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ABSTRACT

Specialization in Same-Sex and Different-Sex Couples*

We examine time allocation decisions in same-sex and different-sex couples from a Beckerian comparative advantage perspective. In particular, we estimate the comparative advantage relationship between time spent on either market or household activities and a dummy for being the highest earner in a couple on samples of same-sex and different-sex couples. Using the American Time Use Survey (ATUS), we find that same-sex couples specialize not as much as different-sex couples. We argue that these specialization differences are driven by the most traditional different-sex couples. Without married couples with wives at home taking care of children and husbands working outside the home, which represent at most 20 percent of all different-sex couples, we find that the highest earner in a couple spends 80 minutes more per day on market work and 40 minutes less per day on household work, regardless their sexual orientation. We therefore conclude that, from a comparative advantage perspective, most same-sex and different-sex couples specialize equally.

JEL Classification: D13, J15, J22

Keywords: time allocation, household work, market work, same-sex couples, different-sex couples, comparative advantage

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1 Introduction

The division of labor is generally stronger in different-sex couples than in same-sex couples; as noted in (recent) empirical studies, different-sex partners often end up in traditional families, with men specializing in market work and women in household work (Aguiar and Hurst, 2007; Ramey and Francis, 2009; Juhn and McCue, 2017), whereas same-sex partners tend to be much more similar in how they allocate their time to market and/or household work (Jepsen and Jepsen, 2006; Tebaldi and Elmslie, 2006; Black et al., 2007; Leppel, 2009; Giddings et al., 2014; Jepsen and Jepsen, 2015; Prickett et al., 2015; Bauer, 2016; Martell and Roncolato, 2016). Is there an explanation for these specialization differences?

Long before empirical same-sex evidence became available, Becker (1991) already speculated that same-sex couples should specialize less than different-sex couples. According to his theory on comparative advantage and family specialization, partners can mutually benefit if they specialize and take advantage of each others comparative advantage in market and household work; in the absence of sex differences between partners, Becker argued that same-sex partners are expected to specialize less because they have less to gain from their comparative advantage. *But is the comparative-advantage explanation the most compatible one?* Casual evidence suggests that there might be other explanations for why same-sex couples specialize less than different-sex couples; among these are traditional gender roles, the likelihood to have children, partner choice, and partnership stability (Black et al., 2007).

In this study we examine time allocation decisions in same-sex and different-sex couples from a Beckerian comparative advantage perspective (Becker, 1981, 1991). Since comparative advantage is often defined in terms of a comparative advantage in earnings potential, which is generally not observable, we take an intermediate approach, relate unobservable earnings potential to observable hourly earnings, and test whether the highest earner in a couple spends more time on market work and less on household work. In particular, we estimate the comparative advantage relationship between time spent on either market or household activities and a dummy for being the highest earner in a couple on samples of same-sex and different-sex couples. We also estimate the same relationship on alternative samples (consisting of less conventional couples, cohabiting couples, childless couples, and younger and thus more recently formed couples) to explore some of the alternative explanations for why same-sex couples may specialize less than differen-sex couples.[1]

[1]Unfortunately, we are unable to empirically distinguish comparative advantage model predictions from the bargaining model predictions. Bargaining models, introduced by Manser and Brown

Using data from the American Time Use Survey (ATUS) for the years 2003 to 2019, we find that same-sex couples specialize not as much as different-sex couples. We argue that these differences are driven by the most traditional couples in the sample, that is to say, married couples with wives at home taking care of children and husbands working outside the home. Without those traditional couples, which represent at most 20 percent of all different-sex couples, we find that partners in same-sex and different-sex are equally responsive to each others' comparative advantage; that is, the highest-earning partner spends 80 minutes more per day on market work and 40 minutes less per day on household work, regardless their sexual orientation. In couples where both partners work, we find that partners continue to specialize, but they specialize less; that is, the highest-earning partner spends about 40 minutes more on market work and 30 minutes less on household work, again regardless their sexual orientation. We therefore conclude that for the majority of same-sex and different-sex couples a comparative advantage in terms of a wage rate advantage is equally relevant for the time allocation decisions they make.

Our study adds to the growing literature on the economic lives of lesbian and gay couples. First, our study contributes to the literature on same-sex specialization, and suggests that same-sex partners profit as much from each others' comparative advantage as different-sex partners do.[2] Second, our study also contributes to the literature on lesbian and gay earnings, and offers specialization as a possible explanation for the observed lesbian premia and gay penalties. If specialization increases the highest earners' time spent at market work and (because of that) their market skills, specialization differences between same-sex and different-sex couples can explain why most researchers find that lesbian women earn more than heterosexual women and gay men earn less than heterosexual men (see Klawitter (2015), Valfort (2017) and Jepsen and Jepsen (2020) for recent reviews on the topic).

The latter contribution also hints at a limitation of our study. The estimation

(1980) and McElroy and Horney (1981), also link specialization in families to partner differences in earnings and earnings potential, albeit for a different reason. These models postulate that partners have distinct preferences and bargain their way to a mutually-agreeable division of labor. If higher earnings (or earnings potential) implies more bargaining power, partners with the higher earnings will specialize in market work because they can more easily buy shared household goods with the money they earn in the market. Given that earnings differences are, on average, smaller in same-sex couples, bargaining models then predict, just like comparative advantage models, that same-sex couples specialize less than different-sex couples.

[2]Several economists have questioned the relevance of comparative advantages in same-sex couples on opposing grounds: the comparative advantage model is incorrect because same-sex couples (sometimes) deviate from the model predictions (Martell and Roncolato, 2016); and the comparative advantage model is correct but fails to predict less specialization in same-sex couples (Badgett, 1995). Our results point to the latter as the more plausible one.

strategy we use assumes that the causal link runs from being the highest earner in a couple (independent variable) to time spent on either market or household activities (dependent variable). If specialization leads to wage rate differences in couples, our key independent variable turns endogenous and the causal link may reverse. This does not mean, however, that we cannot get meaningful estimates. In our case, we can still detect comparative-advantage driven specialization if we assume that the highest earner in a couple was already the highest earner (or the one with highest earnings potential) when the couple was formed.[3]

The remainder of this paper is structured as follows. Section 2 describes the data. Section 3 discusses our empirical strategy. Section 4 presents the empirical results. Section 5 explores other mechanisms than a comparative earnings advantage to understand specialization differences between same-sex and different-sex couples. Section 6 concludes.

2 Data

The data we use in this study come from the American Time Use Survey (ATUS), which is a nationally representative survey on how people in the United States spend their time. The U.S. Census Bureau conducts the survey annually (since 2003) under a random sample of households that participated in the Current Population Survey (CPS). In particular, one household member aged 15 or older is randomly chosen to answer questions about his or her time use. The selected household member is interviewed two to five months after the completion of the final CPS interview. Using telephone interviews, respondents are asked on their activities based on a 24-hour time diary, starting at 4 a.m. on the previous day and ending at 4 a.m. on the day of the interview. Respondents are only interviewed once about their time use.

In our analysis, we pool all annual cross-sectional ATUS samples from 2003 to 2019 and focus on those variables that are most relevant to our study: sexual orientation, time use activities related to work and home production, and each partner's comparative advantage in couples (based on partner earnings taken from the CPS).

Sexual orientation. We distinguish same-sex couples from different-sex couples using the answers to three survey questions: one about own sex, one about the sex of all other household members, and one about the relationship to each other

[3]Pollak makes a similar point and argues that wage rates can be treated as exogenous indicators when couples decide on how to specialize (Pollak, 2005, 2011).

household member. We classify those respondents who live together with a same-sex spouse or same-sex unmarried partner as homosexual. All other partnered or married respondents are classified as heterosexual.[4] There are 742 cohabiting homosexual respondents and 110,927 cohabiting heterosexual respondents, which equals a 0.7% share of same-sex couples.[5] In the main analysis, we do not distinguish between married and unmarried different-sex couples, as the corresponding information about same-sex couples is censored.[6]

Specialization. We define household specialization in terms of time allocation decisions and measure time spent on market work activities and time spent on home production activities using the standard classification of, e.g., Aguiar and Hurst (2007) and Connolly (2008); see appendix table A1 for a detailed description. These are the two main dependent variables in our analysis. The total time devoted to market work includes time spent at work, work-related activities, other income-generating activities, and travel related to those activities. The total time devoted to household activities includes time spent on typical household chores (e.g., cooking, cleaning, maintenance, repair, decoration, et cetera), caring for and helping household and non-household members (children and adults), consumer purchases (e.g., grocery shopping), professional services (e.g., going to a bank), household services (not done by oneself, e.g., going to and waiting associated with repair services), and travel related to those activities. While the division between market work and household work is probably more pronounced during weekdays, there is no doubt that some of these activities also take place during weekends (e.g., some work in weekend jobs, some smooth their household chores throughout the week). We therefore sample all respondents reporting activities on any day of the week.

