing

It is quite likely that the effects of a positive income shock on outsourcing would be heterogeneous across couples' income, but the magnitude and direction of the effects is not known. The *gender perspective* does not offer a clear prediction of the potential effects across income, as existing research offers mixed findings regarding the relationship between couples' income level and their gender attitudes and practices. High-income couples may be more able to “afford” gender egalitarianism because they are better situated to construct their preferred work-family arrangement (Cherlin, 2016), but scholars have also argued that high-income couples use their class advantage to “do gender” while lower-income couples “undo gender” in how they balance work and family demands (Gerstel & Clawson, 2014; Usdansky, 2011). However, it is difficult to assume gendered intentions from expenditure data, as increased outsourcing by couples across different income levels may reflect a variety of gender attitudes and re-configurations of work-family arrangements.

The *affordability perspective* offers two main predictions regarding how a positive income shock may have heterogeneous effects on outsourcing based on couples' income. The first assumes

that low- and middle-income couples will outsource more relative to high-income couples after a positive income shock because the extra money will remove the financial barrier that previously existed for them. However, an alternate event may occur: high-income couples may outsource more while low- and middle-income couples prioritize “catching up” by paying down debt or saving. High-income couples have fewer financial restrictions year-round and already outsource more, and the relative cost of outsourcing may thus be lower. Outside the U.S. context, high-income Swedish and German couples took more advantage of tax reforms intended to promote domestic labor outsourcing than did lower-earning couples (Halldén & Stenberg, 2018; Shire et al., 2017). Studies that exploit local variation in the cost of outsourcing have also found that highly unequal contexts allow relatively higher-income couples to afford to outsource while their relatively lower-income peers cannot (Schneider & Hastings, 2017). Additionally, there is a degree of uncertainty involved with outsourcing, particularly for childcare and adultcare, where the safety of children and elderly family members is especially relevant (Raz-Yurovich, 2014). Finding reputable and reliable workers at an affordable price may be difficult, so high-income couples may be best positioned to ensure that they purchase the highest quality of services. Low- and middle-income couples, on the other hand, may continue to rely on family members to provide care or maintain their existing division of labor.

Theoretical predictions

To empirically test the theoretical perspectives described above, I put forward two hypotheses regarding the effect of a positive income shock on outsourcing, and across income. I first examine the effects on outsourcing overall and on the different types of outsourcing. Informed by the *gender perspective*, I expect that cultural norms surrounding gender and domestic labor as

well as structural constraints will prevent a positive income shock from increasing couples' outsourcing.

Hypothesis 1: A positive income shock will not affect whether couples outsource, or what type of labor they outsource. Any increases will be concentrated in the tasks that are easiest to replace, i.e. male-typed labor.

However, couples are subject to different structural constraints based on their income level. Following the *affordability perspective*, I expect there will be heterogeneity in response by couples' income level.

Hypothesis 2: High-income couples will increase their outsourcing by the greatest degree after a positive income shock relative to low and middle-income couples.

Method

Data

Data come from the 1996-2020 waves of the Interview Survey portion of the Consumer Expenditure Survey (CEX), a longitudinal household dataset that provides information on expenditures, income, and other characteristics of American households. The data are collected retrospectively according to the previous three month's expenditures in a variety of categories. Data are organized at the month-year level (couple month-years), and there are up to 12 months of information on spending for each couple. For simplicity, I refer to a given characteristic of the female partner as "her characteristic" and of the male partner as "his characteristic". I also refer to couples who live in the 49 states other than Alaska as the "Lower 49".

I made several sample restrictions to obtain a final sample of different-gender couples living in the 50 United States who were of the ages 24-64. I use the subscript M to denote couple-

months, and the subscript A to denote Alaskans. My initial sample consisted of $N = 120,495$ total couples ($N_M = 1,085,263$ total couple-months), which includes $N_A = 1,679$ Alaskan couples ($N_{AM} = 14,702$ couple-months). After dropping same-gender couples ($N = 1,298, N_M = 9,798$), observations outside the sample time frame of April 1996 – March 2020 ($N = 3,456, N_M = 10,791$), couples where either partner was outside the sample age range of 24-64 ($N = 29,180, N_M = 251,510$), couples living outside the 50 United States ($N = 117, N_M = 970$), observations with missing year, month, or state information ($N = 11,373, N_M = 101,809$), and couples with missing income ($N = 108, N_M = 453$), my final sample consisted of $N = 78,937$ total couples ($N_M = 698,686$ total couple-months), which includes $N_A = 1,346$ Alaskan couples ($N_{AM} = 11,848$ couple-months). Couples were in the sample for an average of 8.9 months.

Measures

Domestic labor outsourcing

My dependent variable is a binary indicator for whether a couple outsources, which takes a value of 1 if a couple spends any positive amount on yardwork, cleaning and laundry, childcare, or adultcare in a given month. I also decompose this measure into multiple variables that represent each outsourcing type: yardwork, cleaning and laundry, childcare, and adultcare.¹ See Table 1 for a description of how each measure is defined.

¹ I do not measure food outsourcing in this paper because these expenditures are collected at the quarter-level rather than the month-level of frequency in the CEX, which limits my ability to be able to study the short-term effects of the PFD on outsourcing.

Table 1. Categories of Outsourcing as Measured in the Consumer Expenditure Survey

Measure	Description	Applicable quarter-years
<i>Female-typed tasks</i>		
Childcare	babysitting and childcare	after quarter 2 of 2013
	babysitting and childcare in your own home	before quarter 2 of 2013
	babysitting and child care in someone else's home	
	day care centers, nursery, and preschools	every year
Cleaning and laundry	Housekeeping services	every year
	Household laundry and dry cleaning, sent out (nonclothing) not coin-operated	through 2010
	Apparel laundry and dry cleaning not coin-operated	after 1997
Adult care	Adult day care centers	every year
	Care for elderly, invalids, handicapped, etc.	every year
<i>Male-typed tasks</i>		
Yardwork	Gardening, lawn care service	every year

Couple's PFD payout

The annual PFD amount is the same for every Alaskan and is available publicly online. The amounts were adjusted to 2019 dollars. I imputed the total payment received by the couple by multiplying that year's individual PFD amount by family size, calculated as the number of children under 18 in the household plus two for the couple. I follow Amorim (2022) in assigning the yearly payment amount to the six months before and five months after each October. For example, the October 2015 payment is assigned to April 2015 – March 2016. This setup allows me to examine the effects of the PFD leading up to, including, and after its disbursement because it accounts for the fact that Alaskans can predict the PFD disbursement amount several months prior to October (Kueng, 2018), and may continue to spend it for several months after October.

Couple's income and income rank

Couple's income is the total after-tax income for the previous 12 months. The amounts were adjusted to 2019 dollars. Total household income has been consistently shown to be a strong predictor for outsourcing (Oropesa, 1993; Schneider & Hastings, 2017). Using couples' income, I create global percentiles of income rank and classify households as being under the 33rd percentile, between the 34th and 66th percentiles, and above the 67th percentile for income. Robustness checks include several alternative income rank specifications, including below the 25th, between 26th-75th, and above the 76th; below the 25th, between the 26th-50th, between the 51st-75th, and above the 76th; below the 20th, between the 21st-80th, and above the 81st; and below the 10th, between the 11th-90th, and above the 91st percentile.

