

Unveiling the Persistent Gender Time Gap: How Formal Childcare Impacts Paid and Unpaid Work Dynamics in Austrian Families

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Abstract

How does the use of formal childcare arrangements impact families' paid and unpaid working hours, and more importantly, how does it affect the division of these tasks between parents? Using the Austrian Time Use Survey 2021/22, we explore the relationship between children's time spent in formal childcare and (1) couples' combined working hours, (2) individual work time of mothers and fathers, and (3) the gender time gaps in working hours within couples. With multivariate analyses, we show that increasing formal childcare hours significantly reduces couples' total working hours, with a notable increase in paid hours and an even larger decrease in unpaid hours. These changes are primarily driven by mothers significantly reallocating their time resources, while fathers hardly adapt their working hours. Thus, increasing formal childcare hours eases mothers' double burden of combining paid and unpaid work and significantly narrows the gender time gaps between parents. However, our results highlight that further improvements towards gender equality can only be made if fathers adjust their time allocation as well and engage more in care and housework chores.

Keywords: *Time Use, Paid and Unpaid Work, Formal Childcare, Gender Inequality*

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Introduction

Family policy is intrinsically linked to gender equality, particularly in conservative countries where traditional gender roles are predominant. The design of family policy impacts not only the financial security of families, but also parents' labor force participation, the extent of their paid working hours as well as the division of unpaid work within households. Apart from monetary family benefits like tax credits, in-kind benefits such as the provision of high-quality, affordable childcare significantly affect parents' ability to work, especially for mothers. The existing literature confirms the positive effect of formal childcare on mothers' labor force participation (Mahringer and Zulehner 2015; Müller and Wrohlich 2020; Hardoy and Schöne 2015; Bettendorf, Jongen, and Muller 2015; Bauernschuster and Schlotter 2015; Del Boca 2015); however, less is known about the impact on the distribution of unpaid (care)work between parents (Craig and Mullan 2011). Furthermore, the presence of formal childcare services and the up-take thereof is strongly linked to societal norms and beliefs about non-parental childcare, i.e. whether it is socially accepted or even approved of for children to be cared for outside the family home.

Despite being a well-developed social welfare state with high living standards and social benefits, Austria is marked by very traditional family values and gender roles with a strong emphasis on the male-breadwinner model (Österle and Heitzmann 2019; Salin, Ylikännö, and Hakovirta 2018). As a result, gender equality in the workplace and in the distribution of unpaid work within households as well as the provision of high-quality, accessible and affordable formal childcare remain areas needing improvement (Ziemann 2015; European Commission 2023). With this resilience and persistence of traditional gender roles and societal norms paired with a lack of progressive family policies, it does not come as a surprise that half of women work part-time, while facing the second largest gender pay gap of 18% in 2023 within the European Union (Eurostat 2022). At the same time, woman also shoulder the lion's share of unpaid work, like caring for children and relatives or doing housework: The 'gender care gap' — the difference in time spent on unpaid (care)work between men and women — has barely diminished since the 1980s in Austria, with women still taking over more than two thirds of the unpaid workload (Achleitner 2023b). For mothers, the lack of accessible and affordable childcare is a reinforcing factor for the unequal division of paid and unpaid working hours relative to fathers. For years, the qualitative and quantitative expansion, i.e. the provision of high-quality, affordable and accessible formal childcare has been neglected and treated as a secondary concern in Austrian family policy (Ziemann 2015). These circumstances contribute to unequal labor market participation rates among parents, rising maternal part-time employment rates, as well as an unequal distribution of unpaid working hours within families. Above all, they reinforce traditional gender roles, effectively reversing decades of progress towards gender equality for women, particularly mothers.

Using data from the Austrian Time Use Survey 2021/22 (Statistics Austria 2023d), our study investigates the impact of formal childcare on the work time patterns of mothers and fathers in couple households with children. We distinguish between paid and unpaid work, splitting unpaid work into unpaid (child)carework and unpaid housework. Employing Ordinary Least Squares (OLS) regression analysis, we analyze the relationship between children's time spent in formal childcare and (1) couples' combined working hours (household-level), (2) individual work time of mothers and fathers (individual-level), and (3) the gender time gaps in working hours within couples (gender time gaps), i.e., the differences in hours worked between mothers and fathers living in the same household.

In line with existing literature on the topic (see e.g. Craig and Powell 2013), our results show a significant impact of formal childcare hours on parents' paid and unpaid working hours. However, the uptake of formal childcare affects mothers' and fathers' time use very differently. While fathers' paid working hours remain largely unchanged and time spent on childcare decreases only marginally, formal childcare provision allows mothers to adapt their working hours: They reduce total working hours significantly, shifting from unpaid care and housework to paid work. Formal childcare thus eases mothers' double burden of combining paid and unpaid work and significantly narrows the gender time gaps between parents.

However, our results highlight that further improvements towards gender equality can only be

made if fathers adjust their time allocation as well and engage more in care and housework chores. As such, the results on gender time gaps do not necessarily reflect a shift towards a more gender-equal distribution of paid and unpaid working hours between parents. Although fathers already take on more unpaid work than in the past, the gender time gaps between parents remain substantial.

Additionally, we find that the average time children in Austria spend in formal childcare are rather low, with only 19 hours per week on average. This is partly due to the lack of full-day, affordable childcare, but also to the widespread belief that parental childcare is more beneficial for the child's development (Neuwirth, Buber-Ennser, and Fux 2023). As a consequence, the possibility for parents to adapt their working patterns is only limited.

Overall, our study highlights the crucial role of formal childcare in enabling mothers to participate more in paid work and reduce their unpaid work burden, particularly in carework. However, the persistent gender roles where mothers bear the brunt of adjustments in their work patterns suggest that while formal childcare facilitates changes, it is not sufficient on its own to lead to a more balanced distribution of paid and unpaid work between parents. This indicates that in addition to implementing policies that promote accessible and affordable childcare, policies must also focus on encouraging a more equitable sharing of responsibilities between mothers and fathers by inducing societal shifts in norms and gender roles. This includes promoting father-friendly work and parental leave policies and challenging traditional gender norms that dictate household and childcare responsibilities.

Background

There are still significant gender differences in the division of paid and unpaid work among parents (European Commission 2024; European Institute for Gender Equality 2021; Salin, Ylikännö, and Hakovirta 2018; Craig and Mullan 2010), even though female and particularly mothers' labor force participation has been on a continuous rise in most countries. A substantial number of women and mothers only join the labor force part-time, mitigating the potential gains in economic independence (Berghammer 2014). Women often reduce their paid working hours to care for young children or care-dependent relatives and thus still bear the lion's share of unpaid (care)work (European Commission 2024; European Institute for Gender Equality 2021; Achleitner 2023b). The resulting dual burden of paid and unpaid work remains a major challenge for women (European Commission 2023). This unequal division of paid and unpaid work between parents has remained persistent during the last few decades and has been further exacerbated by the COVID-19 pandemic. When the nationwide lock-downs of schools and childcare services forced parents to look after their children themselves, mothers reduced their paid working hours much more drastically to care for children compared to fathers (Nivakoski and Mascherini 2021; OECD 2021; Derndorfer et al. 2021).

For parents, this unequal division of paid and unpaid work is even more pronounced with several factors influencing the division of paid and unpaid work between mothers and fathers as well as their work patterns: The probability of mothers with very young children to be employed is substantially lower, while their unpaid work burden is higher. Fathers' working hours (both paid and unpaid), on the other hand, remain largely unaffected by the presence of children, in some cases men even slightly increase their paid working hours when becoming a father, reflecting traditional breadwinner models where men compensate for women's reduced labor market participation (O'Brien, Brandth, and Kvande 2007). The evidence shows that the narrowing in gender time gaps between mothers' and fathers' involvement in paid and unpaid work is primarily driven by work time adjustments made by mothers, such as increased maternal labor force participation and their contribution to households' earnings and not by an increased involvement of fathers in unpaid work (O'Brien and Moss 2010). The reluctance of fathers to get involved can lead to high total maternal workloads, increased stress levels and time pressure, especially for full-time employed mothers, as well as less leisure time for mothers compared to fathers (Adema, Ali, and Thévenon 2014; Craig and Sawrikar 2009; Craig and Powell 2013; Achleitner 2024a). Educational attainment of parents also plays a role in the division of labor. While highly educated parents usually exhibit higher labor force participation rates and

work more paid working hours, they also invest a disproportional amount of time in caring for their children. This is called the 'parental investment theory', which suggests that higher education levels lead to greater involvement in child-related activities (Craig 2006; Sayer, Gauthier, and Furstenberg Jr 2004). The maternal contribution to household income can also play a role. In the U.S., fathers are more likely to engage in childcare activities when their wives contribute a greater share to the couple's earnings (Raley, Bianchi, and Wang 2012). In contrast, a Norwegian study shows that fathers adjust their unpaid working hours only marginally in response to mothers' employment, which suggests that dual-earner parents rely mostly on external childcare to substitute for the mother's absence (Kitterød and Pettersen 2006).

There are many studies that point to work-family policies majorly in influencing parental work time patterns. These policies shape parents' decisions of how much time to devote to paid and unpaid work and they reinforce normative beliefs about how work and family responsibilities should be divided, signaling socially desirable behaviors for mothers and fathers. Important examples of such policies are family benefits like tax transfers or in-kind benefits, such as the provision of high-quality, affordable childcare. Both cash and in-kind transfers significantly influence parents' decisions regarding paid and unpaid work (Del Boca 2015). At the same time, they constitute a substantial portion of family incomes and play a re-distributive role in reducing child poverty and supporting parental employment (Forster and Verbist 2012; Thevenon 2013). Research indicates that the costs of childcare services as well as the availability or accessibility thereof can take a significant impact on mothers' employment rates in particular. Mahringer and Zulehner 2015 show how affordable childcare has increased mothers' labor market participation in Austria, and Hardoy and Schone 2015 provide similar results for Norway, where reduced childcare prices led to a 5% increase in maternal labor supply. In the Netherlands, a reform on childcare subsidies has increased employment rates for mothers of very young children by 2.3 percentage points (Bettendorf, Jongen, and Muller 2015). Studies in Germany found that subsidized childcare for toddlers increases maternal labor supply by about 0.2 percentage points for each percentage point increase in childcare coverage and that publicly operated childcare services have a particular power in increasing maternal employment, most likely because public services are more affordable or completely free of charge (Müller and Wrohlich 2020; Bauernschuster and Schlotter 2015).