Comparative earnings advantage. We measure the unobservable comparative advantage in earnings potential through the observed differences in realized earnings. In particular, we classify those respondents to have a comparative advantage over

[4] One concern is that erroneous answers about the sex of the spouse or unmarried partner may lead to a miss-classification of heterosexual respondents as homosexual respondents. In the CPS, a direct cohabitation question was added in 2007 to avoid such errors, and since 2010, same-sex spouses are edited and uniformly classified as "unmarried partners". In the ATUS data, there is a sudden decrease in homosexual respondents with "spouses" after 2006 (there are only three such cases, compared to 39 cases between 2003 and 2006). We drop all of these suspicious cases in the analysis, although keeping them does not affect our results (results available upon request).

[5] This is about half the share of (married and unmarried) cohabiting same-sex couples as estimated by the American Community Survey in the years 2005 to 2018; see https://www.census.gov/data/tables/time-series/demo/same-sex-couples/ssc-house-characteristics.html (accessed August 24, 2020).

[6] Same-sex couples are likely to represent a mix of married and unmarried couples, as the first state introduced same-sex marriage in 2004, the second one in 2008, and a further 34 states before June 26, 2015 when it was legalized across all states.

their partner if they are the highest earner in the couple. We therefore construct the hourly wage rate for each partner in the couple by linking ATUS data to CPS data which provide labor-market information on both partners. We use either the reported hourly wage rate or the computed hourly wage rate from the reported weekly earnings and hours usually worked per week.[7] In the ATUS interview, respondents (but not their spouses) are asked the same set of questions on earnings and hours worked. In case we have no information on the hourly wage rate, we use the ATUS data to compute hourly wage rates analogously for the respondents. We assign zero wages to all remaining respondents and spouses. Our main independent indicator variable equals one if the respondent has a higher hourly wage rate than that of his/her partner (and zero otherwise).

In addition to the three key variables in our study, we also collect information on other relevant (demographic) variables, including education, age, number of children, and location choice (using indicators for residing in major metropolitan areas and states that legalized gay marriage before 2014). These variables sometimes serve as additional explanatory variables in our regression analysis.

The sample suitable for analyzing household specialization requires couples in their prime working years with meaningful information on their time use and comparative earnings advantages. We therefore restrict the sample to those couples where both partners are between 25 and 65 years, where the interviewed partner reports positive time use on at least one activity listed in the ATUS (including activities other than market work and household production activities), and where at least one partner is working for pay and reports positive earnings (similar to Bertrand et al. (2015)). In our analysis, we also focus on the subsample of two-earner couples where both partners work for pay and report positive earnings.

Table 1 presents summary statistics for the main variables in the sample of couples with at least one earner. In particular, we report means and standard deviations for 503 homosexual couples and 76,237 heterosexual couples (taken from 225 gay, 278 lesbian, 36,664 heterosexual male, and 39,573 heterosexual female survey respondents). We see that the time devoted to market work and household work varies by household type. The average homosexual respondent spends about 6 hours per day on market work and almost 2.5 hours on household work. In comparison, the average heterosexual respondent spends almost one hour less on market work

[7]Directly-reported hourly earnings are top-coded at \$99 or \$99.99 in the CPS/ATUS data. We exclude couples in which any of the spouses has a (computed or directly-reported) hourly wage rate of above \$99 in the analysis. There are about 200 such cases in the data, but their exclusion does not affect the results (results available upon request).

(5 hours) and one hour and twenty minutes more on household work (3.75 hours). These differences are to a large extent driven by the female respondents in heterosexual couples. Of all respondents, they are the only ones who spend less time on market work (4 hours) than on household work (4.7 hours). They are also the ones who are the least likely to report any time on market work activities (almost 50 percent). The overall employment rates taken from the same couples reporting on their employment status in the CPS also indicate that female respondents in heterosexual couples are the least likely to be employed (77 percent). These time use (and employment) patterns indicate that specialization is generally stronger in heterosexual couples, with mostly women specializing in home production. Note that the relatively low amount of market work observed in all couples is partly due to the 50 percent of time use interviews being conducted in weekends when fewer respondents work.

We also see that the earnings (mostly drawn from the CPS) vary by household type. The average homosexual respondent earns more than the average heterosexual respondent. This is partly driven by the female respondents in heterosexual couples, who earn substantially less than all other respondents, and by gay respondents in homosexual couples, who earn substantially more than all other respondents. The latter is at odds with the gay penalty observed in most other studies on sexual orientation and earnings. There are a number of reasons for the higher earnings of homosexual respondents; compared to the heterosexual respondents, homosexual respondents are better educated, have fewer children, more likely reside in metropolitan areas in tolerant states (defined as those states that legalized same-sex marriage before 2014), where earnings levels tend to be higher, and appear more frequently in recent samples, when nominal earnings levels are higher.

In any case, our analysis revolves around earnings differences within couples, and not so much around earnings differences across couples. When we compare the earnings between partners within couples (to identify the highest earner in the couple), two things become clear. First, there are hardly any earnings differences within homosexual and heterosexual couples. In couples where both partners work, in particular, we see that the average respondent earns as much as his or her partner, regardless of household type. This means that about half of all respondents are classified the highest earner in the two-earner couple sample. This also holds (approximately) for the larger sample that includes single-earner couples.[8] Second,

[8]One natural concern is that the randomly selected partner in the couple selectively responds to the ATUS interview. Selective response behavior, for instance, could generate earnings differences in couples if stay-at-home respondents are not only more likely to participate in the survey but also

there are traditional gender differences in earnings when we compare male and female earnings in heterosexual couples. As a result, we see that in most heterosexual couples the highest earner is the man (about 65 percent).

3 Empirical strategy

We examine time-allocation decisions in same-sex and different-sex couples from a Beckerian comparative advantage perspective (Becker, 1981, 1991). Since comparative advantage is defined in terms of a comparative advantage in earnings potential, which is generally not observable, we take an intermediate approach, relate unobservable earnings potential to observable hourly earnings, and test whether the highest earner in a couple spends more time on market work and less on household work. In particular, we estimate the following two comparative advantage relationships for individuals in same-sex and different-sex couples:

$$\textit{MARKET WORK}_i = \alpha_M + \beta_M \times \textit{HIGHER EARNER}_i + \gamma_M \times X_i + \epsilon_i \qquad (1)$$

$$\textit{HOUSEHOLD WORK}_i = \alpha_H + \beta_H \times \textit{HIGHER EARNER}_i + \gamma_H \times X_i + \varepsilon_i. \qquad (2)$$

where $\textit{MARKET WORK}_i$ and $\textit{HOUSEHOLD WORK}_i$ represent the time (measured in minutes per day) spent on market work activities and home production activities for respondent i, $\textit{HIGHER EARNER}_i$ represents a dummy variable indicating whether the respondent earns more than his or her partner, X_i represents a set of survey-specific and couple-specific controls, and ϵ_i and ε_i represent the error terms. We treat the parameters β_M and β_H as tests of Becker's comparative advantage model; that is, if individuals in couples specialize and take advantage of each other's comparative advantage in earnings (potential), we should get a positive β_M and a negative β_H. We estimate these two equations with a weighted seemingly unrelated regression model (SUR) using the individualized weights provided by the ATUS.[9]

In order to test Becker's predictions, we estimate two versions of the same model. In the first version, we separately estimate equations (1) and (2) on the samples of

more likely to have partners who work and earn more. We find that the share of couples for whom the respondent is the highest earner is close to 50 percent for all homosexual and heterosexual couples, providing little evidence of selective survey response.