Controls

Controls reflect various demand-side attributes that have been found to be associated with whether a couple outsources and the gender-typed nature of that outsourcing (Cohen, 1998; Craig & Baxter, 2014; Quadlin & Doan, 2018; Shire et al., 2017; Treas & de Ruijter, 2008; Van Der Lippe et al., 2004). Multivariate analyses include controls for couple and household characteristics, as well as controls for month, year, and state of residence. Couple controls include the age (24-34, 35-44, 45-54, 55-64 years old) (Baxter et al., 2008; Horne et al., 2018), weekly work hours (not working, 1-34 hours, 35-49 hours, or 50+ hours) (De Ruijter & Van der Lippe, 2007; Lee et al., 2014; Van Der Lippe et al., 2004), their combined occupational status (neither has professional or managerial job, only he does, only she does, or both do) (Cohen, 1998; De Ruijter & Van der Lippe, 2007; Schneider, 2012), their combined education (neither has a college degree, only he does, only she does, or both do) (Davis & Wills, 2014; Dotti Sani & Treas, 2016; England &

Srivastava, 2013; Miller, 2020), their combined race-ethnicity (neither is white non-Hispanic, only he is, only she is, or both are) (Bolzendahl & Gubernskaya, 2016; Cohen, 1998; Pessin & Pojman, 2022), and their marital status (married = 1, cohabiting = 0) (Baxter et al., 2010; Cunningham, 2005; Lee et al., 2014; Treas & de Ruijter, 2008). Household characteristics include the age of their youngest child² (no children, 0-5 years old, 6-12 years old, 13-18 years old), whether they are homeowners (Quadlin & Doan, 2018), whether they live in an urban area (Quadlin & Doan, 2018), and whether it is a multigenerational household, that is, at least one of the parents of the reference person co-resides in the home (Amorim, 2019; Hertog & Kan, 2021).

Descriptive Statistics

See Tables 2 and 3 for descriptive statistics of the final sample.

Table 2. Outsourcing Averages, Alaskan and Not (N = 698,686 couple-months)

	<u>Alaskan</u>			<u>Lower 49</u>		
	Proportion	Svy. Proportion	SD	Proportion	Svy. Proportion	SD
Any type	.43	.41	.49	.43	.42	.50
Yardwork	.06	.05	.23	.10	.10	.30
Cleaning	.27	.26	.44	.28	.27	.45
Childcare	.12	.10	.32	.12	.11	.32
Adultcare	.00	.00	.05	.00	.00	.04

Source: 1996-2020 Consumer Expenditure Survey. Note: Author's calculations using final sample. "Svy." = survey, "SD" = standard deviation. Data are weighted using survey weights.

Table 3. Household and Couple Characteristics, Alaskan and Not (N = 698,686 couple-months)

	<u>Alaskan</u>			<u>Lower 49</u>		
	Mean/Prop.	Svy. Proportion	SD	Mean/Prop.	Svy. Proportion	SD
PFD amount	6351.24	5427.25	3630.38	.00	.00	.00
Family Income	110199.59	119758.95	86471.71	90972.68	90934.45	80539.45
<u>Her age</u>						
24-34	.27	.27		.26	.26	
35-44	.29	.29		.31	.30	

² This measure only captures children living in the household, whom I term *residential children*.

45-54	.30	.30		.28	.28	
55-64	.14	.15		.16	.16	
<u>His age</u>						
24-34	.21	.23		.20	.21	
35-44	.28	.26		.29	.29	
45-54	.29	.31		.29	.28	
55-64	.21	.21		.22	.22	
<u>Her labor market attachment</u>						
None	.21	.18		.25	.25	
Part-time	.18	.17		.18	.18	
Full-time	.48	.51		.47	.47	
Overwork	.13	.14		.10	.10	
<u>His labor market attachment</u>						
None	.08	.07		.09	.09	
Part-time	.07	.07		.06	.06	
Full-time	.55	.54		.57	.57	
Overwork	.30	.32		.28	.28	
<u>Their professional occupation</u>						
Both not	.45	.42		.53	.53	
He is	.23	.22		.21	.20	
She is	.18	.20		.13	.13	
Both are	.15	.17		.14	.14	
<u>Their combined education</u>						
Neither has	.52	.51		.53	.52	
He has BA+	.12	.10		.12	.11	
She has BA+	.13	.13		.11	.11	
Both have	.24	.25		.25	.25	
<u>Their race-ethnicity</u>						
Both minority	.14	.14		.26	.27	
He is white	.10	.10		.04	.04	
She is white	.06	.06		.04	.04	
Both white	.70	.70		.66	.66	
Married	.93	.92	.26	.93	.93	.25
Family size	3.42	3.32	1.41	3.46	3.42	1.35
<u>Age of youngest child</u>						
No children	.45	.48		.44	.45	
0-5 years old	.23	.20		.25	.24	
6-12 years old	.20	.18		.19	.18	
13+ years old	.12	.13		.13	.13	
Homeowner	.78	.78	.42	.77	.76	.42
Urban	1.00	1.00	.00	.99	.98	.12
Multigenerational	.01	.02	.12	.02	.02	.14

Source: 1996-2020 Consumer Expenditure Survey. Note: “Svy.” = Survey. All values are adjusted to 2019 dollars. Data are weighted using survey weights.

Empirical strategy

I use a linear probability model (LPM) with a differences-in-differences framework to study whether couples outsource their domestic labor as a response to a positive income shock. The LPM is a binary regression model where the dependent variable takes values of 0 or 1 to represent whether a couple outsources in a given month. Model coefficients represent the change in probability that a couple outsources for a unit change in a given variable.

First, I exploit the monthly sampling frame of the Consumer Expenditure Survey to examine whether Alaskan couples outsource after receiving the Alaska Permanent Fund Dividend in October. This set-up allows me to make use of a differences-in-differences framework where I compare the pre- and post-payout behaviors of Alaskan and Lower 49 couples using a linear probability model. This empirical strategy relies on the assumption that the seasonality of outsourcing types is similar for Alaskan and Lower 49 couples. Appendix Figure A1 demonstrates that their outsourcing behaviors are comparable across months and type of outsourcing. I estimate

$$\Pr(\delta_{hmt}) = \alpha + \lambda(\gamma_{ht}) + \sum_m \beta_m(\rho_{hm}) + \sum_m \theta_m(\gamma_{ht} \times \rho_{hm}) + \sigma(\chi_{st}) + \mu(\varphi_{st}) + \varepsilon$$

where $\Pr(\delta_{hmt})$ reflects the probability that household h outsources in month m and year t , γ_{ht} represents the total PFD payment paid to household h in year t normalized by household permanent income, and ρ_{hm} represents a series of indicators for whether household h is sampled in month m , with the month of October as a reference category. The interaction $\gamma_{ht} \times \rho_{hm}$ reflects the differences-in-differences estimator, where the coefficient θ_m shows the difference in outsourcing between Alaskan and Lower 49 couples in a given month, controlling for other differences in outsourcing over a year. The coefficient θ_{10} , which represents the interaction of the October month-indicator and the normalized family PFD payment, is of particular interest. Statistically

significant coefficients on this interaction show that Alaskan couples significantly differ from Lower 49 couples in how they outsource upon receiving the PFD. Lastly, χ_{st} and φ_{st} represent a vector of household- and couple-level demographic controls, and a vector of state and year controls, respectively.