Parental leave policies significantly influence the division of paid and unpaid labor as well, particularly encouraging fathers' involvement in childcare (OECD 2011; Rostgaard 2002). If fathers make use of their paternal leave rights, it positively influences their involvement in unpaid care- and housework (Brandth and Gislason 2012; Haas and Hwang 2008; O'Brien and Moss 2010; Nepomnyaschy and Waldfogel 2007; Tanaka and Waldfogel 2007). In Germany, fathers who take parental leave are more involved in childcare and housework even years after their leave ends (Tamm 2019). The impact is more pronounced for longer leave periods or when fathers take leave independently of their partners (Banning 2015). This increased involvement can also improve fathers' labor market outcomes, relationship stability, and overall life satisfaction (Kosłowski 2011). The OECD highlights that statutory leave entitlements for fathers, especially when well-paid and non-transferable, significantly boost fathers' participation in early childcare, promoting gender equality at home and at work (O'Brien 2009; Tanaka and Waldfogel 2007). At last, increased paternal involvement is associated with better outcomes for children, underscoring the importance of policies that encourage shared childcare responsibilities from the early days of a child's life (Nepomnyaschy and Waldfogel 2007; Carmen Huerta et al. 2013; Haas and Hwang 2008; Jennifer Baxter and Smart 2011; OECD 2012). Sadly, the uptake of paternal leave rights and usage remains low as mothers continue to take the majority share of parental leave because the family's income loss is smallest (due to the gender pay gap) if mothers stay home with the kids (OECD 2012; Moss 2011; Riesenfelder, Danzer, and Hauer 2024). Fathers are most likely to take paternity leave when the leave is well-compensated and when a portion of the entitlement is non-transferable and forfeited if not utilized (O'Brien 2009; O'Brien and Moss 2010). Countries that have implemented effective parental leave policies encouraging fathers to take long paternal leaves include Sweden, Iceland, and Norway, where approximately 90% of fathers take some portion of the

parental leave period (Moss 2011) and the duration of the leave is much longer. Gender inequalities in paid and unpaid work are also much less pronounced in these countries, pointing to the positive effect of early involvement of fathers on the division of unpaid work tasks in a family.

Institutional Setting in Austria

In the comparative welfare literature, Austria can be classified as a conservative welfare state (Esping-Andersen 1990; Osterle and Heitzmann 2019). As such, family policy has traditionally been tailored to the 'male breadwinner model', where the ability of men and fathers to provide for the family is strongly valued and facilitated through full-time employment and relatively high child benefit payments. Women and mothers, on the other hand, traditionally raise children at the expense of their labor market participation or their working time arrangements. In the design of Austrian family policies, this is also represented by a strong concentration on transfer payments instead of in-kind benefits, such as the provision of formal childcare services. Even though the solely 'male breadwinner model' has become outdated due to elevated educational levels and employment rates of women, as well as increasing divorce rates and the pluralisation of family forms (Esping-Andersen 2009), the conservative legacy of family policy continues to be one of the greatest weaknesses of the Austrian welfare state (Wiand and Greve 2020; Obinger et al. 2015), challenging progress towards gender equality. As a result, Austria is still falling short when it comes to a high-quality, affordable and accessible childcare infrastructure and measures promoting gender equality.

In accordance with similar developments in many other countries, female labor force participation in Austria has increased notably, rising from 59% in 1994 to 70% in 2022. In contrast, male labor force participation has remained stable around 78% for the past three decades. Mothers with children under 15 years increased their workforce participation even more strongly - from 66% in 1994 to almost 80% in 2022, trumping female labor force participation rates overall. Employment rates for fathers, on the other hand, have remained stunningly stable around 93% (Statistics Austria 2024). Although the increasing participation of women in the labor force indicates that the established male breadwinner model is breaking up, the cause lies in a significant increase in the proportion of women working part-time. Austria is marked by the second highest female part-time rate of 51% across the European Union, while the male part-time quota is only 13% (Statistics Austria 2023c). Especially for mothers with children of school age, part-time employment is the dominant form of employment to combine care responsibilities and employment. In 2022, their part-time rate was as high as 74%. In contrast, fathers' part-time rate was significantly lower at 8%. (Statistics Austria 2023b). When asked for the reasons for their part-time employment, roughly 40% (419,000) of women but only 7% (19,600) of men state they do so because of lacking childcare infrastructure (Statistics Austria 2023a). These figures point to the great lack of adequate childcare possibilities in Austria and to the persistence of men being the main breadwinner, while women support the family with a second, yet lower labor income. Lower, because women in Austria face the second-highest gender pay gap within the European Union of 18% (Eurostat 2022).

There has been little improvement in the distribution of unpaid work between men and women in Austria since the 1980s. Women and mothers still take on the lion's share of childcare, housework, and related tasks. The gender care gap { the timely difference in unpaid care work between men and women } remains significant even in 2023. Since the first Time Use Survey was conducted in 1981, the gap has only narrowed by 14 percentage points (Achleitner 2023b). Currently, women bear 63 percent of the burden of unpaid housework and caregiving. In 2023, women still perform 1.5 hours more unpaid work per day than men on average. While men spend just two hours per day on childcare, housework, or caregiving, women invest nearly four hours daily. Having children further increases a family's unpaid workload, especially that of mothers. In our sample, the gender time gap in unpaid work between mothers and fathers amounts to roughly 26 hours per week. It follows that mothers have less leisure time: Looking at parents in couple households with at least one child under the age of 25, mothers have 36 minutes less free time per day compared to fathers. In one entire year,

this sums up to 218 hours, i.e. approximately 6 working weeks (Achleitner 2024a). The economic impact of this unequal division is stark: If women in Austria had been compensated for their unpaid work hours, they would have collectively earned approximately 57 billion euros in 2022. This would have increased the country's economic output (GDP) by 13 percentage points. In comparison, the unpaid work hours performed by men during the same period would have been valued at around 38 billion euros if compensated. Accounting for unpaid work overall would contribute around a quarter of economic output to Austrian GDP (Jokubauskaitė and Schneebaum 2022; Achleitner 2023b).

The compatibility of work and family life remains a significant challenge in Austria. Gender care gaps manifest as soon as a child is born, when families decide on their parental leave arrangements. Although the right to paternity leave has existed in Austria for over 30 years, only a fraction of fathers actually makes use of it and mothers take the vast majority of parental leave days available to families. Since 2010, Austria has even recorded a decline in paternal leave uptake. Looking at northern Europe shows how much Austria could learn from best practice countries such as Sweden, Iceland or Denmark in terms of fathers' participation. In Scandinavia and Luxembourg, the share of male parental leave benefit recipients is over 45%. With just under 16% of fathers taking parental leave, Austria is the country in which the fewest fathers spend even a single day on parental leave across the EU (Achleitner 2024b). The majority of fathers take the legal minimum of two months, only 1% of fathers takes parental leave for longer than six months (Riesenfelder, Danzer, and Hauer 2024). The low uptake of paternal leave paired with the comparably long durations of maternal leave have implications both for the paid as well as the unpaid working spheres. On the one hand, only 60% of mothers have returned to the labor market before their child's second birthday (Riesenfelder, Danzer, and Hauer 2024). The vast majority of the mothers who do return, only return part-time. As such, children do make a difference for mothers when setting their extent of weekly paid working hours: On average, women without children work four additional hours per week compared to mothers. For men, however, the effect of fatherhood on their working hours is not as pronounced (Sturn 2024). Since 2014, men's working hours - whether with or without children - have remained around a 40-hour week. The low share of fathers taking paternal leave also has implications for the division of unpaid work within families or between parents. Tamm 2019 and Banning 2015 show that if fathers make use of their parental leave rights and if the duration of the paternity leave is sufficiently long (the longer the better), they are more invested in unpaid house- and carework in the future.

Aside from the pronounced gender inequalities in parental leave uptake, the lack of high-quality, affordable and accessible childcare services in Austria is an additional factor determining the compatibility of work and family life. First, Austria has failed to comply with the EU-Barcelona targets for childcare for more than a decade now. With a childcare coverage rate of 29% of under 3-year-olds, Austria is still not meeting the target for 2020 that was set at 33% and has been raised to 45% until 2030. Second, the availability of childcare facilities varies greatly by region, promoting regional disparities concerning parents' labor market participation and the distribution of unpaid care work. Outside the city of Vienna, only every fifth kindergarten spot is compatible with parent's full-time employment (Achleitner 2022). In western Austria, the opening hours of childcare services are particularly short, and it is usually mothers who have to compensate for the lack of public childcare facilities. Third, the budgetary means to stimulate the expansion of childcare in Austria are far too low and lack ambition. For years, the qualitative and quantitative expansion, i.e. the provision of high-quality, affordable and accessible formal childcare has been neglected and treated as a secondary concern in Austrian family policy. Austria's investments in elementary care and childcare services do not even amount to 1% of GDP, while Scandinavian countries invest up to 2% of their GDP into the care of their little ones (Achleitner 2023a). Fourth, not every family can afford childcare in Austria. Free-of-charge, full-day care is only available in three out of nine federal states - in the other regions, parents have to pay for full-day childcare. Since the organization of formal elementary childcare, such as kindergarten or crèche, is a federal responsibility, the costs vary wildly between the nine federal states. A transparent statistic about the costs of childcare in Austria does not exist. In some regions, full-day childcare is so expensive, that a part-time job does not cover the costs, which has a negative

impact on mothers' labor force participation. Lastly, many parents are simply not convinced by the quality of childcare services. Oftentimes, poor working conditions and low pay for early childhood educators fuel diminishing quality of childcare. It is thus equally important to invest in the qualitative expansion of childcare services in Austria, for example, by improving on the working conditions, pay schemes and education for early childhood teachers and sta (UNICEF 2023).

In summary, while there have been improvements in female labor force participation, significant challenges remain in achieving gender equality in Austria. The high female part-time rate and unequal division of unpaid working hours within families, as well as the structural lack of adequate childcare services are indicative of the persistent conservative legacy in Austrian family policy. Addressing these issues requires comprehensive reforms in childcare provision, parental leave policies, and measures to promote a more equitable division of labor both in the workplace and at home.

Data

We employ microdata from the most recent Austrian Time Use Survey 2021/22 provided by the national statistics office (Statistics Austria 2023d). It is only the fourth time use survey in Austria, with the previous waves conducted in 1981, 1992 and 2008. Aside from gaining insight into people's daily routines and how they differ in terms of socio-demographic or economic characteristics, the time use survey is the most important survey to measure unpaid work and thus well-suited for analyzing the distribution thereof.