[9]Because the two regression equations only differ in the dependent variables (and not in the independent variables), this approach yields parameter estimates that are identical to the ordinary least squares (OLS) estimates. In calculating the standard errors, however, this approach takes account of the correlated error terms and (likely) yields standard errors that are smaller than the OLS standard errors.

same-sex and different-sex couples: these time-use estimates test whether the different couples specialize by taking advantage of each other's comparative advantage in earnings. In the second version, we estimate a fully interacted model on the pooled sample (including same-sex and different-sex couples) where all the independent variables in (1) and (2) are interacted with same-sex-couple dummy:

$$\begin{aligned} \textit{MARKET WORK}_i &= \alpha_{1M} + \beta_{1M} \times \textit{HIGHER EARNER}_i + \gamma_{1M} \times X_i + \\ &\quad \alpha_{2M} \times \textit{SAME SEX}_i + \gamma_{2M} \times X_i \times \textit{SAME SEX}_i + \\ &\quad \beta_{2M} \times \textit{HIGHER EARNER}_i \times \textit{SAME SEX}_i + u_i, \end{aligned} \tag{3}$$

$$\begin{aligned} \textit{HOUSEHOLD WORK}_i &= \alpha_{1H} + \beta_{1H} \times \textit{HIGHER EARNER}_i + \gamma_{1H} \times X_i + \\ &\quad \alpha_{2H} \times \textit{SAME SEX}_i + \gamma_{2H} \times X_i \times \textit{SAME SEX}_i + \\ &\quad \beta_{2H} \times \textit{HIGHER EARNER}_i \times \textit{SAME SEX}_i + \upsilon_i, \end{aligned} \tag{4}$$

where $\textit{SAME SEX}_i$ represents the same-sex couple dummy variable. In equations (3) and (4), the key parameters are the interaction parameters β_{2M} and β_{2H} which test whether different-sex and same-sex couples specialize differently. If same-sex couples are less driven by comparative earnings advantages and as a result specialize less, we should get a negative β_{2M} and a positive β_{2H} (assuming that different-sex couples do specialize with a positive β_{1M} and a negative β_{1H}).

In our analysis, we also separately examine gay and lesbian respondents (in same-sex couples) and compare their comparative advantage estimates to those of heterosexual respondents (in different-sex couples). Most of our attention, however, is focused on the comparison between homosexual respondents (pooling gay and lesbian respondents) and heterosexual respondents. We do so because Becker's predictions apply to homosexual couples (without making a distinction between gay and lesbian couples), because the pooled sample is much larger and thus statistically more suited to detect any time-use response differences by earning status and/or household type, and because the average time-use outcomes (reported in table 1) do not differ much between gay and lesbian respondents.[10]

[10]In our analysis, we do not make the comparison between gay men to heterosexual men and between lesbian women to heterosexual women either (as is done by Tebaldi and Elmslie (2006) and Martell and Roncolato (2016)). The following example illustrates why this type of comparison might not be so informative. Let's assume we compare lesbian and heterosexual women to gauge the effect of traditional gender roles, which supposedly get heterosexual women to engage less in market work and more in household work. The problem is that we know little about the lesbian respondents; that is, we do not know whether the lesbian respondent in our sample is the one who adopted a role what in different-sex couples would be considered as masculine or whether it is

4 Results

Table 2 presents the comparative advantage estimates by time use category (market work activities and household work activities), household type (different-sex couple, same-sex couple, gay couple, and lesbian couple), and working status (all couples and two-earner couples), taken from specifications with varying sets of control variables (as in equations (1) and (2)). In the odd-numbered columns, we regress the two time-use outcomes on the higher-earner dummy controlling for survey-year and survey-day-of-the-week fixed effects. In the even-numbered columns, we add several couple-specific variables to the regression, including the couples' age, education, children, and location (we refer to the notes of table 2 for a more detailed description of the couple characteristics). Panels A, B, C, and D present the estimates for different-sex couples, same-sex couples, gay couples, and lesbian couples. The estimates for the highest earner indicate whether individuals in couples specialize and take advantage of each other's comparative earnings advantage. Panels B, C, and D also present the estimated differences between the different couples taken from the fully interacted regression models run on pooled samples (as in equations (3) and (4)). The estimated differences indicate whether individuals in same-sex couples, gay coupes, and lesbian couples specialize differently than individuals in different-sex couples.

Panel A presents the estimates for different-sex couples. In column 1, we see that heterosexual respondents who earn more than their partner spend 129 minutes more per day on market work than those who earn less than their partner. And reversely, we see in column 3 that the same respondents spend 78 minutes less per day on household work. Adding controls in columns 2 and 4 does not affect the estimates. These significant estimates suggest that couples take account of their comparative advantage in earnings when they decide to specialize. One natural concern is that the positive estimates for market work activities (but not the negative estimates for household work activities) obtained in samples with many single-earner couples are partly mechanical; that is, single-earners in couples are (almost) by construction the highest earner in couples, spending more time on market work activities than their partner.[11] In this case, it is possible that single-earner couples drive the positive

her partner who did that. Hence, the time-use estimates of lesbian respondents always reflect an average response of the two lesbian partners in a couple. Their time-use responses should therefore be compared to the time-use responses of heterosexual men *and* women rather than to that of heterosexual women only.

[11] Note that the single earners in our samples are not always the highest earner. Given that we combine earnings information from the ATUS interview and the preceding CPS interview, it is possible that some individuals not employed at the time of the ATUS interview were employed at the CPS interview and had higher earnings than their partner.

estimates for market work activities, even if they do not specialize. While the negative estimates for household work activities suggest otherwise, we additionally address this concern by looking at the sample of two-earner couples where both partners have strictly positive earnings. This can be viewed as a test of household specialization measured at the intensive margin.[12] The estimates in columns 5 to 8 show again that being the highest earner in the couple is associated with a significant increase in time spent on market work (40 minutes), and a significant decrease in time spent on household work (31 minutes). While the magnitudes of these estimates are smaller for two-earner couples, we still observe the same qualitative pattern of household specialization in different-sex couples.[13]

Panel B presents the estimates for all same-sex couples. In the larger sample with single-earner and two-earner couples (columns 1 to 4), the estimates indicate that there is comparative-advantage driven specialization in same-sex couples. Having higher earnings is significantly associated with more time spent on market work (78 minutes in column 1) and less time spent on household work (42 minutes in column 3). When we include controls, the corresponding estimates get slightly smaller (74 and 34 minutes in columns 2 and 4, respectively) but remain statistically significant. When we compare these estimates to those obtained for different-sex couples (in panel A), we see that the comparative advantage estimates for market-work and household-work activities are all significantly smaller in magnitude. As before, there is the concern that the lower share of single-earners among same-sex couples (as reported in table 1) may mechanically drive down the estimates for market work activities, for reasons unrelated to specialization. When we turn to same-sex two-earner couples (in columns 5 to 8), we indeed see that the estimates for market work fall but continue to be positive, with the highest earner spending 26 and 22 minutes more on market work activities (in columns 5 and 6). The estimates for household work hardly change and remain negative, with the highest earner spending 30 and 33 minutes less on household work activities (in columns 7 and 8). Only the estimates for household work are precise and large enough to be statistically significant. When we compare two-earner same-sex and different-sex couples, the comparative advantage estimates appear remarkably similar, with none

[12] This approach is not perfect, however. While excluding zero earners takes account of the mechanical relationship between no work and being the lowest earner, restricting the sample to two-earner couples may introduce sample selection bias. If two-earner couples are also couples that specialize less, we expect that the estimates for the highest earner are biased downwards.

[13] Even though we do not have information on the time use of the non-interviewed spouse, the fact that interviewed respondents are randomly chosen suggests that the non-interviewed partner would react symmetrically in terms of time use. Thus, even though respondents with the highest or lowest earnings never come from the same household, they can be viewed as if they would.

of the estimated differences hinting at significant specialization differences. The latter suggests that same-sex and different-sex two-earner couples are quite similar in how they trade off their comparative advantage in earnings when they specialize.

Panels C and D present the estimates taken from the two comparative advantage regressions run on split samples of gay and lesbian couples. For gay couples, we see significant positive estimates for market work and significant negative estimates for household work throughout. These estimates do not change much when we additionally control for couple characteristics or when we restrict the sample to two-earner couples. In terms of magnitude, the estimates indicate that the highest earner in gay couples devotes 75 to 90 minutes more on market work activities and 56 to 68 minutes less on household chores. While these estimates clearly suggest that gay couples specialize, it is not so clear anymore whether they specialize more or less than different-sex couples. When we consider all couples (including one- and two-earner couples), we see there is less specialization in gay couples, with the estimated differences for market work being statistically significant. But when we restrict the sample to two-earner couples, we no longer see less specialization in gay couples. In fact, the comparative advantage estimates for two-earner couples are larger (not smaller) in absolute terms than those for two-earner different-sex couples. Compared to the highest earner in different-sex couples, the highest earner in two-earner gay couples spends 50 more minutes on market work and 37 minutes less on household work. While the time-use differences appear sizable, the corresponding estimates are never statistically significant.