In order to examine the gendered effects of receiving the PFD on outsourcing, I repeat this analysis on each type of outsourcing individually, measuring the probability that a household outsources yardwork, cleaning and laundry, childcare, or adultcare. This strategy allows me to see not only which types of outsourcing are more responsive to an income shock, but also which sociodemographic predictors are most important for each type of outsourcing. Lastly, I repeat these analyses, sub-setting by couples' income rank. Here I examine how low-, middle- and high-income couples might behave differently in response to an income shock.

Model assumptions

My modeling strategy includes several assumptions. First, I assume that couples in the Lower 49 provide an appropriate counterfactual for Alaskan couples. By design, this study examines one group who receives a positive income shock (Alaskan couples) compared to another group that does not (couples in the “Lower 49” states). Though absolute and seasonal differences in expenditures may exist between the two groups, their pre-payment trends should be the same. Appendix Figure A1 supports this assumption and shows that seasonal trends in all types of outsourcing expenditures are similar between Alaskan and Lower 49 couples. Second, I assume that the yearly PFD amount is exogenous to couples' labor market status and income, an assumption well supported in the literature (Kueng, 2018; Watson et al., 2020). Third, I assume that Alaskan couples would increase outsourcing around October for no other reason than

receiving the PFD. I provide evidence in Appendix Figure A2 by comparing the expenditure behaviors of states that could plausibly have similar seasonal patterns. Alaskan and non-Alaskan expenditure patterns have been proven to follow similar seasonal trends (Amorim, 2021; Kueng, 2018). Finally, I assume that the timing of the PFD payout is unrelated to outsourcing. I cannot test this assumption directly, but several facts help to prove it indirectly: (1) the creators of the PFD had no intentions that the payout should be used to help couples outsource their labor, nor was it created to help workers remain in the labor force, and (2) October has been the payout date since the PFD's inception, and October is not a particularly meaningful month for outsourcing in the same way that summer months might be.

Robustness checks

I conduct a variety of robustness checks to examine whether results are sensitive to model and sample specifications. First, I estimate a logistic regression with controls for all outsourcing, yardwork, cleaning, childcare, and adultcare. I then repeat the original estimation by running the analyses on a subsample consisting of Alaskans as well as couples from Washington, Idaho, Vermont, Maine, New Hampshire, and Colorado.³ This subsample comparison is a common procedure when studying the Alaska PFD (Amorim, 2021; Kueng, 2018). Then, I estimate a LPM on several subsets of the sample: couples with versus without residential children, couples with young children versus with teenagers, and couples who were full-time dual earners versus other combinations of labor market attachment. Results from these robustness checks are further described in the Results section.

³ This analysis does not control for whether the couple lives in an urban area or not because households in these states were overwhelmingly or wholly sampled from urban areas.

Results

Effect of PFD Transfers on Domestic Labor Outsourcing

I first examine the effect of the PFD payment on overall outsourcing, meaning whether a household outsources childcare, adult care, cleaning & laundry, or outdoor maintenance in a given month using a linear probability model within a differences-in-differences framework. Then, to see how couples utilize the PFD, I conduct these analyses on each type of outsourcing individually. Table 4 presents coefficients for my first set of models, which included no controls. For simplicity I only include the coefficient on my key variable of interest, the interaction between the month of October and the normalized relative value of the PFD to couples' income. Full results can be found in Appendix Table B1.

Table 4. Model 1: Results from linear probability models without controls

	All	Yardwork	Cleaning	Childcare	Adultcare
Normalized PFD x October	-0.0000 (0.000)	0.0000 (0.000)	-0.0000† (0.000)	0.0000 (0.000)	-0.0000 (0.000)
Constant	0.5414*** (0.020)	0.0351*** (0.007)	0.4193*** (0.019)	0.1193*** (0.012)	0.0038† (0.002)
Observations	698,686	698,686	698,686	698,686	698,686
R-squared	0.026	0.020	0.043	0.005	0.001
State FE	YES	YES	YES	YES	YES
Month-Year FE	YES	YES	YES	YES	YES

Note: Robust standard errors in parentheses (***) $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$. Standard errors are clustered at the couple level. Data are weighted using survey weights.

My first hypothesis dealt with whether couples would outsource their domestic labor more after receiving an income shock. I predicted no changes to couple's outsourcing due to the theoretical framework presented in the *gender perspective*. The results showed that the PFD did not significantly increase or decrease couples' outsourcing of any form in the month of October. In the model looking only at cleaning and laundry outsourcing, the interaction coefficient is negative

and quite small, but it is marginally statistically significant ($p < 0.10$). This is the only model in which the interaction reached statistical significance. All models had small and near-zero coefficients, suggesting that the PFD has little effect on whether couples decide to outsource – at least before controlling for potential differences between couples.

I then estimated these five models again, with the full set of couple and household characteristics as controls. In Table 5, I again only present the coefficient on the key variable of interest, and full results are available in Appendix Table B2. Notably, I find that the coefficient on this interaction is near zero and not statistically significant in any model, suggesting that even after controlling for differences between couples in terms of potential outsourcing demand factors, the PFD affects Alaskan couples' outsourcing very little if at all. These two sets of models provide support for Hypothesis 1. In fact, I find that several if not most of the control variables in this model are much more strongly associated with whether a couple outsources than is the PFD payment. For example, if both partners have a college degree or higher, they are 22.6 percentage points ($p < 0.001$) more likely than couples where neither has a college degree to outsource cleaning and laundry. These results are robust to estimation using logistic regression.