The 2021/22 Austrian Time Use Survey was carried out between October 2021 and December 2022, surveying 7,863 individuals in 4,342 Austrian households. Within these households, questionnaires and time diaries of 4,244 women and girls as well as those of 3,619 men and boys were utilized, so proportionally, slightly more women and girls took part in the survey.

All individuals aged 10 and above living in the surveyed households were asked to document their time use on all activities during two separate days by filling out time diaries. In the diaries, all primary (main) and secondary (simultaneous) activities were documented in 10-minute intervals, i.e. every activity that lasted longer than 10 minutes was noted in the respective timeslot of the diary. Additionally, information about the socio-demographic as well as socio-economic characteristics of the respondent and the respective household was collected. The diary could either be filled out on paper or entered online using a web application and the HETUS¹ guidelines were adhered to throughout the entire survey process.

Sample

We draw a sample of different-sex couple households living with children. As detailed information on formal or informal childcare uptake is only available for children aged up to 10 years, the sample includes households with at least one child aged between 0-10 years only.

¹Harmonised European Time Use Survey (HETUS): HETUS are national surveys conducted in various European countries to quantify how much time people spend on various activities. HETUS is held about once every 10 years. Participating countries follow the methodological guidelines, using standardised survey designs and statistical classifications, which enables comparability across countries (Eurostat 2024).

Table 1: Sample description

N = 671	Share of Households (%)	
Childcare arrangement		
no childcare usage		27.0
only formal childcare		40.2
only informal childcare		11.0
formal + informal childcare		21.8
formal: public childcare		81.2
formal: private childcare		18.8
Other household characteristics		
infant (0-1)		30.1
1 child aged 0-14		34.1
2 children aged 0-14		44.7
3+ children aged 0-14		21.3
Vienna		17.3
1. Income Quintile		24.7
2. Income Quintile		20.9
3. Income Quintile		23.4
4. Income Quintile		17.0
5. Income Quintile		14.0
	fathers (%)	mothers (%)
parent above 40	50.5	30.1
main breadwinner (60 % of household income)	58.9	5.3
tertiary degree	26.4	33.2
citizenship: Austria	77.2	79.9
citizenship: EU	11.1	9.5
citizenship: third states	11.8	10.6

Table 1 describes the composition (on a household and individual level) of our sample. We observe n=671 couple households with children. In our sample, 27.0% of households do not use any form of childcare. The biggest share of households uses only formal childcare arrangements (40.2%) and another 11.0 % use informal childcare, such as neighbour networks, babysitters or relatives only. Roughly one fifth of the households in our sample combines formal and informal childcare. Among those who use formal childcare, we are able to determine whether the reference child is cared for in a public (81.2%) or a private (18.8%) institution.

Almost one third (30.1%) of the households in our sample has an infant aged between 0 and 1. 34.1% of households have one child aged between 0 and 14, the largest share (44.7%) has two children aged between 0 and 14. The remaining 21.3% have three or more children in that age group. 17.3% of our sampled households live in the capital city of Austria, Vienna. Divided into income quintiles, we also observe a better representation of the lower income quintile households, as only 17.0% and 14.0% of households fall into the fourth and fifth income quintile.

The sample description further documents several characteristics for fathers and mothers. Being a parent above the age of 40 years is much more likely to be true for fathers, where roughly half (50.5%) of our sampled fathers are older than 40 years. For mothers, this is only true for 30.1%. If a person contributes more than 60% of household income, he or she is the main breadwinner in that family. Our sample represents Austria's strong orientation towards the 'male-breadwinner model', as 58.9% of fathers contribute more than 60% to the household income, but only 5.3 % of mothers are female-breadwinners. The fact that women are - on average - more highly educated compared to men is also resembled in the higher tertiary share for mothers (33.2%) compared to fathers (26.4%). Lastly, the Austrian citizenship share is slightly higher among mothers (79.9% compared to 77.2% for fathers), but lower for EU or third state citizenship.

The dependent variables in our analysis are weekly hours spent on paid or unpaid work - either by the couple (household level, couple's combined working time), by mothers and fathers individually (individual level), or in absolute differences in hours (gender time gaps, female - male). 'Total work' includes both paid and unpaid working time. The variable 'paid work' was constructed by adding up usual weekly working hours in the main and any secondary employment. For the variable 'unpaid work', we create two subcategories of unpaid work activities - carework and housework - which add up to 'unpaid work'.

- ^ carework: includes carework provided for members of the own household, such as own children or other adults living either in the same or a different household (e.g. caring for relatives living in another household)
- ^ housework: includes all housework activities to maintain the household such as cooking, cleaning, shopping, gardening, etc.

Note, that our definition of unpaid (care)work differs from the one by Statistics Austria. In contrast to commonly used definitions of unpaid (care)work, we do not include voluntary activities (political, social, religious, etc.) into our variable of total unpaid work as voluntary work differs from unpaid care- or housework. Moreover, we classify any informal help, care or support provided to another household as carework, even though it is subsumed under 'voluntary work' by Statistics Austria.

Table 2: Summary statistics of weekly working and childcare hours, by sex

	Mean	Median	Min.	Max.
Weekly working hours				
Total work (paid + unpaid)	126.1	124.6	51	244
fathers	60.2	59.1	0	148
mothers	65.9	64.1	6	152
Paid work	54.9	58.0	0	160
fathers	37.3	40.0	0	108
mothers	17.6	19.0	0	70
Unpaid work	71.2	70.1	6	167
fathers	22.9	19.9	0	95
mothers	48.3	47.4	1	107
Unpaid work: carework	33.8	30.3	0	113
fathers	10.5	7.2	0	67
mothers	23.3	21.2	0	89
Unpaid work: housework	37.4	34.5	1	122
fathers	12.3	9.1	0	95
mothers	25.0	24.3	0	72
Weekly hours spent in childcare				
childcare (formal + informal)	18.9	22	0	72
informal	3.4	0	0	60
formal	15.5	20	0	54
formal: public	11.5	4	0	50
formal: private	2.7	0	0	35

Note: weighted mean and median

Table 2 reports the summary statistics of weekly working hours by couples, mothers and fathers. On average, couples spend 126.1 hours per week working, 54.9 hours on paid work and 71.2 hours on

²Table 7 in the Annex presents a detailed overview of unpaid work activities that fall into the categories.

unpaid work activities, such as care- or housework. Stark gender differences are visible in paid working hours. On average, fathers spend 37.3 hours working, while mothers only spend 17.6 hours per week in paid work. Meanwhile, mothers take over more than twice as many hours of unpaid work (48.3) compared to fathers (22.9) per week, which leads mothers to work in total almost 6 hours longer every week when combining paid and unpaid work.

Weekly hours spent in formal childcare is our main independent variable, since the number of households using informal childcare arrangements is insufficient. If there are several children in the household, parents must base their decision on their time use patterns in paid and unpaid work on the child who has the fewest hours of external childcare. This is why we define the child who spends the least hours in formal childcare as the reference child.

Reference children in our sample spend 18.9 hours per week in formal and informal childcare, on average. Most time is spent in formal childcare facilities (15.5 hours weekly), informal childcare only makes up for 3.4 hours per week. Likewise, those children who are formally cared for, spend most time in public childcare institutions.

Figure 1: Average hours in paid and unpaid work by sex and care type

Figure 1 offers a first insight into the relationship between parental paid and unpaid working hours by the use of different childcare types. Mothers engage the fewest hours in paid work when they use no childcare at all (11 hours per week), compared to 19 hours on average when they use formal childcare. In contrast, fathers whose children are formally cared for report slightly lower weekly working hours (34 hours compared to 38 hours per week). Regarding unpaid work, the adjustments in working hours of mothers and fathers follow a similar pattern, yet the extent differs significantly. The time mothers spend on unpaid work falls by almost a third, from 61 hours to 42 hours, when the reference child attends formal childcare compared to no childcare. The amount of mothers' unpaid care work is almost halved to 17 hours. Nevertheless, mothers still perform a greater proportion of care and

housework than fathers, regardless of the form of childcare arrangement. Fathers reduce their time spent on care- and housework from 24 hours to 22 hours per week when the household uses formal care support. Detailed statistics are reported in Table 8 in the Annex.

Empirical Framework

In the previous section, we saw that the work patterns of mothers and fathers differ when childcare is used. Next we want to examine this relationship empirically with the use of Ordinary Least Square (OLS) regression analyses. We assess the effect of childcare on the paid and unpaid work performed by parents (household level), separately for mothers and fathers (individual level) and the difference between mothers and fathers (gender time gaps).

First, we seek to shed light on the potential effects of an increase in weekly hours of formal childcare on the volume of paid and unpaid work performed by parents. We distinguish between the total volume of parents' working time (paid and unpaid), paid working time, total unpaid working time and unpaid care- and unpaid housework. This gives us three regression models at the household level. The Ordinary Least Squares (OLS) regression formula for the household-level regression analysis is given as:

$$y_i = \beta_0 + \beta_1 X_i + \beta_2 Z_{m,i} + \beta_3 Z_{f,i} + \epsilon_i \quad (1)$$

where y_i represents the working hours ('work total' and the subsets 'paid work', 'unpaid work', 'unpaid carework' and 'unpaid housework') of household i . β_0 is the intercept. The matrix X_i includes household-level variables such as the main explanatory variable, i.e. weekly hours of formal childcare ('Childcare Hours (Formal)'), as well as the control variables - number of children aged 0-14 ('Children 0-14'), the presence of infants aged 0-1 ('Infant'), living in Vienna ('Vienna') and income quintiles of the household ('Income Quintile 1-5'). The matrices $Z_{m,i}$ and $Z_{f,i}$ represent individual-level control variables for the mother and father, respectively, including tertiary education ('Tertiary'), citizenship status ('Citizenship: Austria, EU or third country'), a dummy indicating if aged above 40 ('Above 40') and the share of household income contributed ('Share of Household Income'). The shares of income contributed to the household by mothers and fathers are given as numeric percentage points and add up to 100 percent of total household income. Therefore, only the female share is included in the regression analysis for households to prevent multicollinearity issues. The coefficients β_2 , β_3 , and β_4 measure the impact of these variables on the dependent variable. Finally, ϵ_i is the error term, capturing the variation in household working hours not explained by the model.