For lesbian couples, we see a different pattern. While all the comparative advantage estimates indicate that lesbian couples specialize less than comparable different-sex couples, it is not so clear anymore whether lesbian couples specialize at all. In two-earner couples, in particular, the estimates are close to zero, indicating that the lesbian respondents in our sample spend as much time to market work and household work as their partner, regardless of their earnings status.[14] Similar as before, though, the differences between lesbian couples and different-sex couples are imprecisely estimated and in the two-earner sample statistically insignificant.

4.1 Sensitivity checks

We next examine how sensitive our comparative advantage estimates are to alternative comparative advantage measures and alternative sample splits. We focus on

[14]These findings relate to those reported in Kurdek (2007), who finds that time devoted to household chores is more equally shared in lesbian couples than in gay couples.

the comparison between same-sex and different-sex couples, run the fully interacted regression model on the pooled sample of same-sex and different-sex couples (as in equations (3) and (4)), and report only the two estimates for the highest earner and for the highest earner interacted with the same-sex couple dummy. The estimates for the highest earner (or variations thereof) indicate whether individuals in different-sex couples specialize and take advantage of each other's comparative earnings advantage. The estimates interacted with the same-sex dummy indicate whether individuals in same-sex couples specialize differently than individuals in different-sex couples. Table 3 presents estimates for all couples and two-earner couples. Panel A reproduces our previous results (reported in table 2, panels A and B), for reference purposes.

We measure a comparative advantage in earnings by means of an indicator for the highest earner in the couple. One concern is that couples may not respond, or respond less, to a comparative earnings advantage if partner differences in hourly earnings are not measured accurately enough to represent a comparative earnings advantage that is more structural in nature. One way to deal with this is to exclude those couples for whom our comparative advantage measure is suspect. Assuming that misclassification of the highest earner is more common among couples with small differences in earnings, we can estimate our regression model on samples limited to couples with larger earnings differences. Panel B presents these comparative advantage estimates for couples with earnings differences larger than 10 USD (defined as daily full-time equivalent earnings differences measured in 2015 USD).[15] We see that the time-use estimates hardly change.

Another way to arrive at a more structural comparative earnings advantage is to predict comparative earnings advantage in couples from partner differences in education and age. Because education and age are strong predictors of earnings, partners with a predicted earnings advantage are probably also the ones who already had this advantage when the couple was formed. We first estimate fully interacted linear probability models where the indicator for being the highest earner in the couple is regressed on partner differences in education and age, week-of-the-day and survey-year fixed effects, and in columns 2, 4, 6 and 8 the partner averages of education and age, children, and location effects. This is equivalent to separate linear probability regressions for different-sex and same-sex couples. We then reestimate the comparative advantage models regressing time spent on either market or household activities on the predicted probability for being the highest earner in

[15] A daily full-time equivalent difference of 10 USD corresponds to a 1.25 USD difference in hourly earnings and 200 USD difference in monthly full-time equivalent earnings.

the couple. Panel C presents the comparative advantage estimates, together with F-statistics for tests whether the partner differences in education and age are significant predictors for being the highest earning partner. As expected, we find that partner differences in education and age predict the comparative earnings advantage (measured as the highest earner indicator). When we replace highest earner in the couple indicator with its prediction, we see much stronger comparative advantage responses in different-sex couples than in same-sex couples. While this pattern of results suggests that different-sex couples specialize much more strongly than same-sex couples, we are unable to draw firm conclusions. The differential responses in different-sex and same-sex couples are imprecisely estimated and (in almost all specifications) statistical insignificant. Analogous to a weak first-stage relationship in an IV context, the main reason for the lack of precision is that differences in education and age are relatively weak predictors of the comparative earnings advantage in same-sex couples (with F-statistic values below 10), but not in different-sex couples (with F-statistic values far beyond 10). What we can say, therefore, is that different-sex couples specialize in line with the predictions of a comparative earnings advantage model.

The time-use data we use in our study are taken from time-use interviews held any day of the week. One concern is that specialization patterns may be different (and less strong) in weekends. In a final sensitivity check, we drop all weekend observations. This is almost half of the sample. Panel D shows that specialization indeed appears stronger on weekdays. In the larger samples (with single-earner and two-earner couples), we see significant comparative advantage differences between different-sex and same-sex couples, suggesting stronger specialization in different-sex couples. In the two-earner samples, however, the estimated comparative advantage differences are smaller and no longer statistical significant, suggesting that same-sex and different-sex two-earner couples are more similar in how they trade off their comparative advantage in earnings.[16]

5 Alternative mechanisms for specialization

Apart from couple differences in comparative earnings advantage, there may be other (and perhaps more relevant) mechanisms for why same-sex couples specialize less than different-sex couples (Black et al., 2007); among these are traditional

[16] A separate sensitivity analyses for gay and lesbian couples lead to very similar conclusions. These results are available on request.

gender roles, children (or the absence thereof), and partnership stability. Below we try to assess whether, or to what extent, the differences in comparative advantage estimates between same-sex and different-sex couples are driven by these alternative mechanisms.[17]

One possible mechanism is that same-sex couples may be less gender conforming than different-sex couples. Economic models with gender identity, as proposed in Akerlof and Kranton (2000) and Bertrand (2011), predict that different-sex couples specialize partly because there are costs involved from deviating from the prevailing gender norm (that husbands work more in the market and wives work more in the household). Given that sex-driven gender norm differences do not exist in same-sex couples, these models then predict stronger specialization in different-sex couples, in particular in different-sex couples where the husband is the single earner. If conventional gender norms indeed reinforce specialization in different-sex couples, it may be better to compare same-sex couples with unconventional different-sex couples (a more appropriate comparison group). Such a comparison, however, requires determination of unconventional couples.

To begin with, we take couples where men work in the market and women work exclusively in the household as the reference for conventional couples and all other couples as unconventional couples. In panel A of table 4, we present the comparative-advantage estimates in the same format as in table 3, except that we compare same-sex couples with unconventional different-sex couples (and in the panels below with unmarried, childless, and younger different-sex couples).[18] When compared to the main specialization results for different-sex and same-sex couples (reported in panel A of table 3), we obtain much smaller comparative-advantage estimates. The smaller estimates for unconventional couples are statistical significant, suggesting that the highest earner in those couples still spends more time on market work and less on household work. The smaller differential estimates between unconventional and same-sex couples, however, have changed sign and are no longer statistical significant, suggesting that the same-sex couples (as observed in the larger samples of single-earner and two-earner couples) are certainly not less responsive to

[17] It is important to note that the heterogeneity analysis we present here is merely speculative, for three reasons. First, our same-sex sample is small. Second, we construct alternative comparison groups based on couple characteristics (labor market status, marital status, and childlessness) that may not be exogenous to the time-use decisions couples make. And third, we lack the information to explore possible other mechanisms that lead to less specialization in same-sex couples (including partner differences in bargaining and restricted partner choice).

[18] For completeness, we also compare same-sex couples with conventional different-sex couples (and with different-sex couples who are married, have children, and are older). The corresponding comparative-advantage estimates are displayed in appendix table A3.

a comparative advantage in earnings than different-sex couples.

Marriage is probably another way for different-sex couples to adhere to conventional gender roles (Moreau and Lahga, 2011). If we treat unmarried different-sex couples as unconventional couples who choose to cohabitate as an alternative to marriage, we can also compare same-sex couples (who might either be married or unmarried) to unmarried different-sex couples. Panel B presents these estimates. With unmarried different-sex couples as the comparison group, we get qualitatively the same results as with unconventional couples in the previous panel. When we compare the estimates for unmarried different-sex couples to married different-sex couples (reported in the parallel panel B of appendix table A4), unmarried couples appear less responsive to a comparative earnings advantage than married couples. When we test for comparative-advantage differentials between same-sex and unmarried different-sex couples, we find no significant differences anymore in how they specialize. The latter corroborates the analysis of Giddings et al. (2014) and Jepsen and Jepsen (2015), who find that same-sex couples are more similar in terms of labor-market related outcomes to unmarried different-sex couples than to married ones.

There is another important mechanism, and that is that same-sex couples are much less likely to have children (see also table 1). Children are widely recognized as one of the primary reasons for couples to specialize (Becker, 1981, 1991; Angrist et al., 1998; Lundborg et al., 2017; Kleven et al., 2019). Given the greater difficulties for same-sex couples (and gay couples in particular) to become parents, there is less reason for same-sex couples to specialize. The estimates mirror those of the previous panel. When we compare different-sex couples with and without children, in panel C of table 4 and appendix table 3A, we find that childless couples specialize less. When we compare childless different-sex couples to same-sex couples, in panel C of table 4, we find no significant specialization differences.