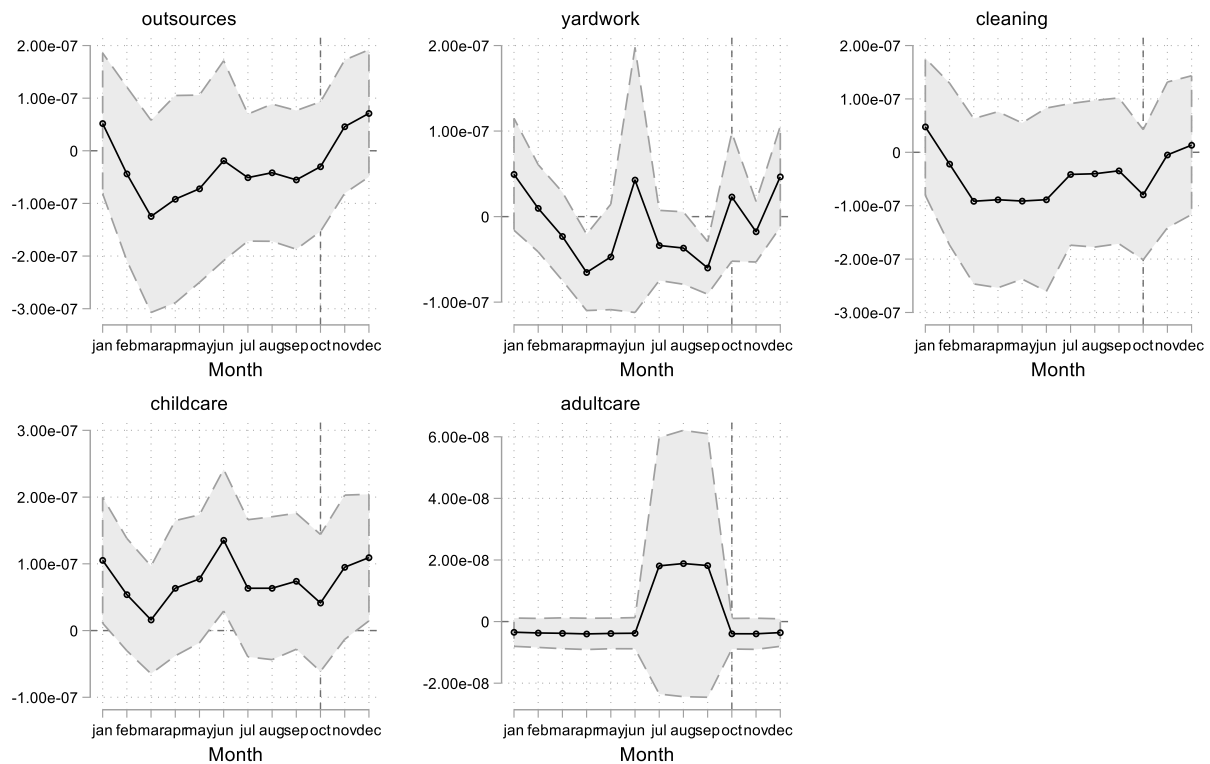
Table 5. Model 2: Results from linear probability models with controls

	All	Yardwork	Cleaning	Childcare	Adultcare
Normalized PFD x October	-0.0000 (0.000)	0.0000 (0.000)	-0.0000 (0.000)	0.0000 (0.000)	-0.0000 (0.000)
Constant	-0.1072*** (0.024)	-0.1573*** (0.010)	0.0088 (0.022)	-0.1560*** (0.013)	0.0030 (0.002)
Observations	698,686	698,686	698,686	698,686	698,686
R-squared	0.192	0.083	0.174	0.255	0.003
State FE	YES	YES	YES	YES	YES
Month-Year FE	YES	YES	YES	YES	YES

Note: Robust standard errors in parentheses (***) $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.10$). Standard errors are clustered at the couple level. Data are weighted using survey weights.

Figure 2 presents average marginal effects of the PFD on outsourcing overall and on each type of outsourcing. Results indicate that no forms of labor are responsive to the PFD disbursement, and Alaskans may outsource less than their Lower 49 peers in general. Looking at this figure, the average marginal effect of the PFD on all forms of outsourcing tends to increase in the last few months of the year (excluding the adultcare model), though the month of October may stray from this pattern for the cleaning and childcare models as there is a slight decrease from September and then an increase into November. The opposite is true for yardwork, however, as there is an increase in the average marginal effect of the PFD between September and October, and then a decrease in November. These findings are not statistically significant, however, suggesting that Alaskans do not significantly differ from Lower 49 couples in how they outsource.

Figure 2: Average Marginal Effects of the PFD on Outsourcing



Effect of PFD Transfers Across Income

The second hypothesis, based on the *affordability perspective*, focused on how low- and middle-income couples' responses to the income shock provided by the Alaska PFD would differ from those of high-income couples. Table 6 below demonstrates how responsive outsourcing is to the PFD in the last four months of the year along income rank lines, where percentiles are defined as below the 33rd percentile, between the 34th and 66th percentile, and above the 67th percentile and were calculated for the entire sample. Numbers in this table represent the increase or decrease in likelihood that Alaskan couples will outsource a given task based on a one percentage point increase in the share of their income represented by the PFD.

Responses clearly differ across income rank. Low-income Alaskan couples differ very slightly from couples in the lower 49 states, as seen by the near-zero coefficients in Table 6. As these couples already outsourced very little to begin with, these coefficients suggest that low-income couples in Alaska do not change their outsourcing behavior in any significant way around the time of the PFD disbursement.

For middle-income couples, the differences are starker. The only column with statistically significant coefficients is Childcare, suggesting that any effects of the PFD for middle-income couples is concentrated in how they outsource childcare. However, this effect is negative: in October, middle-income Alaskan couples are 0.76% ($p < 0.01$) less likely to outsource childcare than are middle-income Lower 49 couples. In November, this decreases slightly, and Alaskan couples are only 0.62% ($p < 0.05$) less likely to outsource childcare, though by December they are 0.70% ($p < 0.05$) less likely.

High-income couples are the only income rank to see positive and highly significant differences, though their behavior is concentrated in outsourcing yardwork. In October, high-income Alaskan couples are 1% ($p < 0.01$) more likely to outsource yardwork than are high-income

Lower 49 couples, and this increases to 1.3% ($p<0.001$) and 2% ($p<0.001$) more likely in November and December, respectively. This finding provides support for Hypothesis 2 which predicted that high-income couples would outsource more due to the PFD.

Table 6. Average Marginal Effects of the PFD Payout on Spending (Alaska versus Lower 49), by Types of Outsourcing Expenditure and Couples' Income Rank