Second, we estimate the effect of increasing weekly formal childcare hours on mothers and fathers individually. The individual-level regression analyses can be written as:

$$y_{m,i} = \beta_{0m} + \beta_{1m} X_i + \beta_{2m} Z_{m,i} + \epsilon_{m,i} \quad (2)$$

$$y_{f,i} = \beta_{0f} + \beta_{1f} X_i + \beta_{2f} Z_{f,i} + \epsilon_{f,i} \quad (3)$$

In the third model, we focus on intra-couple gender time gaps. The gender time gap reflects the absolute difference between average weekly working hours of mothers and fathers in our sample. This difference can refer to total, paid or unpaid working hours, as well as the subsets of unpaid work, carework and housework.

The OLS regression model for the intra-couple gender time gap (differences) regression analysis can be denoted as:

$$y_i = \beta_0 + \beta_1 X_i + \beta_2 Z_{m,i} + \beta_3 Z_{f,i} + \epsilon_i \quad (4)$$

where the gender time gap y_i as the difference in working hours between mothers and fathers in the same household is defined as:

$$y_i = y_{f,i} - y_{m,i} \quad (5)$$

with $y_{f,i}$ representing the working hours of the mother in household i and $y_{m,i}$ represents the working hours of the father in household i . All other terms are analogous to equation 1.

Results

Household & Individual level

The results of the household-level OLS regressions are displayed in [Table 3](#). The estimation shows that an increase in time spent in formal childcare affects couples' total, paid and unpaid working hours. As carework is outsourced, the unpaid work of parents decreases significantly. This reduction is mainly due to the decrease in carework; the total amount of housework is not affected by the use of formal childcare. A part of the time gained is reallocated to paid work, leading to a significant increase in couples' combined working hours on the labor market. Overall, parents' total time spent on paid and unpaid work decreases.

To understand the composition of these changes, we present the results separately for mothers and fathers in [Table 4](#). Columns (1)-(5) depict the results for mothers. Increasing mean weekly formal childcare time by one hour significantly decreases total working hours of mothers by 0.16 hours (10 minutes) per week, where paid working hours increase by 0.19 hours (11 minutes) and unpaid working hours decrease by 0.35 hours (21 minutes) weekly. Dividing unpaid working hours into the subcategories of unpaid work activities, i.e. carework and housework, it becomes clear that the decrease in unpaid work is mostly driven by a decrease in carework for mothers.

Turning to the regression results for fathers in columns (6)-(10), we see that both coefficients of total working hours as well as paid working hours have the same sign as the coefficients for mothers, but they remain insignificant for fathers. The only significant effects can be detected in time spent on unpaid work and unpaid carework. If time spent in formal childcare is increased by one hour per week, fathers' unpaid work declines by 0.11 hours (7 minutes) weekly and unpaid childcare time reduces marginally, but significantly by 0.09 hours (6 minutes) per week. In other words, the impact on mothers' unpaid working time (minus 21 minutes per week) is more far-reaching.

Serving as a visual illustration of the results, [Figure 2](#) depicts the fitted values from the OLS regression analyses of model 1 (household-level) and model 2 (individual-level). The x-axis represents the time spent in formal childcare (in hours per week) and the y-axis represents (a) parents' paid work time, (b) parents' unpaid work time, (c) parents' unpaid carework time and (d) parents' unpaid housework time in hours per week.

[Figure 2a](#) shows the positive relationship between formal childcare and parents' paid working hours. There are clearly discernible differences between fathers and mothers. The curve for fathers is almost flat, indicating that paid working hours hardly increase with the increasing use of childcare. On the other hand, paid working time of mothers is clearly linked to the use of formal childcare. On average, mothers using full-day formal care services work 7.5 hours more per week than mothers with no formal care support. The reason for this limited increase becomes clear when looking at the spread of the data points. There is a clustering of households that use formal childcare for 20-25 hours per week, while having varying paid working hours of mothers at the same time. For unpaid work in [Figure 2b](#), we see a similar pattern: While the time spent by fathers remains largely unchanged, mothers reduce the amount of unpaid work by 14 hours when they switch from no formal childcare to full-day childcare. [Figure 2c](#) shows that mothers' reduction of unpaid work is mostly related to a decrease in carework. Hours spent on housework decrease to a much smaller extent (see [Figure 2d](#)).

Overall, [Figure 2a-d](#) illustrates our main finding: The use of childcare contributes significantly to parents increasing paid work and reducing unpaid work. However, the effect is mainly due to a change in the behavior of women. As fathers generally work full-time - regardless of childcare - and do significantly fewer unpaid hours, the effects of childcare are almost completely absent for them.

Table 3: Regression Results for Households

	Dependent variable: couples' (households') working hours				
	Work Total	Paid Work	Unpaid Work	Unpaid Work: carework	Unpaid Work: housework
	(1)	(2)	(3)	(4)	(5)
Childcare Hours (Formal)	0.218 (0.114)	0.231 (0.083)	0.449 (0.093)	0.344 (0.073)	0.105 (0.075)
Children 0-14	2.534 (1.444)	1.557 (1.059)	4.091 (1.187)	1.739 (0.927)	2.351 (0.954)
Infant	13.417 (3.315)	3.647 (2.431)	9.770 (2.724)	10.238 (2.128)	0.468 (2.190)
Vienna	0.324 (3.125)	6.091 (2.291)	5.767 (2.568)	6.923 (2.005)	1.156 (2.064)
Income Quintile 2	2.574 (3.260)	4.922 (2.390)	2.347 (2.679)	3.092 (2.092)	5.439 (2.153)
Income Quintile 3	8.458 (3.187)	14.478 (2.337)	6.019 (2.619)	2.026 (2.045)	8.045 (2.105)
Income Quintile 4	13.428 (3.543)	16.729 (2.598)	3.301 (2.911)	6.651 (2.274)	9.952 (2.340)
Income Quintile 5	19.107 (4.133)	26.225 (3.030)	7.117 (3.396)	2.535 (2.653)	9.652 (2.730)
Male: Tertiary	0.680 (3.026)	2.568 (2.219)	3.249 (2.487)	0.754 (1.942)	2.495 (1.999)
Female: Tertiary	1.023 (2.771)	1.108 (2.032)	0.086 (2.277)	5.260 (1.778)	5.346 (1.830)
Male: Citizenship: EU	11.261 (5.299)	2.181 (3.885)	9.081 (4.355)	6.440 (3.401)	2.641 (3.500)
Male: Citizenship: Austria	12.245 (3.899)	1.001 (2.858)	11.244 (3.204)	5.965 (2.502)	5.279 (2.575)
Female: Citizenship: EU	9.114 (5.576)	13.859 (4.088)	4.745 (4.582)	3.232 (3.579)	1.513 (3.683)
Female: Citizenship: Austria	11.936 (4.047)	13.430 (2.967)	1.493 (3.326)	1.447 (2.598)	0.046 (2.673)
Male: above 40 parent	3.410 (2.604)	4.271 (1.909)	0.861 (2.140)	1.640 (1.671)	0.779 (1.720)
Female: above 40 parent	9.811 (2.909)	3.043 (2.133)	6.769 (2.391)	7.789 (1.867)	1.020 (1.922)
Female: Share of Household Income	0.050 (0.059)	0.055 (0.043)	0.105 (0.049)	0.011 (0.038)	0.116 (0.039)
Constant	94.431 (5.728)	27.566 (4.200)	66.865 (4.707)	26.013 (3.676)	40.852 (3.783)
Observations	671	671	671	671	671
R ²	0.205	0.262	0.256	0.310	0.115
Adjusted R ²	0.184	0.243	0.237	0.292	0.092
Residual Std. Error (df = 653)	762.159	558.781	626.293	489.146	503.371
F Statistic (df = 17; 653)	9.877	13.634	13.245	17.293	4.984

Note: p<0.1; p<0.05; p<0.01

Table 4: Regression Results for Mothers and Fathers

	Dependent variable: Mothers' working hours					Dependent variable: Fathers' working hours				
	Work Total	Paid Work	Unpaid Work	Unpaid Work: carework	Unpaid Work: housework	Work Total	Paid Work	Unpaid Work	Unpaid Work: carework	Unpaid Work: housework
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Childcare Hours (Formal)	0.160 (0.077)	0.189 (0.049)	0.349 (0.067)	0.256 (0.054)	0.093 (0.052)	0.082 (0.078)	0.026 (0.057)	0.108 (0.066)	0.094 (0.039)	0.015 (0.049)
Tertiary Education	0.441 (1.721)	0.561 (1.095)	0.120 (1.508)	3.640 (1.209)	3.760 (1.166)	0.041 (1.922)	1.693 (1.392)	1.734 (1.613)	0.659 (0.966)	1.075 (1.213)
Citizenship: EU	10.207 (3.348)	6.797 (2.130)	3.411 (2.935)	2.411 (2.353)	1.000 (2.268)	5.190 (3.234)	3.855 (2.341)	1.335 (2.714)	1.758 (1.625)	0.423 (2.041)
Citizenship: Austria	9.892 (2.536)	5.326 (1.613)	4.566 (2.222)	4.364 (1.782)	0.202 (1.718)	6.535 (2.497)	4.385 (1.808)	2.150 (2.096)	0.037 (1.255)	2.112 (1.576)
above 40 parent	0.610 (1.743)	0.146 (1.109)	0.464 (1.528)	3.732 (1.225)	3.268 (1.181)	1.838 (1.620)	0.361 (1.173)	2.199 (1.359)	2.165 (0.814)	0.034 (1.022)
Share of Household Income	0.101 (0.040)	0.291 (0.025)	0.190 (0.035)	0.042 (0.028)	0.148 (0.027)	0.125 (0.038)	0.180 (0.027)	0.056 (0.032)	0.004 (0.019)	0.052 (0.024)
Children 0-14	2.226 (0.969)	1.715 (0.616)	3.941 (0.849)	1.239 (0.681)	2.702 (0.656)	0.549 (1.000)	0.556 (0.724)	0.007 (0.839)	0.306 (0.502)	0.313 (0.631)
Infant	9.757 (2.235)	0.569 (1.422)	10.326 (1.959)	10.933 (1.570)	0.607 (1.514)	5.531 (2.279)	4.767 (1.650)	0.764 (1.912)	0.235 (1.145)	0.529 (1.438)
Vienna	2.066 (2.079)	4.755 (1.322)	2.689 (1.822)	2.967 (1.461)	0.278 (1.408)	0.096 (2.142)	2.134 (1.551)	2.230 (1.798)	4.129 (1.077)	1.899 (1.352)
Income Quintile 2	0.137 (2.201)	1.364 (1.400)	1.227 (1.929)	1.017 (1.546)	2.244 (1.491)	1.476 (2.242)	2.562 (1.623)	1.087 (1.882)	2.003 (1.127)	3.089 (1.415)
Income Quintile 3	2.971 (2.156)	6.752 (1.372)	3.781 (1.890)	1.246 (1.515)	5.027 (1.461)	5.951 (2.210)	7.975 (1.600)	2.024 (1.855)	0.743 (1.111)	2.767 (1.395)
Income Quintile 4	3.671 (2.380)	5.809 (1.514)	2.138 (2.086)	2.999 (1.672)	5.136 (1.612)	10.508 (2.438)	11.497 (1.765)	0.989 (2.046)	3.661 (1.225)	4.650 (1.539)
Income Quintile 5	7.071 (2.683)	11.917 (1.707)	4.846 (2.352)	0.467 (1.885)	5.313 (1.818)	13.315 (2.822)	14.341 (2.043)	1.026 (2.368)	2.972 (1.418)	3.998 (1.781)
Constant	47.218 (3.670)	0.088 (2.335)	47.130 (3.217)	17.569 (2.579)	29.561 (2.487)	40.471 (4.410)	13.007 (3.192)	27.464 (3.701)	9.927 (2.217)	17.537 (2.784)
Observations	671	671	671	671	671	671	671	671	671	671
R ²	0.146	0.386	0.320	0.332	0.166	0.107	0.182	0.028	0.079	0.030
Adjusted R ²	0.129	0.374	0.307	0.319	0.149	0.090	0.166	0.009	0.061	0.010
Residual Std. Error (df = 657)	518.236	329.692	454.197	364.149	351.089	530.388	383.955	445.119	266.585	334.786
F Statistic (df = 13; 657)	8.643	31.745	23.779	25.161	10.037	6.070	11.250	1.444	4.347	1.538