The last mechanism we explore relates to same-sex relationships being less stable than different-sex relationships. While the higher costs of finding the right partner and the lower specific investments (fewer children) may discourage specialization in same-sex couples, the same factors may make same-sex couples less stable as well.[19] Higher expectations about breaking up may reduce the level of specialization even more in same-sex couples (Lundberg and Rose, 2000). The empirical evidence

[19]Gay men and lesbian women may experience higher costs in finding a partner. Compared to heterosexual men and women, homosexual men and women must find their partner in a much smaller pool of potential partners whose sexual orientation is not always apparent. Given the higher search costs for homosexual men and women, it may be more difficult for homosexual men and women to match up with the right partner (to specialize).

about less stable same-sex relationships is mixed, however. Some studies find lower relationship stability in lesbian (but not gay) couples than in different-sex couples (Balsam et al., 2017), and others find no difference compared to cohabiting different-sex couples but lower stability compared to married different-sex couples (Manning et al., 2016).[20]

Regardless, we next compare same-sex couples with younger different-sex couples in panel D. Because there is no direct information on relationship duration, we proxy relationship duration (and in that sense relationship stability) with the couples' average age and assume that younger couples (which we define as couples with an average age of less than 30 years) are on average in less stable relationships. With young different-sex couples as the comparison group, we see that the comparative-advantage estimates are marginally larger for older and possibly more stable couples (see panel D in appendix table 3A). In columns 1 to 4, we also see that the comparative-advantage estimates are significantly smaller for same-sex couples, suggesting that same-sex couples do not specialize as much as young different-sex couples do. In columns 5 to 8, when the sample is limited to two-earner couples, the tendency of same-sex couples to specialize less has vanished.

In summary, we have examined some other mechanisms than a comparative earnings advantage to understand why different-sex couples specialize more than same-sex couples. Our results in panels A, B, and C seem to suggest that differences in specialization are driven by the more conventional different-sex couples, that is, couples where men work in the market and women work in the household, married couples, and couples with children. When we define conventional different-sex couples more rigourously as married couples with husbands working outside the home and wives at home taking care of children (which is the intersection of the three conventional couples in panels A, B, and C of appendix table 3A) and compare same-sex couples with different-sex couples deleting the most conventional different-sex couples from the sample, we get very similar results: that is, without the most conventional different-sex couples, which is only 20 percent in the sample of different-sex couples, we find in panel E that all couples, meaning both same-sex and different-sex couples, are equally responsive to a comparative advantage in earnings.

[20]The inconsistent results on relationship stability might be explained by shifting attitudes towards same-sex couples. Aksoy et al. (2020) show that the introduction of same-sex relationship recognition policies has positively affected such attitudes. Chen and van Ours (2020) provide evidence that same-sex marriage legalization positively affects the stability of same-sex relationships.

5.1 Alternative mechanisms for gay and lesbian couples

While we prefer to treat same-sex couples as one group for the reasons we mention at the end of section 3, we can also explore the other specialization mechanisms (traditional gender roles, marriage, children, and partner stability) for gay and lesbian couples separately. Appendix table A4 presents these estimates (in the same format as table 4) taken from fully interacted regression models where all the independent variables are interacted with gay-couple and lesbian-couple dummies.

When we consider all couples (including one- and two-earner couples) in columns 1 to 4, the separate estimates for gay and lesbian couples lead to comparable conclusions as for same-sex couples (treated as one group). With the most traditional different-sex couples excluded from the sample (in panel E), there are no clear specialization differences anymore between gay, lesbian, and different-sex couples.

When we consider two-earner couples in columns 5 to 8, the separate estimates for gay and lesbian couples tend to deviate from each other. Compared to the comparative-advantage estimates in different-sex couples who are unconventional (in panel A), who are unmarried (in panel B), who are childless (in panel C), who are young (in panel D), or a combination thereof (in panel E), we always see that gay couples specialize more and lesbian couples specialize less. None of the estimated differences, however, are precise enough to be statistically significant. Unfortunately, these results for two-earner gay and lesbian couples are not so informative. First, the estimates do not tell us much why specialization appears stronger in gay couples and weaker in lesbian couples. And second, the estimates may be more subject to small sample bias (arising from splitting the already small sample of same-sex couples into gay and lesbian couples) and sample selection bias (arising from restricting the sample to two-earner couples).

6 Conclusion

Becker's comparative advantage model of household specialization (1981, 1991) predicts that same-sex couples should specialize less than different-sex couples. In the present study, we try to test this prediction by examining how much time the highest earner in same-sex and different-sex couples spends on either market or household activities. Using the ATUS, we indeed find that same-sex couples specialize not as much as different-sex couples. We argue that these specialization differences are driven by the most traditional different-sex couples. When we estimate the comparative advantage model on samples deleting married couples with wives at home

taking care of children and husbands working outside the home, which represent at most 20 percent of all different-sex couples, we find that the highest earner in a couple spends 80 minutes more per day on market work and 40 minutes less per day on household work, regardless their sexual orientation. We therefore conclude that, from a comparative advantage perspective, most same-sex and different-sex couples specialize equally.

Our study offers -we think- two interesting contributions. First, our findings are interesting in their own right. Many empirical studies on the economic lives of same-sex and different-sex couples highlight that same-sex couples are different from different-sex couples on many relevant economic dimension including education (they are better educated), children (they have far fewer children), labor market attachment and wages (in our sample, lesbian women have higher wages and greater labor market attachment than heterosexual women). While we show, like previous studies, that same-sex couples initially differ from different-sex couples in household specialization (they specialize less), we also show that most same-sex and different-sex couples are alike and equally responsive to a comparative advantage in earnings when they decide to specialize.

Second, our findings are also of wider interest. Many empirical studies document that lesbian women have higher earnings than heterosexual women, and reversely, that gay men have lower earnings than heterosexual men.[21] When these gay penalties and lesbian premia are based on monthly or annual earnings, the estimated penalties and premia are subject to a number of specialization-related biases. One is a sampling bias: in case samples randomly select one partner per couple, male samples systematically undersample gay men that specialize more in market work and female samples systematically oversample lesbian women that specialize more in market work. Another bias is a labor supply bias: in case same-sex couples specialize less than different-sex couples, gay penalties and lesbian premia not only reflect differences in earnings but also differences in labor supply. Our findings indicate that we should be most concerned about sampling bias.

We conclude with two limitations of our study. First, we do not have samples of same-sex couples that are large enough to make informative sample splits. In our main analysis, for instance, we do focus mostly on same-sex couples and reluctantly distinguish gay from lesbian couples. In our heterogeneity analysis, we focus on different-sex couples instead and try to select those couples that are more similar in

[21] Similar to the lesbian premia that have been reported elsewhere, we find that lesbians workers have higher wages than heterosexual women. We do not find, as we discussed earlier, that gay workers have lower wages than heterosexual men.

a predictable fashion to same-sex couples (based on couple characteristics that may not be exogenous to the time-use decisions couples make). Second, we do not have an exogenous source of variation for who the highest earner in the couple is to make causal claims about Becker's comparative advantage model of household specialization. In our future work, we hope to overcome these limitations and reestimate the same comparative advantage model with much larger samples of gay and lesbian couples and a well-measured instrument for the highest earner in the couple (that is independent of cognitive and noncognitive ability differences between partners).