	All	Yardwork	Cleaning	Childcare	Adultcare
<i>Low income</i>					
August	0.0000 (0.000)	-0.0000** (0.000)	0.0000 (0.000)	0.0000† (0.000)	0.0000 (0.000)
September	0.0000 (0.000)	-0.0000*** (0.000)	0.0000 (0.000)	0.0000† (0.000)	0.0000 (0.000)
October	0.0000 (0.000)	-0.0000 (0.000)	-0.0000 (0.000)	0.0000 (0.000)	-0.0000 (0.000)
November	0.0000* (0.000)	-0.0000** (0.000)	0.0000 (0.000)	0.0000* (0.000)	-0.0000 (0.000)
December	0.0000* (0.000)	0.0000 (0.000)	0.0000 (0.000)	0.0000* (0.000)	-0.0000 (0.000)
<i>Middle income</i>					
August	-0.0063 (0.005)	0.0017 (0.002)	-0.0023 (0.005)	-0.0040 (0.003)	0.0002 (0.000)
September	-0.0098† (0.005)	-0.0024 (0.002)	-0.0046 (0.005)	-0.0045 (0.003)	0.0002 (0.000)
October	-0.0076 (0.005)	0.0006 (0.001)	-0.0023 (0.005)	-0.0076** (0.002)	0.0002 (0.000)
November	-0.0051 (0.005)	-0.0003 (0.002)	-0.0006 (0.005)	-0.0062* (0.003)	0.0004 (0.000)
December	0.0020 (0.006)	0.0020 (0.002)	0.0027 (0.005)	-0.0070* (0.003)	0.0007 (0.000)
<i>High income</i>					
August	-0.0110 (0.012)	0.0069† (0.004)	-0.0122 (0.010)	-0.0071 (0.009)	0.0024 (0.002)
September	-0.0079 (0.012)	0.0089* (0.004)	-0.0069 (0.010)	-0.0045 (0.009)	0.0002 (0.001)
October	-0.0050 (0.012)	0.0100** (0.004)	-0.0066 (0.010)	-0.0107 (0.009)	0.0033 (0.003)
November	-0.0066 (0.012)	0.0132*** (0.004)	0.0017 (0.011)	-0.0105 (0.008)	0.0035 (0.003)
December	0.0014 (0.012)	0.0205*** (0.003)	0.0110 (0.011)	-0.0104 (0.008)	0.0043 (0.003)

Notes: Robust clustered standard errors in parentheses (*** $p<0.001$, ** $p<0.01$, * $p<0.05$, † $p<0.10$). Low-income N = 233,016, middle-income N = 232,805, high-income N = 232,865 couple-months.

These findings are mostly robust to alternative income rank specifications. Across the board, I find that low-income couples' outsourcing is unaffected by the PFD, and middle-income couples outsource childcare less or are unaffected by the PFD payment. When "middle-income" represents a larger proportion of couples, they are also less likely to outsource overall in October by around 1%-2%. The main difference is in how high-income couples are defined. When defined as above the 76th percentile, they are 2.7% ($p < 0.05$) less likely to outsource cleaning in October, and they are 2.6% ($p < 0.10$) less likely when defined as above the 81st percentile. Lastly, when defined as above the 91st percentile of income, they are 2.7% less likely to outsource yardwork ($p < 0.05$) and 6% less likely to outsource overall ($p < 0.10$). This suggests that the original results may have been driven by the behavior of couples between the 67th and 75th income percentiles who use the PFD to "catch up" to their higher income peers. Full results comparing the average marginal effects of the PFD on outsourcing by couples' income rank are available upon request.

Sensitivity Analyses

The few effects I found were quite small in magnitude – this could be because the PFD has little to no effect on whether Alaskan couples outsource domestic labor, or it could be because smaller subgroups' behavior was being masked by the behavior of the entire sample. Thus, I estimated several supplementary models to test whether my results were sensitive to sample specification. I first restricted the sample to a select number of states that I believed could be comparable based on climate and local industry: Washington, Idaho, Vermont, Maine, New Hampshire, and Colorado. I then restricted my sample to compare only couples with children, and then only couples without children. Then, I restricted my sample even further from the couples with children, comparing those with younger children (0-12 years old), and then repeating this

with couples with teenaged children (13-18 years old). Lastly, I once again restricted my sample to study whether there may be differences across the couples' labor market attachment. First, I compared Alaskan and Lower 49 full-time dual earner couples, meaning that they both worked at least 35 hours per week. I then repeated this by comparing couples with other degrees of labor market attachment; this sample included individuals who worked part-time or less, and couples where one partner worked full-time or more while the other worked part-time or less.

My findings were robust to each these sample restrictions. In each case, the coefficient on the differences-in-differences estimator – the interaction between the month of October and the normalized family PFD payment – was small and near zero (less than ± 0.0001) and most coefficients were not statistically significant. Exceptions to this include in the models for couples with residential children, where the coefficient for the adultcare model was negative and statistically significant ($p < 0.05$); the models for couples without residential children, where the coefficient for the childcare model was negative and significant ($p < 0.01$); the models for couples with a child 12 years old or younger, where the coefficient for the adultcare model was negative and significant ($p < 0.01$); and the models for couples who were not both full-time dual earners, where the cleaning model showed a negative but significant result ($p < 0.01$). As the coefficients were so small, I hesitate to interpret statistical significance as a true “result.”

Discussion

This paper offers several methodological and substantive contributions to the literature on domestic labor outsourcing in different-gender couples. First, this paper goes beyond the traditional method of studying *associations* between men's and women's characteristics and whether they outsource domestic labor. I take a *causal* approach with a differences-in-differences

framework where I make use of a natural experiment (the Alaska Permanent Fund Dividend) and longitudinal Consumer Expenditure Survey data to document short-term responses in outsourcing as a function of income changes due to a positive income shock. I tested whether there were differences in the type of labor outsourced, as couples may have different desires regarding outsourcing yardwork, cleaning and laundry, childcare, and adultcare. Third, I build on existing knowledge on income differences in domestic labor outsourcing. Though it is well-known that high-income couples outsource at higher rates, I tested whether low- and middle-income couples would outsource more if they received a positive income shock, and how these differences varied across yardwork, cleaning and laundry, childcare, and adultcare. I repeated these analyses on a variety of restricted samples and different income rank specifications, but consistently found null results, suggesting that what drives some couples to outsource their domestic labor is not solely having the financial means to do so. The large income disparities in outsourcing are not rectified by an income shock, which points to another dimension in which gender inequality within couples and between women of different incomes continues to be pervasive.

These findings are inconsistent with previous research that has argued that domestic labor, especially female-typed tasks, can be burdensome and individuals may desire to outsource it (Coltrane, 2000; Hook, 2010; Treas & de Ruijter, 2008). Though the relative resources theory of housework predicts that women should do less housework as their financial inputs to the relationship increase (Carlson & Lynch, 2017; Diefenbach, 2002), women may still do more domestic labor even when they out earn their partners (Bittman et al., 2003; Tichenor, 2005). This may be because female-typed tasks are the most difficult to outsource since they require the most financial investment to replace, as these tasks are performed the most regularly and cannot be postponed in the same way male-typed tasks could (Coltrane, 2000; Hook, 2010). The PFD is paid

once per year, but housework and carework must be done constantly. Time spent in housework and carework may be considered “normal goods” that do not factor into the budget, and thus do not need to be outsourced (Morrissey, 2022). Shifting from not outsourcing to outsourcing may also involve some degree of belief realignment about who performs domestic labor and how appropriate outsourcing is as a response to domestic labor demands. Depending on the structure of the cash transfer, payments may be too small to change couples’ behavior in the short term.

These findings also add to our knowledge on the large income disparities between the couples that do and those that do not outsource (Gonalons-Pons, 2015; Schneider & Hastings, 2017). Research focusing on those who do *not* outsource have found that many cite not being able to afford to as their primary reason (Windebank, 2010). However, this study finds that even after outsourcing became more affordable because of the Alaska PFD, low- and middle-income couples did not outsource more. This finding is consistent with research on policies enacted in other countries that were intended to promote domestic labor outsourcing. In these cases, high-income households took advantage of tax reforms intended to support outsourcing, rather than lower-income households (Halldén & Stenberg, 2018; Shire et al., 2017). Taken together, this suggests that it is not just income that prevents some couples from outsourcing.