Note: p<0.1; p<0.05; p<0.01

(a) Parents' paid work time vs. time spent in formal childcare

(b) Parents' unpaid work time vs. time spent in formal childcare

(c) Parents' unpaid carework time vs. time spent in formal childcare

(d) Parents' unpaid housework time vs. time spent in formal childcare

Figure 2: Parents' time (paid, unpaid) vs. time spent in formal childcare

Note: These figures illustrate the relationship between parents' work time (paid, unpaid, unpaid carework and unpaid housework) and time spent in formal childcare.

Gender Time Gaps

Now that we have investigated the impacts of increasing formal childcare hours on the volume of paid and unpaid work for both parents, as well as on the individual time patterns of mothers and fathers, the question remains how increasing formal hours of childcare could impact the (intra-couple) gender time gaps in paid and unpaid working hours.

[Table 5](#) summarizes the weighted mean and median as well as minimum and maximum values of the gender time gaps by work type. Mothers in our sample work more, with a median gender time gap in total working time of 6 hours per week. While mothers work less paid hours - on average mothers work 19.7 hours less paid hours per week - they do take over the lion's share of unpaid work, which leaves them to work more overall. The gender time gap in unpaid working time is large, on average, mothers work 25.5 unpaid hours per week, by taking over 12.8 hours of carework and another 12.7 hours of housework.

Table 5: Summary statistics of gender time gaps (differences) in hours spent working, (female - male)

	Mean	Median	Min	Max
gender time gap: total work	5.8	6.0	-89.6	82.1
gender time gap: paid work	-19.7	-20	78.5	56.0
gender time gap: unpaid work	25.5	27.1	-87.4	87.5
gender time gap: unpaid carework	12.8	10.9	-60.0	85.2
gender time gap: unpaid housework	12.7	13	-88.8	64.7

The results of the household-level OLS regressions are displayed in [Table 6](#). Given that the gender time gaps are calculated by subtracting fathers' working hours from mothers' working hours, an increase in the gap means that mothers' working hours are increasing relative to fathers', while a decrease in the gap means that mothers' working hours are decreasing relative to fathers'.

Increasing mean weekly time spent in formal childcare by one hour leads to a significant decrease of 0.28 hours (17 minutes) in the gender gap of unpaid working hours. The gap in paid working hours closes significantly by 0.15 hours (9 minutes) per week. Dividing unpaid working hours into the subcategories of unpaid work activities, i.e. carework and housework, it becomes evident that the decrease in the unpaid work gap seems to be driven by a significant decrease in the carework gap, while the coefficient on the unpaid housework time gap is negative but not significant. Overall, this means that increasing mean weekly time spent in formal childcare improves the gender time gaps in paid and unpaid working hours, meaning mothers spend less time in unpaid work and unpaid carework relative to fathers and more time in paid work relative to fathers.

Further findings

Apart from the hours spent in formal childcare, we find the following effects on parental working hours.

Having more children between the ages of 0 and 14 increases unpaid working hours and therefore also total working hours of households. Interestingly, the effect is greater for unpaid housework than for unpaid care work. A closer look at the individual level shows that the increase is exclusively due to an increase in mothers' working hours, while having more than one child does not change fathers' paid or unpaid work patterns. On average, the presence of an additional child increases the gender time gap in unpaid work by 4 hours and in paid work by about 2 hours per week.

The effect of an infant aged 0 to 1 living in the household increases parents' total working time by 13 hours per week, of which 10 hours are spent on unpaid childcare tasks. In particular, unpaid working time of mothers increases even more significantly. For fathers, the paid working time increases by around 5 hours due to the presence of infants, however, the unpaid working time remains unchanged. Overall, the presence of infants significantly increases the gender time gap in unpaid working hours.

Living in Austria's capital Vienna significantly decreases paid weekly working hours for mothers, and thereby increases the gender gap in paid work. Additionally, mothers and fathers who live in Vienna engage more in unpaid work. As to why this decrease in paid working hours is coupled with a significant increase in unpaid carework (mostly childcare), there are several possible explanations. In general, Vienna exhibits a lower labor market participation and a higher unemployment rate as compared to the rest of Austria, which is why Viennese households spend less time in paid work, on average. Additionally, more flexible working hours, opportunities for part-time work and shorter commuting times might encourage parents to spend more time with their families. Lastly, higher wage levels could allow parents in Vienna to work fewer hours while still earning enough to meet their financial needs.

Falling into a higher income quintile is associated with more paid working hours for parents. Compared to mothers in the first (lowest) income quintile, mothers in the fifth (highest) income quintile work 12 paid hours more per week. For fathers, it is even 14 hours more. Unpaid housework for

Table 6: Regression Results for Gender Time Gaps (gender differences in hours)

	Dependent variable:				
	Work Total (1)	Paid Work (2)	Unpaid Work (3)	Unpaid Work: carework (4)	Unpaid Work: housework (5)
Childcare Hours (Formal)	0.135 (0.106)	0.145 (0.065)	0.280 (0.095)	0.181 (0.060)	0.099 (0.070)
Male: Tertiary	0.032 (2.814)	0.990 (1.724)	1.023 (2.527)	0.100 (1.593)	1.122 (1.854)
Female: Tertiary	0.798 (2.577)	0.051 (1.579)	0.746 (2.314)	1.879 (1.458)	2.625 (1.697)
Male: Citizenship: EU	1.630 (4.928)	1.218 (3.019)	2.848 (4.425)	1.403 (2.789)	1.445 (3.246)
Male: Citizenship: Austria	0.970 (3.625)	2.432 (2.221)	3.402 (3.255)	1.838 (2.052)	1.565 (2.388)
Female: Citizenship: EU	4.925 (5.186)	1.271 (3.177)	6.196 (4.656)	4.547 (2.935)	1.649 (3.415)
Female: Citizenship: Austria	2.330 (3.764)	2.569 (2.306)	4.899 (3.380)	7.280 (2.130)	2.381 (2.479)
Male: above 40 parent	0.912 (2.422)	1.875 (1.483)	0.963 (2.174)	0.486 (1.370)	0.476 (1.595)
Female: above 40 parent	5.196 (2.706)	0.040 (1.657)	5.235 (2.429)	0.667 (1.531)	4.568 (1.782)
Female: Share of Household Income	0.268 (0.055)	0.526 (0.034)	0.258 (0.049)	0.088 (0.031)	0.170 (0.036)
Children 0-14	1.913 (1.343)	2.312 (0.823)	4.226 (1.206)	1.084 (0.760)	3.142 (0.884)
Infant	5.497 (3.083)	4.121 (1.889)	9.618 (2.768)	10.849 (1.745)	1.230 (2.030)
Vienna	1.633 (2.906)	3.480 (1.780)	1.847 (2.609)	0.208 (1.645)	1.638 (1.914)
Income Quintile 2	2.895 (3.032)	1.751 (1.857)	1.143 (2.722)	1.769 (1.716)	0.626 (1.997)
Income Quintile 3	3.547 (2.964)	1.061 (1.816)	2.486 (2.661)	0.013 (1.677)	2.498 (1.952)
Income Quintile 4	7.708 (3.295)	5.112 (2.018)	2.596 (2.958)	1.356 (1.865)	1.240 (2.170)
Income Quintile 5	6.622 (3.844)	2.414 (2.354)	4.209 (3.451)	2.233 (2.175)	1.975 (2.531)
Constant	7.034 (5.327)	27.643 (3.263)	20.608 (4.783)	5.480 (3.015)	15.128 (3.508)
Observations	671	671	671	671	671
R ²	0.064	0.363	0.179	0.226	0.105
Adjusted R ²	0.040	0.346	0.157	0.206	0.082
Residual Std. Error (df = 653)	708.774	434.169	636.397	401.132	466.786
F Statistic (df = 17; 653)	2.623	21.850	8.349	11.244	4.504

Note: p< 0.1; p< 0.05; p< 0.01

both parents decreases with higher income, which suggests that these activities are being outsourced. Interestingly, fathers in higher quintiles spend more time on childcare than fathers in lower income quintiles.

We find that higher levels of maternal education are associated with more time spent on childcare and less time spent on housework. This finding supports the 'parental investment theory', which suggests that higher educated individuals, especially mothers, invest more resources (both time and money) in caring for their children. The significant decline in unpaid housework among mothers could be due to the fact that highly educated people are more likely to be able to afford domestic help and simply outsource housework tasks. For fathers, tertiary education does not have a significant effect on paid or unpaid work.