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Table 1
Summary statistics (means and standard deviations in italics)

	homosexual couples		heterosexual couples		gay men		lesbian women		heterosexual men		heterosexual women	
Time use (in minutes per day):												
market work	356	*304*	301	*290*	380	*318*	333	*287*	363	*298*	238	*268*
household work	165	*164*	226	*200*	150	*162*	180	*164*	171	*176*	282	*207*
no market work	.308		.399		.303		.312		.318		.483	
no household work	.104		.096		.130		.078		.150		.040	
Labor market characteristics (comparative advantage in earnings):												
highest earner (0/1)	.540		.522		.530		.550		.666		.375	
hourly wage	25.1	*17.9*	19.4	*16.2*	27.6	*20.5*	22.5	*14.6*	23.0	*16.8*	15.8	*14.7*
hourly wage, partner	22.8	*18.9*	18.1	*16.4*	24.5	*21.2*	21.0	*16.2*	14.7	*14.7*	21.6	*17.3*
employed (0/1)	.930		.848		.938		.922		.924		.771	
employed, spouse (0/1)	.864		.821		.845		.883		.737		.906	
employed, both (0/1)	.794		.669		.783		.805		.662		.677	
highest earner (0/1)[a]	.486		.486		.445		.524		.635		.335	
hourly wage[a]	28.0	*15.7*	23.7	*14.2*	31.6	*18.2*	24.8	*12.1*	26.2	*14.6*	21.3	*13.2*
hourly wage, partner[a]	28.2	*16.1*	23.9	*14.3*	32.6	*18.2*	24.3	*12.8*	21.4	*13.2*	26.4	*14.9*
Other characteristics:												
age	41.8	*10.1*	43.8	*10.5*	42.2	*9.7*	41.5	*10.5*	44.8	*10.5*	42.9	*10.3*
age, partner	42.2	*10.4*	44.0	*10.5*	43.0	*10.1*	41.5	*10.6*	43.0	*10.4*	45.0	*10.5*
years of education	15.4	*2.6*	14.0	*2.9*	15.1	*2.5*	15.6	*2.8*	14.0	*3.0*	14.1	*2.8*
years of education, partner	15.5	*2.7*	14.1	*2.9*	15.3	*2.7*	15.7	*2.6*	14.1	*2.9*	14.0	*3.0*
any children (0/1)	.177		.560		.102		.251		.560		.558	
number of children[b]	1.53	*.76*	1.95	*.97*	1.76	*.88*	1.45	*.70*	1.95	*.97*	1.94	*.96*
metropolitan area (0/1)	.954		.833		.968		.940		.833		.834	
tolerant state (0/1)	.449		.332		.433		.464		.331		.332	
interview on weekend (0/1)	.318		.286		.319		.317		.285		.286	
survey year	2013	*4.7*	2011	*4.9*	2013	*4.7*	2013	*4.7*	2011	*4.9*	2011	*4.9*
observation (all couples)	503		76,237		225		278		36,664		39,573	

Notes: See appendix tables A1 and A2 for the definition of the time use categories and the computation of the years of education. [a] Only two-earner couples. [b] Conditional on children living in the household. Metropolitan area is defined according to the census definition of metropolitan statistical area which has changed twice in the years included. Tolerant states are CA, CT, DE, DC, HI, ME, MD, MA, MN, NH, NJ, NM, NY, OR, RI, VT, WA in which same-sex marriage was effectively legalized before 2014 (excluding Iowa, but including Oregon). ATUS sample weights are applied.

Table 2
Comparative advantage regressions for different household types

	All couples				Two-earner couples			
	Market work		Household work		Market work		Household work	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: different-sex couples (sample sizes: 76237, 39668)								
HE	128.7***	128.9***	-77.5***	-78.2***	39.9***	39.8***	-30.7***	-30.7***
	(1.8)	(1.8)	(1.4)	(1.4)	(2.3)	(2.3)	(1.8)	(1.7)
Panel B: same-sex couples (sample sizes: 503, 321)								
HE	79.3***	73.5***	-41.5***	-34.4**	25.8	22.3	-30.4*	-32.9**
	(22.9)	(22.7)	(14.2)	(13.1)	(27.7)	(27.4)	(17.2)	(16.1)
(B-A)	-49.4**	-55.4***	36.0**	43.8***	-14.1	-17.5	0.3	-2.3
	(20.2)	(20.2)	(15.6)	(15.2)	(23.7)	(23.8)	(18.0)	(17.5)
Panel C: gay couples (sample sizes: 225, 140)								
HE	74.5**	78.7**	-62.0***	-55.8***	89.4**	90.2**	-67.7***	-68.0***
	(36.1)	(36.2)	(19.7)	(18.9)	(40.9)	(40.5)	(22.9)	(21.7)
(C-A)	-54.2*	-50.2*	15.5	22.4	49.6	50.4	-37.0	-37.4
	(29.6)	(30.2)	(22.9)	(22.7)	(35.5)	(36.2)	(26.9)	(26.6)
Panel D: lesbian couples (sample sizes: 278, 181)								
HE	80.5***	71.7***	-22.0	-12.2	4.7	-2.3	-0.5	0.3
	(28.4)	(27.5)	(19.9)	(17.5)	(36.9)	(26.3)	(24.1)	(22.5)
(D-A)	-48.2*	-57.2**	55.5**	66.1***	-35.2	-42.1	30.3	31.0
	(29.1)	(29.1)	(22.5)	(21.9)	(34.6)	(35.2)	(26.3)	(25.9)
year/day dummies	✓	✓	✓	✓	✓	✓	✓	✓
couple controls		✓		✓		✓		✓

Note–The two dependent variables are time allocated to market-work activities and time allocated to household-work activities (measured in minutes per day). The main independent variable is an indicator variable for being the highest earner in the couple (*HE*). All specifications include day-of-the-week and survey-year fixed effects. The specifications in the even columns 2, 4, 6, and 8 additionally control for the average age of the couple, the average level of education of the couple (measured in average years of education), household size, two children indicators for whether the youngest child living in the household is aged between 0 and 6 and between 7 and 17, and two location indicators for living in a metropolitan area and in a tolerant state (defined as those states which legalized same-sex marriage before 2014). The *HE* estimates indicate whether individuals in couples specialize and take advantage of each other's comparative advantage in earnings. The estimates in columns 1 and 3, columns 2 and 4, columns 5 and 7, and columns 6 and 8 represent seemingly unrelated regression estimates, which allow for correlated time-use between market work and household work. The sample used in columns 1 to 4 contains all couples with at least one earner. The sample used in columns 5 to 8 contains all two-earner couples. Observations are weighted using ATUS weights. The estimated difference in comparative-advantage estimates with different-sex couples are taken from fully interacted regression models by same-sex couples (in panel B), gay couples (in panel C), and lesbian couples (in panel D), respectively. Standard errors are between brackets; * indicates significance at 10 percent level, ** indicates significance at 5 percent level, and *** at 1 percent level.

Table 3
Alternative comparative advantage regressions for different household types

	All couples				Two-earner couples			
	Market work		Household work		Market work		Household work	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: baseline estimates (sample sizes: 76740, 39989)								
HE	128.7***	128.9***	-77.5***	-78.2***	39.9***	39.8***	-30.7***	-30.7***
	(1.8)	(1.8)	(1.4)	(1.4)	(2.3)	(2.3)	(1.8)	(1.7)
HE × *SS*	-49.4**	-55.4***	36.0**	43.8***	-14.1	-17.5	0.3	-2.3
	(20.2)	(20.2)	(15.6)	(15.2)	(23.7)	(23.8)	(18.0)	(17.5)
Panel B: excluding couples with small earnings differences (sample sizes: 72071, 35762)								
HE	139.4***	139.6***	-83.3***	-84.0***	45.7***	45.6***	-34.0***	-33.9***
	(1.9)	(1.9)	(1.4)	(1.4)	(2.5)	(2.4)	(1.9)	(1.8)
HE × *SS*	-45.2**	-54.1***	35.0**	48.9***	-22.9	-26.1	4.2	13.1
	(22.0)	(22.1)	(17.1)	(16.7)	(23.7)	(23.8)	(20.4)	(19.8)
Panel C: predicted earnings advantage based on age and education advantage (sample sizes: 76740, 39989)								
$\widehat{HE}$	237.3***	236.6***	-174.7***	-173.3***	88.1***	89.0***	-72.1***	-74.3***
	(10.2)	(10.1)	(7.8)	(7.5)	(11.3)	(11.3)	(8.6)	(8.3)
$\widehat{HE}$ × *SS*	-187.2	-172.5	218.3*	179.9	-153.0	-136.7	53.6	30.3
	(164.5)	(161.4)	(125.7)	(120.0)	(112.7)	(112.4)	(85.5)	(82.6)
F-statistic (*DS*)	759.92***	761.92***	759.92***	761.92***	508.53***	510.74***	508.53***	510.74***
F-statistic (*SS*)	2.86*	3.03**	2.86*	3.03**	5.19***	5.52***	5.19***	5.52***
Panel D: excluding couples surveyed in weekends (sample sizes: 38148, 19779)								
HE	166.8***	167.3***	-97.4***	-98.5***	53.6***	53.6***	-36.6***	-36.8***
	(2.7)	(2.7)	(1.9)	(1.4)	(3.4)	(3.4)	(2.4)	(2.3)
HE × *SS*	-72.0**	-80.8***	46.8**	54.6***	-26.0	-32.6	-3.2	-11.1
	(31.5)	(31.5)	(22.5)	(21.8)	(23.7)	(23.8)	(24.6)	(24.0)