Though the expenditure data used in this study has no information on couples’ gender attitudes or preferences regarding domestic labor, related research can help us speculate as to what drives these null results. As previous research has shown, a couple’s financial resources and objective labor demand are necessary but not sufficient predictors of outsourcing; whether they determine outsourcing to be an “appropriate response” to these demands predicts whether they outsource (Baxter et al., 2009). Thus, couples may have a set preference regarding domestic labor outsourcing that is partially informed by their financial and time constraints, but ultimately

determined by a mix of their preferences for doing domestic labor and gender attitudes. Of course, one cannot ignore the persistence of gender inequality in different-gender couples. Though an income shock should theoretically allow couples to outsource their domestic labor if they could not previously afford to, it is quite likely that reducing time in housework and carework is not a high priority for many couples' budgets.

Though I was not able to integrate my analysis of the expenditure data with time-use data, my results contribute to the knowledge base on the effect of an exogenous income shock on a couple's housework and care work. Research examining the effect of the Earned Income Tax Credit found small, positive, short-term effects on parents' time spent with children (Morrissey, 2022), and the Alaska PFD may function similarly. Couples may be interested in spending more time in leisure and with their children and may outsource some of their housework or yardwork to achieve that. Couples with children may outsource childcare less (as was seen with middle-income couples) to spend more time with their children, a pattern that will be especially likely for highly educated parents (Dotti Sani & Treas, 2016; England & Srivastava, 2013). Performing childcare helps to affirm maternal identity (Macdonald, 2011), and allows couples to invest time into ensuring their children's future socioeconomic class (Lareau, 2011; Raley & Bianchi, 2006). Some families may reduce their paid work hours (Jones & Marinescu, 2022), which would free up their time for housework and reduce the need for outsourcing. Many low-income women in particular may desire more time to spend in housework (Stanczyk et al., 2017).

There may be other forces driving these results that are more related to the structure of the income shock than to gender attitudes or preferences of couples. The most obvious is that the PFD is not a large enough "shock" to couples' income to induce them to outsource. Since the payment is paid only once per year, couples may perceive it as more of a bonus or wealth, whereas a monthly

payment would be treated more akin to income (Shefrin & Thaler, 2011). However, research that exploited both the frequency and amount of a theoretical direct cash transfer paid to survey respondents found no statistically significant consensus on whether monthly versus yearly payments would make Americans more likely to outsource childcare and adultcare. More generous payments were associated with a greater likelihood of outsourcing childcare and adultcare, however (Roll et al., 2022). This study did not examine the outsourcing of yardwork, cleaning, or laundry, but we may be able to expect similar findings. Outsourcing female-typed tasks in particular may be costlier than couples could afford, even with extra money from an income shock, because they need to be outsourced regularly. For example, parents may not be able to “afford” to work if childcare costs are too high (Immervoll & Barber, 2006). Other additional forces beyond the structure of the payment may also limit couples’ responses.

While outsourcing may reduce time spent performing domestic labor, there is also a required time investment to identify and manage qualified domestic workers (Keister et al., 2022; Killewald, 2011). One must find a service provider who is safe, reputable, and affordable, which may not be possible for low- and middle-income couples. As this study has shown, however, many low- and middle-income couples do already outsource, and extra income did not increase this proportion by a large degree. Outsourcing a small amount of one task may be financially possible, but such a small reduction in labor time may not be cost effective; couples may choose to outsource only when they can afford the amount of labor replacement they need. For example, a couple may choose to maintain their existing division of housework if they could only afford to hire a cleaner once per year. Couples may also be unable to outsource a small amount of a certain task, and a relatively small, infrequent payment may do little to increase that task’s affordability. For example, outsourcing carework requires upfront time investments and cognitive labor to secure the care, and

childcare may be needed daily rather than for a few hours sporadically. Of course, couples “do gender” by doing housework and carework, and couples may prefer to maintain their existing gender division of labor even if they could afford to change it.

Limitations

This study has several important limitations. First, there may be attenuation bias due to various factors. As the data are reported on the previous three months, there may also be recall bias. My models assume perfect eligibility and a perfect take-up rate, as I impute the PFD to every Alaskan. I am not able to capture proximity of non-residential kin who may provide help with the domestic labor, nor can I measure non-residential children for whom the couple may provide financial support. Because the dividend is subject to federal income tax, higher income couples may pay more on it. Additionally, I may not be able to capture the differences between states in terms of market availability of services. Though I have up to 12 months of data for any given couple, this is still a limited observation period, and I can only track them through one PFD disbursement period.

The very nature of outsourcing constitutes a fuzzy place within the market. Couples may underreport their spending on outsourcing if it is paid to an individual as opposed to a business. For example, a couple may forget that a neighbor babysat their children for a night as they used cash and did not get a receipt, whereas they may remember the exact amount they paid a cleaning service. Lastly, the Consumer Expenditure Survey does not collect data on how much time couples spend in domestic labor or on their gender attitudes or preferences, and the sample size of Alaskans in the American Time Use Survey is too small to conduct analyses, so I am limited as to the scope of my analysis.

Conclusion

Women in the United States continue to do a disproportionate share of domestic labor. Though outsourcing has been described as a solution to equalize the gender division of labor within couples and could diminish the gap in housework time between high- and low-income women, there are no policies in the United States intended to support this. In this study, I examined whether different-gender couples would outsource their domestic labor after receiving a positive income shock. Looking across different types of domestic labor and different income levels, I consistently found null results, suggesting that couples in the United States do not use cash transfers to outsource. However, there is still room for social policy to attempt to equalize the gender division of labor.

Appendices

Appendix A. Descriptive statistics

Figure A1. PFD amount and take-up rate, 1982-2020

Source: State of Alaska, Department of Revenue, Permanent Fund Dividend

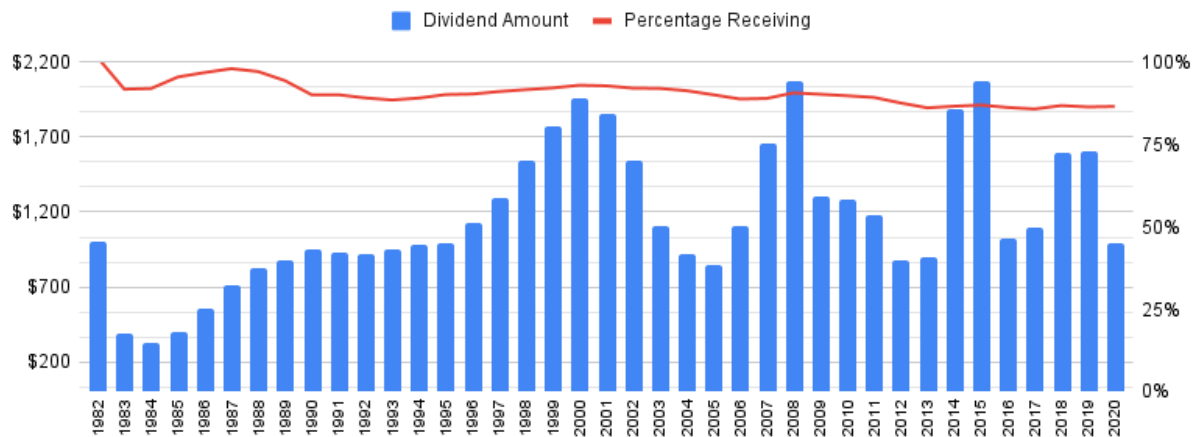


Figure A2. Alaskan versus Lower 49 couples

Source: 1996-2020 Consumer Expenditure Survey. Note: Author's calculations. January = 1, December = 12.