The migration background, measured by citizenship also has an effect on parents' time allocation. Households with Austrian fathers spend most time on paid and unpaid work, followed by those with EU citizenship and then third-country nationals. However, the difference between EU and third-country nationals is not significant in the individual regression model for fathers. Households with mothers with Austrian or EU citizenship exhibit more hours of paid work. The regressions at the individual level additionally show that Austrian mothers spend more time on unpaid work, which is mainly driven by carework.

The relationship between work patterns and age is different for fathers and mothers at the household and individual level. At the household level, we find that families with fathers older than 40 years spend more time on paid work. At the individual level we see that, older fathers spend fewer hours on unpaid care work, while the positive effect on paid work remains insignificant. If the mother is older than 40 years, the unpaid carework hours and thus the total working hours in the household decrease. At the individual level, the estimates show that mothers not only perform less carework, but in return increase the volume of housework. These effects seem to cancel each other out and the relationship with unpaid work remains insignificant.

Both mothers and fathers work more paid hours and fewer unpaid hours when they earn a higher share of the household income. It should be emphasized that the effects are significantly higher for mothers than for fathers. For example, the increase in paid working hours is 1.6 times greater for mothers. Due to the different starting levels, more pronounced changes are possible for mothers. As mothers' income contributions increase, parents' paid and unpaid working hours converge, leading to a closing of the gender time gap.

Robustness Checks

We perform several robustness checks on our data. First, we construct a sample of couple households with children aged between 0 and 4 years. The results are depicted in [Table 9 - Table 11](#) in the Appendix. Overall, the main patterns observed in the initial regression results hold true in the robustness check, indicating that the results are generally robust. Formal childcare hours consistently increase paid work and reduce unpaid work for households and mothers in particular. Likewise, gender time gaps narrow, with the effects being more pronounced in the robustness check, suggesting even greater efficacy in households with younger children (0-4 years). The presence of infants and young children significantly increases unpaid work hours, particularly for mothers, and this effect is more pronounced in the robustness sample. Higher-income households experience a greater reduction in unpaid work, highlighting the importance of financial resources in managing childcare. The robustness checks confirm that the findings related to formal childcare and income share are particularly robust across different samples, while some variability is observed for other variables such as education and citizenship.

Second, we run the regressions on a sample without infants. The results are depicted in [Table 12 - Table 14](#) in the Appendix. Comparing the main regression results with the robustness checks excluding households with infants, formal childcare hours continue to significantly increase paid work

for households, mothers, and fathers. The magnitude of these effects remains consistent with the main regression results, indicating that formal childcare effectively enables parents to engage in paid work, regardless of the presence of infants. Likewise, formal childcare hours significantly reduce unpaid work, particularly carework, for households and mothers. These effects are consistently observed in both the main regression and the robustness check. For gender time gaps, the effects on unpaid working hours are slightly less pronounced in the robustness check, indicating that formal childcare is slightly less effective in reducing gender disparities in unpaid work when households with infants are excluded. This stresses the importance of early childhood formal childcare availability in narrowing gender time gaps in unpaid work within families.

Next, we differentiate between public and private formal childcare facilities to investigate the impact of these distinct childcare arrangements on parents' work dynamics. The results are summarized in [Table 15](#) - [Table 17](#) in the Appendix. Public childcare consistently exhibits significant positive effects; increasing paid work hours and reducing unpaid work hours, particularly carework, at the household level and for mothers in particular. In contrast, the effects of private childcare are generally less significant and less consistent. While private childcare does show some significant reductions in unpaid work hours, these effects are less pronounced and less consistent compared to public childcare. This indicates that public childcare is more effective in enabling parents, especially mothers, to engage in paid work and reduce their unpaid carework compared to private childcare arrangements.

Finally, we compute quantile regressions on the gender time gaps. The results are displayed in [Table 18](#) and visualized in [Figure 3](#) in the Appendix. Overall, the quantile regression ($\tau = 0.5$) results are consistent with the OLS results, but they do not necessarily show more pronounced effects. In some cases, the quantile regression indicates stronger effects, particularly for citizenship and income quintiles, but differences between the two estimation methods are negligible. Both methods align in showing that formal childcare increases paid work and reduces unpaid work and carework for mothers relative to fathers. [Figure 3](#) illustrates these differences. The pink line represents the OLS estimates. It shows a positive slope, indicating that with more formal childcare hours, the negative gap (where fathers work more paid hours than mothers) slightly narrows. This means mothers are able to increase their paid work hours, thereby narrowing the gender time gap. Both the slopes of the 25th percentile ($\tau = 0.25$) as well as the median line ($\tau = 0.5$) have similar steepness compared to the OLS results. What strikes the eye is the 75th percentile line ($\tau = 0.75$): It is much less steep compared to the other lines, almost flat. This indicates that a change in formal childcare hours has a lesser or close-to-zero effect on changing the paid work gap if the households' paid work gap is initially bigger (closer to zero). In other words, if the distribution of paid work hours between parents is more equal, a change in formal childcare hours does not make a huge difference. As such, formal childcare hours help to reduce the gender gap in paid work, particularly in households where fathers work significantly more paid hours than mothers. For the gap in unpaid work hours, the quantile and OLS regression lines do not differ notably. All lines show negative slopes, indicating that with more formal childcare hours, the positive gap (where mothers do more unpaid work than fathers) narrows. The similarities between the OLS and quantile regressions for unpaid work hours indicate a consistent effect of formal childcare across different parts of the distribution. Regardless of the initial unpaid work gap, the reduction in the positive gap (where mothers do more unpaid work) is consistently observed. This suggests that formal childcare hours have a uniform impact on reducing the unpaid work gap across different households.

Both OLS and quantile regressions confirm that formal childcare hours reduce the gender time gap in paid and unpaid work. The quantile regressions show that the reduction in gender gaps (particularly the paid work gap) is more pronounced in households with larger initial gaps. This implies that households with larger discrepancies in paid work hours between parents benefit more from formal childcare in terms of narrowing these gaps.

Discussion & Policy Recommendations

In line with the existing literature (e.g. Craig and Powell 2013), our analysis provides robust evidence that increasing children's time spent in formal childcare effectively reduces the total working time of couples. There is an increase in paid working hours, while unpaid working time, particularly carework, is reduced.

The results on parents' individual work time patterns reveal distinct effects of increasing formal childcare hours on mothers and fathers (individual level). For mothers, formal childcare significantly reduces total working hours, with a notable shift from unpaid to paid work. This shift is driven by a decrease in carework, highlighting that formal childcare enables mothers to engage more in paid employment. Fathers, on the other hand, only show marginal decreases in unpaid work and carework with increased formal childcare hours, while there is no impact of formal childcare on fathers' paid working time. Finally, the estimations for gender time gaps reveal that increasing formal childcare hours significantly narrows the gender disparities in paid and unpaid work between mothers and fathers.

Further we find that the presence of infants and multiple children in a household increases the overall working time of parents, in particular the unpaid work burden on mothers. Higher maternal education levels are associated with increased carework and reduced housework, supporting the parental investment theory. On the other hand, higher household income contributions by mothers can alter the traditional gender dynamics in households' labor distribution (Gupta 2006; Janeen Baxter and Hewitt 2013; Aassve, Fuochi, and Mencarini 2014; Lyonette and Crompton 2015) and thereby narrow the gender time gaps in paid and unpaid work. In households with younger children (0-4 years), formal childcare is even more effective in reducing gender disparities in paid work.

The distinction between public and private childcare reveals that public childcare has a more significant and consistent impact on increasing paid work and reducing unpaid work, particularly for mothers. This emphasizes the importance of accessible public childcare in promoting maternal labor market participation and gender equality. Quantile regression analysis further supports the OLS findings, showing that formal childcare hours reduce the gender gap in both paid and unpaid work across different parts of the distribution. The reduction in paid work gender gaps is more pronounced in households with larger initial gaps, indicating that parents with significant discrepancies in paid working hours benefit more from an increase in formal childcare hours.

In some aspects caution needs to be exercised when interpreting the results on gender time gaps: While our findings indicate that formal childcare helps in narrowing the gender gaps in paid and unpaid work, it is important to note that this reduction is primarily driven by an increase in mothers' paid working hours and a decrease in their unpaid working hours. This does not necessarily reflect a shift towards a more gender-equal distribution of work, as the adjustments in working hours are predominantly made by mothers rather than a more equitable sharing of responsibilities between both parents. Fathers' contributions to paid and unpaid work remain largely unchanged, highlighting that the observed narrowing of gender gaps is not due to fathers doing less paid work and more unpaid work, but rather mothers adjusting their work patterns. As a result, the differences in time allocation between parents in paid and unpaid work remain pronounced and traditional gender roles persist, as it's mothers who have to bear the brunt of adjustments in work hours.

Nevertheless, our findings support that policies promoting accessible and affordable formal childcare can significantly contribute to gender equality in labor market participation and reduce the burden of unpaid work on mothers. In light of the finding that public childcare is more effective in enabling parents, especially mothers, to engage in paid work while reducing their unpaid carework compared to private childcare, it is crucial to provide the budgetary resources for investments in childcare infrastructure on the one hand, and to ensure that childcare is provided free of charge. At the moment, only three out of nine federal states in Austria offer (almost) free-of-charge and full-day childcare arrangements. For parents living in one of the other six federal states, costs for childcare can seriously impact the decision of parents' labor force participation and work time (especially that

of mothers). Austria must therefore consistently expand public childcare services in order to at least meet the Barcelona-targets for 2030.

In order to achieve more gender equality, our results suggest that societal shifts and policies must also focus on encouraging a more equitable sharing of responsibilities between mothers and fathers. This includes promoting father-friendly work and paternal leave policies and challenging traditional gender norms that dictate household and childcare responsibilities. Research shows that if fathers make use of their parental leave rights and if the duration of the paternity leave is sufficiently long, they are more invested in unpaid house- and carework in the future (Tamm 2019; Banning 2015). Even though the right to paternity leave was implemented more than 30 years ago in Austria, there is a shrinking share of fathers making use of their paternity leave rights, and most of them only take very short leaves (Riesenfelder, Danzer, and Hauer 2024). Thus, it is advisable to consider measures such as compulsory paternal leave and reforms to the parental leave system to ensure an equal share of leave days between parents.