Note–The two dependent variables are time allocated to market-work activities and time allocated to household-work activities (measured in minutes per day). The main independent variable is an indicator variable for being the highest earner in the couple (*HE*). All specifications include day-of-the-week and survey-year fixed effects. The specifications in the even columns 2, 4, 6, and 8 additionally control for the average age of the couple, the average level of education of the couple (measured in average years of education), household size, two children indicators for whether the youngest child living in the household is aged between 0 and 6 and between 7 and 17, and two location indicators for living in a metropolitan area and in a tolerant state (defined as those states which legalized same-sex marriage before 2014). The model we estimate is a fully interacted model by same-sex couple (*SS*). The *HE* estimates indicate whether individuals in different-sex couples specialize and take advantage of each other's comparative advantage in earnings. The *HE* × *SS* estimates indicate whether individuals in different-sex and same-sex couples specialize differently. The estimates in columns 1 and 3, columns 2 and 4, columns 5 and 7, and columns 6 and 8 represent seemingly unrelated regression estimates, which allow for correlated time-use between market-work and household-work activities. The sample used in columns 1 to 4 contains all couples with at least one earner. The sample used in columns 5 to 8 contains all two-earner couples. Observations are weighted using ATUS weights. The F-statistics in panel C test whether partner differences in education and age are significant predictors for being the highest earning partner (high values indicate significant predictors). Standard errors are between brackets; * indicates significance at 10 percent level, ** indicates significance at 5 percent level, and *** at 1 percent level.

Table 4
Testing alternative mechanisms: same-sex couples vs. more comparable different-sex couples

	All couples				Two-earner couples			
	Market work		Household work		Market work		Household work	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: unconventional different-sex couples vs. same-sex couples (sample sizes: 55140, 39989)								
HE	49.7***	49.7***	-19.3***	-19.6***	39.9***	39.8***	-30.7***	-30.7***
	(2.1)	(2.1)	(1.5)	(1.5)	(2.3)	(2.3)	(1.8)	(1.7)
HE × *SS*	29.5	23.9	-22.2	-14.9	-14.1	-17.5	0.3	-2.3
	(19.9)	(20.0)	(14.9)	(14.6)	(23.7)	(23.8)	(18.0)	(17.5)
Panel B: unmarried different-sex couples vs. same-sex couples (sample sizes: 4360, 2540)								
HE	102.4***	100.5***	-56.8***	-54.0***	22.2**	21.5**	-24.3***	-22.6***
	(8.0)	(8.0)	(5.8)	(5.5)	(10.0)	(10.0)	(7.2)	(6.9)
HE × *SS*	-23.1	-26.9	15.4	19.6	3.5	0.7	-6.1	-10.4
	(23.8)	(23.8)	(17.4)	(16.6)	(28.6)	(28.6)	(20.7)	(19.8)
Panel C: childless different-sex couples vs. same-sex couples (sample sizes: 23738, 12638)								
HE	112.5***	112.2***	-45.9***	-45.7***	37.8***	37.4***	-25.7***	-24.8***
	(3.3)	(3.2)	(2.3)	(2.2)	(4.1)	(4.1)	(2.8)	(2.8)
HE × *SS*	-33.3	-38.6	4.5	11.2	-12.0	-15.1	-4.7	-8.1
	(24.3)	(24.3)	(16.8)	(16.7)	(28.6)	(28.7)	(19.6)	(19.6)
Panel D: younger different-sex couples vs. same-sex couples (sample sizes: 7308, 4021)								
HE	119.4***	119.1***	-75.7***	-76.8***	29.0***	27.9***	-16.7***	-17.0***
	(6.2)	(6.1)	(4.7)	(4.4)	(7.7)	(7.7)	(5.8)	(5.5)
HE × *SS*	-40.1*	-45.6**	34.3**	42.4***	-3.2	-5.6	-13.7	-15.9
	(22.9)	(22.8)	(17.4)	(16.4)	(27.7)	(27.6)	(20.9)	(19.6)
Panel E: excluding the most conventional different-sex couples (sample sizes: 60800, 39989)								
HE	82.2***	82.2***	-37.7***	-37.1***	39.1***	39.8***	-30.7***	-30.7***
	(2.0)	(2.0)	(1.5)	(1.5)	(2.3)	(2.3)	(1.8)	(1.7)
HE × *SS*	-2.9	-8.6	-3.8	2.7	-14.1	-17.5	0.3	-2.3
	(20.5)	(20.6)	(15.3)	(15.0)	(23.7)	(23.8)	(18.0)	(17.5)

Note–The two dependent variables are time allocated to market-work activities and time allocated to household-work activities (measured in minutes per day). The main independent variable is an indicator variable for being the highest earner in the couple (*HE*). All specifications include day-of-the-week and survey-year fixed effects. The specifications in the even columns 2, 4, 6, and 8 additionally control for the average age of the couple, the average level of education of the couple (measured in average years of education), household size, two children indicators for whether the youngest child living in the household is aged between 0 and 6 and between 7 and 17, and two location indicators for living in a metropolitan area and in a tolerant state (defined as those states which legalized same-sex marriage before 2014). The model we estimate is a fully interacted model by same-sex couple (*SS*). The *HE* estimates indicate whether individuals in different-sex couples specialize and take advantage of each other's comparative advantage in earnings. The *HE* × *SS* estimates indicate whether individuals in different-sex and same-sex couples specialize differently. The estimates in columns 1 and 3, columns 2 and 4, columns 5 and 7, and columns 6 and 8 represent seemingly unrelated regression estimates, which allow for correlated time-use between market-work and household-work activities. The sample used in columns 1 to 4 contains all couples with at least one earner. The sample used in columns 5 to 8 contains all two-earner couples. Observations are weighted using ATUS weights. Each panel represents a different comparison group of different-sex couples: panel A excludes single-earner couples where the single earner is a man; panel B includes unmarried couples; panel C includes childless couples; panel D includes young couples with an average age less than 30; and panel E excludes all single-earner couples that are married, have children, and where the single earner is the man. Standard errors are between brackets; * indicates significance at 10 percent level, ** indicates significance at 5 percent level, and *** at 1 percent level.

Appendix Table A1
Classification of time use

Category	Activities	Codes
market work	working, work-related activities, other income-generating activities, and travel related to these activities	0501xx, 0502xx, 0503xx, 0599xx, 1805xx
household work	household activities, caring for and helping household and non-household members, consumer purchases, professional services, household services, and telephone calls and travel related to these activities	02xxxx (except 020903, 020904), 03xxxx, 04xxxx, 07xxxx, 08xxxx (except 0805xx), 09xxxx, 160103, 160104, 160105, 160106, 160107, 1802xx, 1803xx, 1804xx, 1807xx, 1808xx (except 180805), 1809xx

Notes: The codes correspond to the ones provided in the ATUS Activity summary file.

Appendix Table A2
Educational attainment: conversion from levels to years

Highest level of school completed or highest degree received	Years of education
Less than 1st grade, or missing	0
1st, 2nd, 3rd, or 4th grade	4
5th or 6th grade	6
7th or 8th grade	8
9th grade	9
10th grade	10
11th grade	11
12th grade - no diploma	12
High school graduate - diploma or equivalent (GED)	12
Some college but no degree	13
Associate degree - occupational/vocational	14
Associate degree - academic program	14
Bachelor's degree (BA, AB, BS, etc.)	16
Master's degree (MA, MS, MEng, MEd, MSW, etc.)	18
Professional school degree (MD, DDS, DVM, etc.)	20
Doctoral degree (PhD, EdD, etc.)	21

Appendix Table A3
Testing alternative mechanisms: same-sex couples vs. less comparable different-sex couples