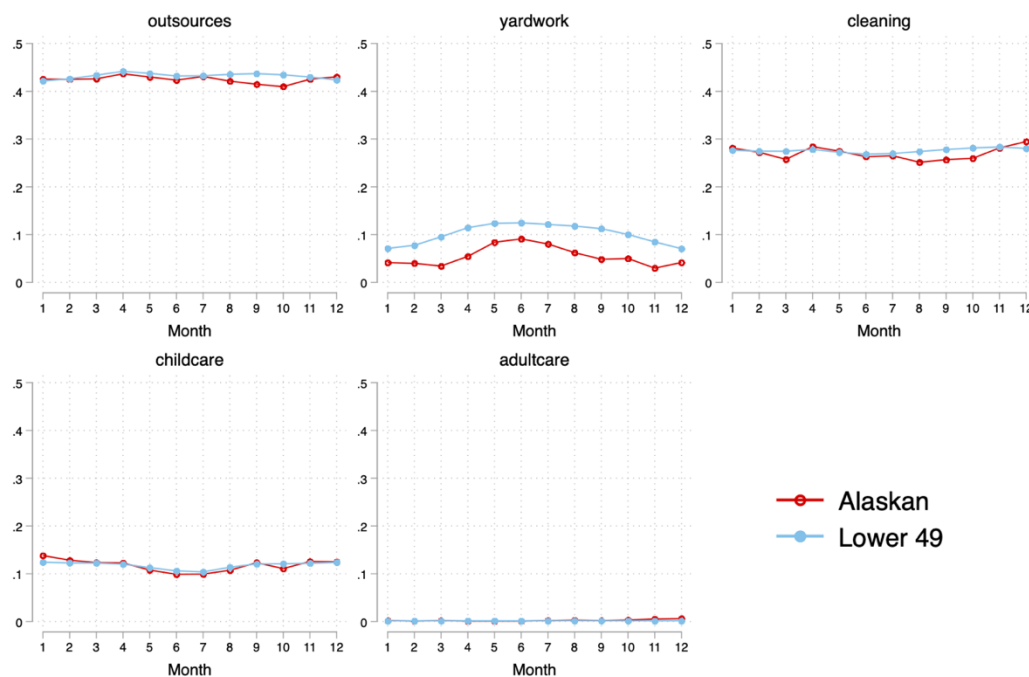
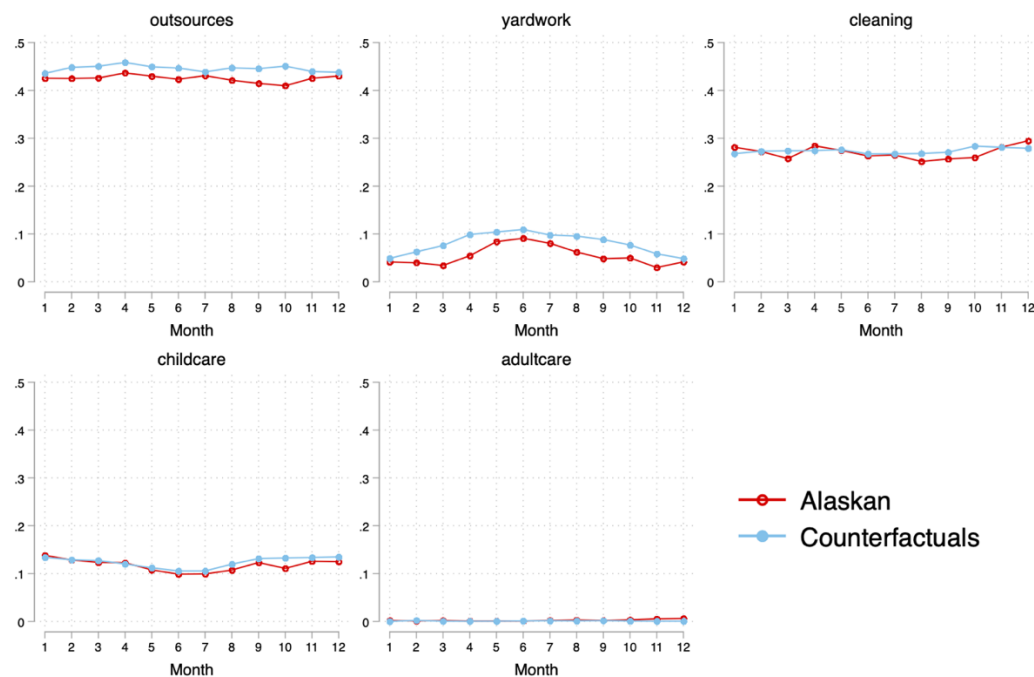


Figure A3. Alaskan versus counterfactual states couples

Source: 1996-2020 Consumer Expenditure Survey. Note: Author's calculations. January = 1, December = 12. Counterfactual states include Washington, Idaho, Vermont, Maine, New Hampshire, and Colorado.



Appendix B. Results from main and supplementary analyses

Appendix Table B1. Results from Model 1: LPM of model without controls

	All	Yardwork	Cleaning	Childcare	Adultcare
Normalized PFD	0.0000	0.0000	0.0000+	0.0000	0.0000
x January	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	-0.0000	-0.0000	0.0000	-0.0000	0.0000
x February	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	-0.0000	-0.0000	0.0000	-0.0000	-0.0000
x March	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	-0.0000	-0.0000+	0.0000	-0.0000	-0.0000
x April	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	-0.0000	-0.0000	0.0000	-0.0000	-0.0000
x May	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	0.0000	0.0000	0.0000	0.0000	-0.0000
x June	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	-0.0000	-0.0000	0.0000	-0.0000	0.0000
x July	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	-0.0000	-0.0000	0.0000	0.0000	0.0000
x August	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	-0.0000	-0.0000*	0.0000	0.0000	0.0000
x September	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	0.0000	0.0000	0.0000	0.0000	0.0000
x October	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	0.0000+	-0.0000	0.0000+	0.0000	0.0000
x November	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	0.0000	0.0000	0.0000	0.0000	0.0000
x December	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.5414*** (0.020)	0.0351*** (0.007)	0.4193*** (0.019)	0.1193*** (0.012)	0.0038+ (0.002)
Observations	698,686	698,686	698,686	698,686	698,686
R-squared	0.026	0.020	0.043	0.005	0.001
State FE	YES	YES	YES	YES	YES
Month-Year FE	YES	YES	YES	YES	YES

Note: Robust clustered standard errors in parentheses (*** p<0.001, ** p<0.01, * p<0.05, † p<0.10). FE = fixed effects.