Finally, in order to achieve gender equality in the division of paid and unpaid work, societal norms and traditional gender roles need changing, also regarding paid work time patterns and flexible work schemes. A study (Salin, Ylikanno, and Hakovirta 2018) where attitudes toward different earner-carer models in European countries were analysed found that the 'male breadwinner model' is still regarded as the best model in Austria. The vast majority of households in our sample being male breadwinner households speaks for itself. Novel research shows that flexible work-time arrangements between parents and dual-earner families, where both parents work part-time can also positively impact the division of unpaid work within families (Warren 2022, Banning 2020). Thus, future policies should not only focus on adequate childcare provision and parental leave reforms but also on fostering an environment where flexible working hours and family-friendly work hours are available and encouraged for both parents. An overall work time reduction to e.g. 30 hours per week for everyone could help alleviate the dual burden on mothers by facilitating a more balanced sharing of responsibilities between parents, ultimately contributing to a more equitable and supportive work-family dynamic.

References

- Aassve, Arnstein, Giulia Fuochi, and Letizia Mencarini (2014). "Desperate housework: Relative resources, time availability, economic dependency, and gender ideology across Europe". *Journal of Family Issues* 35.8, pp. 1000{1022.
- Achleitner, Sophie (2022). *Kinderbetreuung und Vollzeitjob* Momentum Institut. url : <https://www.momentum-institut.at/grafik/kinderbetreuung-und-vollzeitjob/>
- | (2023a). *Baustelle Kleinkindbetreuung* Momentum Institut. url : <https://www.momentum-institut.at/news/baustelle-kleinkindbetreuung/>
- | (2023b). *Seit 40 Jahren unbezahlte Sorgearbeit unverändert Frauensache* Momentum Institut. url : <https://www.momentum-institut.at/news/seit-40-jahren-unbezahlte-sorgearbeit-unveraendert-frauensache/>
- | (2024a). *Muttertag: Mütter haben weniger Freizeit als Vater*. Momentum Institut. url : <https://www.momentum-institut.at/news/muttertag-muetter-haben-weniger-freizeit-als-vaeter/>
- | (2024b). *Vatertag 2024: Österreich ist EU-Schlusslicht bei Vaterkarenzbeteiligung* Momentum Institut. url : <https://www.momentum-institut.at/news/vatertag-2024-oesterreich-ist-eu-schlusslicht-bei-vaeterkarenzbeteiligung/>
- Adema, Willem, Nabil Ali, and Olivier Thevenon (2014). *Changes in family policies and outcomes: Is there convergence?* OECD.
- Bauernschuster, Stefan and Martin Schlotter (2015). "Public child care and mothers' labor supply|Evidence from two quasi-experiments". In: *Journal of Public Economics* 123, pp. 1{16.
- Baxter, Janeen and Belinda Hewitt (2013). "Negotiating domestic labor: Women's earnings and housework time in Australia". In: *Feminist Economics* 19.1, pp. 29{53.
- Baxter, Jennifer and Diana Smart (2011). "Fathering in Australia among couple families with young children: Research highlights". In: *Family Matters* 88, pp. 15{26.
- Berghammer, Caroline (2014). "The return of the male breadwinner model? Educational effects on parents' work arrangements in Austria, 1980{2009". In: *Work, employment and society* 28.4, pp. 611{632.
- Bettendorf, Leon JH, Egbert LW Jongen, and Paul Muller (2015). "Childcare subsidies and labour supply|Evidence from a large Dutch reform". In: *Labour Economics* 36, pp. 112{123.
- Brandth, Berit and Ingolfur Gislason (2012). "Family policies and the best interest of children". In: *Parental leave, childcare and gender equality in the Nordic countries*, the Nordic Council, Copenhagen, Denmark
- Banning, Mareike (2015). "What happens after the `daddy months'? Fathers' involvement in paid work, childcare, and housework after taking parental leave in Germany". In: *European Sociological Review* 31.6, pp. 738{748.
- | (2020). "Paternal part-time employment and fathers' long-term involvement in child care and housework". In: *Journal of Marriage and Family* 82.2, pp. 566{586.
- Carmen Huerta, Maria del et al. (2013). *Fathers' leave, fathers' involvement and child development: Are they related? Evidence from four OECD countries* OECD.
- Craig, Lyn (2006). "Parental education, time in paid work and time with children: an Australian time-diary analysis". In: *The British journal of sociology* 57.4, pp. 553{575.
- Craig, Lyn and Killian Mullan (2010). "Parenthood, gender and work-family time in the United States, Australia, Italy, France, and Denmark". In: *Journal of Marriage and Family* 72.5, pp. 1344{1361.
- | (2011). "How mothers and fathers share childcare: A cross-national time-use comparison". In: *American sociological review* 76.6, pp. 834{861.
- Craig, Lyn and Abigail Powell (2013). "Non-parental childcare, time pressure and the gendered division of paid work, domestic work and parental childcare". In: *Community, Work & Family* 16, pp. 100{119. url : <https://api.semanticscholar.org/CorpusID:143571990>
- Craig, Lyn and Pooja Sawrikar (2009). "Work and family: how does the (gender) balance change as children grow?" In: *Gender, Work & Organization* 16.6, pp. 684{709.

- Del Boca, Daniela (2015). Child care arrangements and labor supply. *Inter-American Development Bank*.
- Derndorfer, Judith et al. (2021). "Home, sweet home? The impact of working from home on the division of unpaid work during the COVID-19 lockdown". In: *PLoS one* 16.11, e0259580.
- Esping-Andersen, Gosta (1990). *The three worlds of welfare capitalism*. Princeton University Press.
- Polity (2009). *Incomplete revolution: Adapting welfare states to women's new roles*.
- European Commission (2023). *2023 Country Report Austria*. European Commission. url : https://economy-finance.ec.europa.eu/system/files/2023-06/ip244_en.pdf
- European Commission (2024). *2024 report on gender equality in the EU*. European Commission. url : https://commission.europa.eu/document/download/965ed6c9-3983-4299-8581-046bf0735702_en?filename=2024%20Report%20on%20Gender%20Equality%20in%20the%20EU_coming%20soon.pdf
- European Institute for Gender Equality (2021). *Gender inequalities in care and consequences for the labour market*. European Institute for Gender Equality (EIGE).
- Eurostat (2022). *Gender pay gap statistics*. Eurostat. url : https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Gender_pay_gap_statistics
- Eurostat (2024). *Harmonised European Time Use Surveys (HETUS) - Information on data*. Eurostat. url : <https://ec.europa.eu/eurostat/web/time-use-surveys/information-data>
- Forster, Michael and Gerlinde Verbist (2012). *Money or kindergarten? Distributive effects of cash versus in-kind family transfers for young children*. OECD.
- Gupta, Sanjiv (2006). "Her money, her time: Women's earnings and their housework hours". In: *Social Science Research* 35.4, pp. 975{999.
- Haas, Linda and C Philip Hwang (2008). "The impact of taking parental leave on fathers' participation in childcare and relationships with children: Lessons from Sweden". In: *Community, Work and Family* 11.1, pp. 85{104.
- Hardoy, Ines and Mal Sch ne (2015). "Enticing even higher female labor supply: the impact of cheaper day care". In: *Review of Economics of the Household* 3, pp. 815{836.
- Jokubauskait e, Simona and Alyssa Schneebaum (2022). "Assessing the value of household work based on wages demanded on online platforms for substitutes". In: *Review of Economics of the Household* 20.1, pp. 153{160.
- Kitter d, Ragni Hege and Silje Vatne Pettersen (2006). "Making up for mothers' employed working hours? Housework and childcare among Norwegian fathers". In: *Work, employment and society* 20.3, pp. 473{492.
- Koslowski, Alison Smith (2011). "Working fathers in Europe: Earning and caring". In: *European Sociological Review* 27.2, pp. 230{245.
- Lyonette, Clare and Rosemary Crompton (2015). "Sharing the load? Partners' relative earnings and the division of domestic labour". In: *Work, employment and society* 29.1, pp. 23{40.
- Mahringer, Helmut and Christine Zulehner (2015). "Child-care costs and mothers' employment rates: an empirical analysis for Austria". In: *Review of Economics of the Household* 3, pp. 837{870.
- Moss, Peter (2011). *International review of leave policies and related research 2011*. International Network on Leave Policies & Related Research.
- Müller, Kai-Uwe and Katharina Wrohlich (2020). "Does subsidized care for toddlers increase maternal labor supply? Evidence from a large-scale expansion of early childcare". In: *labour Economics* 62, p. 101776.
- Nepomnyaschy, Lenna and Jane Waldfogel (2007). "Paternity Leave and Fathers' Involvement with their Young Children: Evidence from the American Ecls{B". In: *Community, Work and Family* 10.4, pp. 427{453.
- Neuwirth, Norbert, Isabella Buber-Ennser, and Beat Fux, eds. (2023). *Familien in Österreich: Partnerschaft, Kinderwunsch und ökonomische Situation in herausfordernden Zeiten*
- Nivakoski, Sanna and Massimiliano Mascherini (2021). "Gender differences in the impact of the COVID-19 pandemic on employment, unpaid work and well-being in the EU". In: *Intereconomics* 56.5, pp. 254{260.