	All couples				Two-earner couples			
	Market work		Household work		Market work		Household work	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: conventional different-sex couples vs. same-sex couples (sample size: 22103)								
HE	355.2***	354.9***	-243.6***	-242.9***				
	(3.0)	(3.0)	(2.6)	(2.5)				
HE × *SS*	-275.9***	-281.3***	202.2***	208.4***				
	(17.4)	(17.5)	(15.1)	(14.7)				
Panel B: married different-sex couples vs. same-sex couples (sample size: 72883, 37770)								
HE	130.5***	130.9***	-79.1***	-80.0***	41.3***	41.2***	-31.4***	-31.5***
	(1.9)	(1.9)	(1.4)	(1.4)	(2.4)	(2.4)	(1.8)	(1.8)
HE × *SS*	-51.3**	-57.3***	37.6**	45.5***	-15.5	-18.9	1.0	-1.5
	(20.0)	(20.1)	(15.5)	(15.2)	(23.5)	(23.6)	(17.8)	(17.4)
Panel C: different-sex couples with children vs. same-sex couples (sample sizes: 53505, 27672)								
HE	141.7***	142.1***	-103.7***	-103.7***	41.9***	41.7***	-36.0***	-35.1***
	(2.2)	(2.2)	(1.7)	(2.2)	(2.8)	(2.8)	(2.2)	(2.2)
HE × *SS*	-62.4***	-68.5***	62.2***	69.2***	-16.1	-19.4	5.6	2.2
	(18.2)	(24.3)	(14.5)	(14.4)	(21.3)	(21.3)	(16.7)	(16.5)
Panel D: older different-sex couples vs. same-sex couples (sample sizes: 69935, 36289)								
HE	129.7***	130.0***	-77.7***	-78.4***	41.2***	41.1***	-32.4***	-32.4***
	(1.9)	(1.8)	(1.5)	(1.4)	(2.4)	(2.4)	(1.8)	(1.8)
HE × *SS*	-50.5**	-56.5***	36.2**	43.9***	-15.5	-18.8	2.0	-0.6
	(20.0)	(20.0)	(15.5)	(15.1)	(23.4)	(23.5)	(17.7)	(17.3)
Panel E: the most conventional different-sex couples vs. same-sex couples (sample size: 13078)								
HE	372.0***	372.3***	-287.2***	-286.8***				
	(3.9)	(3.9)	(3.3)	(3.3)				
HE × *SS*	-292.7***	-298.5***	245.7***	252.3***				
	(16.3)	(16.3)	(14.0)	(13.9)				

Note–The two dependent variables are time allocated to market-work activities and time allocated to household-work activities (measured in minutes per day). The main independent variable is an indicator variable for being the highest earner in the couple (*HE*). All specifications include day-of-the-week and survey-year fixed effects. The specifications in the even columns 2, 4, 6, and 8 additionally control for the average age of the couple, the average level of education of the couple (measured in average years of education), household size, two children indicators for whether the youngest child living in the household is aged between 0 and 6 and between 7 and 17, and two location indicators for living in a metropolitan area and in a tolerant state (defined as those states which legalized same-sex marriage before 2014). The model we estimate is a fully interacted model by same-sex couple (*SS*). The *HE* estimates indicate whether individuals in different-sex couples specialize and take advantage of each other's comparative advantage in earnings. The $HE \times SS$ estimates indicate whether individuals in different-sex and same-sex couples specialize differently. The estimates in columns 1 and 3, columns 2 and 4, columns 5 and 7, and columns 6 and 8 represent seemingly unrelated regression estimates, which allow for correlated time-use between market-work and household-work activities. The sample used in columns 1 to 4 contains all couples with at least one earner. The sample used in columns 5 to 8 contains all two-earner couples. Observations are weighted using ATUS weights. Each panel represents a different comparison group of different-sex couples: panel A includes single-earner couples where the single earner is a man; panel B includes married couples; panel C includes couples with children; panel D excludes younger couples with an average age less than 30; and panel E includes only single-earner couples that are married, have children, and where the single earner is a man. Standard errors are between brackets; * indicates significance at 10 percent level, ** indicates significance at 5 percent level, and *** at 1 percent level.

Appendix Table A4
Testing alternative mechanisms: gay and lesbian couples vs. more comparable different-sex couples

	All couples				Two-earner couples			
	Market work		Household work		Market work		Household work	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: unconventional different-sex couples vs. same-sex couples (sample sizes: 55140, 39989)								
HE	49.7***	49.7***	-19.3***	-19.6***	39.9***	39.8***	-30.7***	-30.7***
	(2.1)	(2.1)	(1.6)	(1.5)	(2.3)	(2.3)	(1.8)	(1.7)
HE × *GC*	24.7	29.0	-42.8*	-36.3*	49.6	50.4	-37.0	-37.4
	(29.1)	(29.8)	(21.9)	(21.8)	(35.5)	(36.2)	(26.9)	(26.6)
HE × *LC*	30.7	22.0	-2.7	7.4	-35.2	-42.1	30.3	31.0
	(28.6)	(28.7)	(21.5)	(21.0)	(34.6)	(35.2)	(26.3)	(25.9)
Panel B: unmarried different-sex couples vs. same-sex couples (sample sizes: 4360, 2540)								
HE	102.4***	100.5***	-56.8***	-54.0***	22.2**	21.5**	-24.3***	-22.6**
	(8.0)	(7.9)	(5.8)	(5.5)	(9.9)	(9.9)	(7.2)	(6.9)
HE × *GC*	-27.9	-21.7	-5.2	-1.8	67.2	68.7	-43.4	-45.5
	(33.8)	(34.3)	(24.7)	(23.9)	(41.2)	(41.8)	(29.9)	(29.1)
HE × *LC*	-21.9	-28.7	34.9	41.8*	-17.5	-23.9	23.9	22.9
	(33.3)	(33.1)	(24.3)	(23.1)	(40.2)	(40.7)	(29.2)	(28.3)
Panel C: childless different-sex couples vs. same-sex couples (sample sizes: 23738, 12638)								
HE	112.5***	112.2***	-45.9***	-45.7***	37.8***	37.4***	-25.7***	-24.8***
	(3.3)	(3.2)	(2.3)	(2.2)	(4.1)	(4.1)	(2.8)	(2.8)
HE × *GC*	-38.1	-33.4	-16.1	-10.1	51.7	52.8	-42.0	-43.2
	(35.5)	(36.2)	(24.5)	(25.0)	(42.7)	(43.6)	(29.3)	(29.7)
HE × *LC*	-32.1	-40.5	24.0	33.5	-33.0	-39.7	25.3	25.1
	(34.9)	(34.9)	(24.1)	(24.0)	(41.6)	(42.4)	(28.6)	(28.9)
Panel D: younger different-sex couples vs. same-sex couples (sample sizes: 7308, 4021)								
HE	119.4***	119.1***	-75.7***	-76.8***	29.0***	27.9***	-16.7***	-17.0***
	(6.1)	(6.1)	(4.7)	(4.4)	(7.7)	(7.7)	(5.8)	(5.4)
HE × *GC*	-44.9	-40.4	13.7	21.0	60.5	62.3	-51.1*	-51.0*
	(32.9)	(33.3)	(25.1)	(24.0)	(40.5)	(41.0)	(30.6)	(29.1)
HE × *LC*	-39.0	-47.4	53.8**	64.6***	-24.2	-30.2	16.2	17.3
	(32.4)	(32.1)	(24.7)	(23.1)	(39.5)	(39.9)	(29.9)	(28.3)
Panel E: excluding the most conventional different-sex couples (sample sizes: 60800, 39989)								
HE	82.2***	82.2***	-37.7***	-37.1***	39.9***	39.8***	-30.7***	-30.7***
	(2.0)	(2.0)	(1.5)	(1.5)	(2.3)	(2.3)	(1.8)	(1.7)
HE × *GC*	-7.7	-3.5	-24.4	-18.7	49.6	50.4	-37.0	-37.4
	(30.0)	(30.7)	(22.4)	(22.4)	(35.5)	(36.2)	(26.9)	(26.6)
HE × *LC*	-1.7	-10.5	15.7	24.9	-35.2	-42.1	30.3	31.0
	(29.5)	(29.6)	(22.0)	(21.6)	(34.6)	(35.2)	(26.3)	(25.9)

Note–The two dependent variables are time allocated to market-work activities and time allocated to household-work activities (measured in minutes per day). The main independent variable is an indicator variable for being the highest earner in the couple (*HE*). All specifications include day-of-the-week and survey-year fixed effects. The specifications in the even columns 2, 4, 6, and 8 additionally control for the average age of the couple, the average level of education of the couple (measured in average years of education), household size, two children indicators for whether the youngest child living in the household is aged between 0 and 6 and between 7 and 17, and two location indicators for living in a metropolitan area and in a tolerant state (defined as those states which legalized same-sex marriage before 2014). The model we estimate is a fully interacted model by gay couple (*GC*) and lesbian couple (*LC*). The *HE* estimates indicate whether individuals in different-sex couples specialize and take advantage of each other's comparative advantage in earnings. The *HE*×*GC* and *HE*×*LC* estimates indicate whether individuals in different-sex couples specialize differently than individuals in gay and lesbian couples, respectively. Observations are weighted using ATUS weights. Standard errors are between brackets; * indicates significance at 10 percent level, ** indicates significance at 5 percent level, and *** at 1 percent level.