Appendix Table B2. Results from Model 2: LPM of full model

	All	Yardwork	Cleaning	Childcare	Adultcare
Normalized PFD	0.0000	0.0000	0.0000	0.0000	0.0000
x January	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	-0.0000	-0.0000	0.0000	0.0000	0.0000
x February	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Normalized PFD	-0.0000	-0.0000	-0.0000	-0.0000	0.0000
x March	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	-0.0000	-0.0000*	-0.0000	0.0000	-0.0000
x April	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	-0.0000	-0.0000	-0.0000	0.0000	0.0000
x May	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	0.0000	0.0000	-0.0000	0.0000	0.0000
x June	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	-0.0000	-0.0000	0.0000	0.0000	0.0000
x July	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	-0.0000	-0.0000	0.0000	0.0000	0.0000
x August	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	-0.0000	-0.0000*	0.0000	0.0000	0.0000
x September	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	-0.0000	0.0000	-0.0000	0.0000	-0.0000
x October	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	0.0000+	-0.0000	0.0000	0.0000	-0.0000
x November	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Normalized PFD	0.0000	0.0000	0.0000	0.0000	0.0000
x December	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Age of youngest child (reference: no children)

0-5 years old	0.2254***	0.0132***	0.0014	0.3748***	0.0001
	(0.005)	(0.002)	(0.004)	(0.003)	(0.000)
6-12 years old	0.0482***	0.0056*	-0.0025	0.0959***	-0.0001
	(0.005)	(0.003)	(0.004)	(0.003)	(0.000)
13+ years old	0.0001	-0.0050†	0.0095*	-0.0056***	0.0002
	(0.005)	(0.003)	(0.004)	(0.001)	(0.000)

Their combined education (reference: neither has)

He has BA+	0.1460***	0.0469***	0.1287***	0.0085**	0.0011**
	(0.005)	(0.003)	(0.005)	(0.003)	(0.000)
She has BA+	0.1365***	0.0365***	0.1000***	0.0349***	0.0011*
	(0.005)	(0.003)	(0.004)	(0.003)	(0.000)
Both have	0.2409***	0.0830***	0.2258***	0.0505***	0.0008**
	(0.004)	(0.003)	(0.004)	(0.003)	(0.000)

Their professional occupation (reference: both not)

He is	0.1191***	0.0444***	0.0988***	0.0124***	0.0004†
	(0.004)	(0.002)	(0.004)	(0.002)	(0.000)
She is	0.0882***	0.0207***	0.0690***	0.0230***	0.0008*
	(0.004)	(0.002)	(0.004)	(0.003)	(0.000)
Both professional	0.1641***	0.0654***	0.1611***	0.0424***	0.0003
	(0.005)	(0.003)	(0.005)	(0.003)	(0.000)

Their race-ethnicity (reference: neither is white non-Hispanic)

He is	0.0355***	0.0164**	0.0043	0.0264***	0.0006
	(0.008)	(0.005)	(0.007)	(0.005)	(0.001)
She is	0.0399***	0.0094†	0.0241***	0.0328***	-0.0002
	(0.008)	(0.005)	(0.007)	(0.005)	(0.000)

Both white non-Hispanic	0.0233*** (0.004)	0.0046* (0.002)	0.0155*** (0.003)	0.0264*** (0.002)	0.0001 (0.000)
<i><u>Her labor market attachment (reference: not in paid employment)</u></i>					
Part-time	0.0647*** (0.004)	-0.0090*** (0.002)	0.0194*** (0.004)	0.0538*** (0.003)	0.0005 (0.000)
Full-time	0.0799*** (0.004)	-0.0130*** (0.002)	0.0163*** (0.003)	0.0840*** (0.002)	-0.0005* (0.000)
Overwork	0.1130*** (0.005)	0.0042 (0.003)	0.0695*** (0.005)	0.0695*** (0.003)	0.0002 (0.000)
<i><u>His labor market attachment (reference: not in paid employment)</u></i>					
Part-time	0.0128† (0.007)	-0.0028 (0.004)	0.0196*** (0.006)	-0.0148*** (0.003)	-0.0018** (0.001)
Full-time	0.0251*** (0.005)	-0.0101*** (0.003)	0.0185*** (0.004)	0.0021 (0.002)	-0.0015* (0.001)
Overwork	0.1046*** (0.005)	0.0236*** (0.003)	0.1002*** (0.005)	0.0140*** (0.003)	-0.0011† (0.001)
<i><u>Her age (reference: 24-34 years old)</u></i>					
35-44	0.0176*** (0.005)	0.0148*** (0.003)	0.0267*** (0.004)	0.0226*** (0.004)	0.0003 (0.000)
45-54	0.0394*** (0.007)	0.0263*** (0.004)	0.0466*** (0.006)	0.0174*** (0.004)	0.0009** (0.000)
55-64	0.0667*** (0.008)	0.0366*** (0.005)	0.0541*** (0.007)	0.0238*** (0.005)	0.0015* (0.001)
<i><u>His age (reference: 24-34 years old)</u></i>					
35-44	0.0156** (0.005)	0.0095*** (0.003)	0.0201*** (0.004)	0.0194*** (0.004)	-0.0002 (0.000)
45-54	0.0268*** (0.007)	0.0197*** (0.003)	0.0421*** (0.006)	-0.0001 (0.005)	0.0000 (0.000)
55-64	0.0493*** (0.008)	0.0315*** (0.004)	0.0539*** (0.007)	0.0057 (0.005)	0.0011† (0.001)
Multigenerational household	-0.0199† (0.011)	0.0105 (0.007)	-0.0044 (0.009)	-0.0353*** (0.006)	0.0098*** (0.002)
Homeowners	0.1268*** (0.004)	0.0798*** (0.002)	0.0509*** (0.003)	0.0304*** (0.002)	0.0002 (0.000)
Married	0.0091 (0.006)	-0.0024 (0.003)	0.0023 (0.004)	-0.0026 (0.003)	0.0003† (0.000)
Urban	0.1580*** (0.012)	0.0521*** (0.005)	0.1109*** (0.010)	0.0149† (0.008)	0.0001 (0.001)
Constant	-0.1072*** (0.024)	-0.1573*** (0.010)	0.0088 (0.022)	-0.1560*** (0.013)	0.0030 (0.002)
Observations	698,686	698,686	698,686	698,686	698,686
R-squared	0.192	0.083	0.174	0.255	0.003
State FE	YES	YES	YES	YES	YES
Month-Year FE	YES	YES	YES	YES	YES

Note: Robust clustered standard errors in parentheses (*** p<0.001, ** p<0.01, * p<0.05, † p<0.10). FE = fixed effects.

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