- O'Brien, Margaret (2009). "Fathers, parental leave policies, and infant quality of life: International perspectives and policy impact". In: *The Annals of the American Academy of Political and Social Science* 624.1, pp. 190{213.
- O'Brien, Margaret, Berit Brandth, and Elin Kvande (2007). "Fathers, work and family life: Global perspectives and new insights". In: *Community, Work and Family* 10.4, pp. 375{386.
- O'Brien, Margaret and Peter Moss (2010). "Fathers, work and family policies in Europe". In: *The role of the father in child development* Wiley.
- Obinger, Herbert et al. (2015). "Österreichs Sozialstaat im Vergleich internationaler Makrodaten". In: *Österreichische Zeitschrift für Politikwissenschaft* 44.1, pp. 1{15.
- OECD (2011). *Doing better for families*.
- | (2012). *Gender equality in education, employment and entrepreneurship: Final report to the MCM 2012 ERIC Clearinghouse*.
- | (2021). *Caregiving in crisis: gender inequality in paid and unpaid work during COVID-19* OECD Publishing.
- Österle, August and Karin Heitzmann (2019). "Austrian welfare system change?: An analysis of welfare system developments in Austria between 1998 and 2018". In: *Routledge handbook of European welfare systems* Routledge, pp. 21{37.
- Raley, Sara, Suzanne M Bianchi, and Wendy Wang (2012). "When do fathers care? Mothers' economic contribution and fathers' involvement in child care". In: *American journal of sociology* 117.5, pp. 1422{59.
- Riesenfelder, Andreas, Lisa Danzer, and Gerlinde Hauer (2024) *Wiedereinstiegsmonitoring 2024* Verlag Arbeiterkammer Wien. url : https://wien.arbeiterkammer.at/service/studien/Frauen/AK_Wiedereinstiegsmonitoring.html
- Rostgaard, Tine (2002). "Setting time aside for the father: Father's leave in Scandinavia". In: *Community, Work & Family* 5.3, pp. 343{364.
- Salin, Milla, Minna Ylikanno, and Mia Hakovirta (2018). "How to divide paid work and unpaid care between parents? Comparison of attitudes in 22 Western countries". In: *Social Sciences* 7.10, p. 188.
- Sayer, Liana C, Anne H Gauthier, and Frank F Furstenberg Jr (2004). "Educational differences in parents' time with children: Cross-national variations". In: *Journal of marriage and family* 66.5, pp. 1152{1169.
- Statistics Austria (2023a). *Gender Statistik - Erwerbstätigkeit*. Statistics Austria. url : https://www.statistik.at/fileadmin/pages/360/Infotext_Gender-Statistik_Erwerbstaetigkeit.pdf
- | (2023b). *Gender Statistik - Vereinbarkeit von Beruf und Familie*. Statistics Austria. url : https://www.statistik.at/fileadmin/pages/361/Infotext_Vereinbarkeit_von_Beruf_und_Familie.pdf
- | (2023c). *Part-time work, part-time rate*. Statistics Austria. url : <https://www.statistik.at/en/statistics/labour-market/working-time/part-time-work-part-time-rate>
- | (2023d). *Zeitverwendungserhebung 2021/22* Statistics Austria. url : <https://www.statistik.at/statistiken/bevoelkerung-und-soziales/zeitverwendung>
- | (2024). *Employment Indicators*. Statistics Austria. url : <https://www.statistik.at/en/statistics/population-and-society/gender-statistics/employment>
- Sturn, Jakob (2024). *Arbeitszeitreport*. Momentum Institut. url : <https://www.momentum-institut.at/wp-content/uploads/2024/07/Arbeitszeitreport-2024-Momentum-Institut-1.pdf>
- Tamm, Marcus (2019). "Fathers' parental leave-taking, childcare involvement and labor market participation". In: *Labour Economics* 59, pp. 184{197.
- Tanaka, Sakiko and Jane Waldfogel (2007). "Effects of Parental Leave and Work Hours on Fathers' Involvement with their Babies: Evidence from the millennium cohort study". In: *Community, Work and Family* 10.4, pp. 409{426.
- Thevenon, Olivier (2013). *Drivers of female labour force participation in the OECD*. OECD.

- UNICEF (2023). Improving staff working conditions for better quality in early childhood education and care in Austria. UNICEF. url : <https://www.unicef.org/eca/reports/improving-staff-working-conditions-better-quality-early-childhood-education-and-care> .
- Warren, Tracey (2022). "Work-time, male-breadwinning and the division of domestic labour: male part-time and full-time workers in unsettled times". In: *Sociology* 56.1, pp. 72-96.
- Wi , Tobias and Bent Greve (2020). "A comparison of the interplay of public and occupational work-family policies in Austria, Denmark, Italy and the United Kingdom". In: *Journal of Comparative Policy Analysis: Research and Practice* 22.5, pp. 440-457.
- Ziemann, Volker (2015). Towards more gender equality in Austria OECD. url : <https://www.oecd-ilibrary.org/docserver/5jrp2s4pfbnp-en.pdf?expires=1721379066&id=id&acname=guest&checksum=19017E9C54386EE5D26D835AF9C9BA7A>

Annex

Table 7: Categorisation of unpaid work in three subcategories

Carework
Other assistance for an adult household member
Other and unspecified childcare
Accompany the child to appointments and activities
Personal hygiene and medical care for an adult household member
Learn, study and practice with your child
Read, play and talk with the child
Unspecified care work in the household and family
Care and supervision of the child
Distance/path traveled for childcare
Distance/path traveled for other care work in the household and family
Out-of-household Carework (added to carework)
Other and unspecified informal help for another household
Providing assistance to an adult from another household
Childcare as support for other households
Childcare for your own children in another household
Housework
Other and unspecified construction, maintenance and repair activities
Other and unspecified garden and pet care
Other and unspecified care and maintenance of textiles
Other and unspecified cleaning and tidying
Other and unspecified purchasing, commercial and administrative services
Tidying up and cleaning outdoor areas and garden
Tidying up and cleaning your apartment or house
Heating of apartments or houses and hot water preparation
Ironing
Shopping and grocery shopping
Vehicle maintenance
Gardening and garden care
Dish washing
Household management
Caring for pets
Manufacture, repair and maintenance of consumer goods
Use of commercial and administrative services
Preserving and storing food
Walking the dog
Sort and dispose of garbage
Cooking and food preparation
Caring for farm animals
Organizing, tidying up and rearranging the household
Renovation and construction work on the apartment or house
Repairs in the apartment or house
Distance/path traveled for shopping, commercial and administrative errands
Doing laundry

Table 8: Weighted mean weekly working hours, by care type and sex

	no care	childcare (formal + informal)	informal	formal	public	private
total work (paid + unpaid)	134.5	125.7	141.5	116.5	120.7	115.5
total work male	62.2	62.3	68.5	55.4	58.2	56.4
total work female	72.4	63.4	73.0	61.1	62.5	59.0
paid work	49.2	63.9	58.8	52.8	57.0	55.2
paid work male	38.3	40.1	41.5	34.0	36.1	36.4
paid work female	10.9	23.7	17.3	18.8	20.9	18.8
unpaid work	85.3	61.8	82.7	63.7	63.7	60.2
unpaid work male	23.9	22.2	27.0	21.5	22.1	20.0
unpaid work female	61.4	39.6	55.7	42.3	41.6	40.2
unpaid work: carework	44.8	27.2	47.4	26.4	25.7	31.1
male: carework	11.9	9.3	13.5	9.5	9.0	11.1
female: carework	32.8	17.9	33.9	16.9	16.6	19.9
unpaid work: housework	40.5	34.6	35.3	37.4	38.0	29.2
male: housework	11.9	12.9	13.5	12.0	13.1	8.8
female: housework	28.6	21.7	21.8	25.4	24.9	20.3

Table 9: Robustness Check - Households with children aged 0-4, household level

	Dependent variable: couple's combined working hours (household level)				
	Work Total	Paid Work	Unpaid Work	Unpaid Work: carework	Unpaid Work: housework
	(1)	(2)	(3)	(4)	(5)
Childcare Hours (Formal)	0.161 (0.135)	0.211 (0.093)	0.371 (0.112)	0.216 (0.094)	0.155 (0.088)
Male: Tertiary	1.742 (3.565)	1.679 (2.454)	3.421 (2.968)	2.715 (2.470)	0.706 (2.337)
Female: Tertiary	2.641 (3.224)	0.305 (2.219)	2.946 (2.684)	5.914 (2.234)	2.968 (2.113)
Male:Citizenship: EU	11.572 (5.724)	2.268 (3.940)	9.304 (4.765)	6.580 (3.967)	2.724 (3.752)
Male: Citizenship: Austria	18.196 (4.468)	3.629 (3.076)	14.567 (3.720)	8.608 (3.096)	5.959 (2.929)
Female:Citizenship: EU	4.710 (6.326)	10.601 (4.355)	5.891 (5.267)	5.417 (4.384)	0.474 (4.146)
Female: Citizenship: Austria	4.610 (4.931)	9.278 (3.395)	4.668 (4.105)	5.527 (3.417)	0.859 (3.232)
Above 40 parent Male	1.492 (3.148)	0.049 (2.167)	1.443 (2.621)	0.053 (2.181)	1.390 (2.063)
Above 40 parent female	3.461 (4.305)	2.291 (2.963)	5.752 (3.584)	5.713 (2.983)	0.039 (2.821)
Share of Household Income Female	0.151 (0.072)	0.054 (0.050)	0.205 (0.060)	0.018 (0.050)	0.188 (0.047)
Children 0-14	0.277 (1.754)	1.121 (1.208)	1.398 (1.460)	2.476 (1.216)	1.079 (1.150)
Infant	11.690 (3.389)	3.998 (2.333)	7.692 (2.822)	8.519 (2.349)	0.827 (2.222)
Vienna	3.041 (3.823)	3.781 (2.632)	6.822 (3.183)	8.151 (2.649)	1.330 (2.506)
Income Quintile 2	0.546 (3.882)	4.723 (2.672)	4.177 (3.232)	6.960 (2.690)	11.137 (2.544)
Income Quintile 3	10.299 (3.989)	17.772 (2.746)	7.473 (3.321)	5.086 (2.764)	12.559 (2.615)
Income Quintile 4	15.720 (4.380)	15.817 (3.015)	0.097 (3.646)	11.813 (3.035)	11.910 (2.871)
Income Quintile 5	16.717 (5.066)	26.789 (3.488)	10.072 (4.218)	3.904 (3.511)	13.976 (3.321)
Constant	103.737 (6.778)	28.518 (4.666)	75.219 (5.643)	24.066 (4.697)	51.153 (4.443)
Observations	433	433	433	433	433
R ²	0.202	0.281	0.225	0.233	0.157
Adjusted R ²	0.169	0.252	0.193	0.202	0.122
Residual Std. Error (df = 415)	723.241	497.864	602.118	501.203	474.052
F Statistic (df = 17; 415)	6.170	9.559	7.089	7.432	4.544

Note: p<0.1; p<0.05; p<0.01

Table 10: Robustness Check - Households with children aged 0-4, individual level

	Dependent variable: Mothers' working hours					Dependent variable: Fathers' working hours				
	Work Total	Paid Work	Unpaid Work	Unpaid Work: carework	Unpaid Work: housework	Work Total	Paid Work	Unpaid Work	Unpaid Work: carework	Unpaid Work: housework
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Childcare Hours (Formal)	0.123 (0.095)	0.219 (0.060)	0.342 (0.080)	0.233 (0.070)	0.109 (0.061)	0.038 (0.094)	0.009 (0.064)	0.029 (0.083)	0.035 (0.052)	0.064 (0.058)
Tertiary Education	0.153 (2.119)	0.231 (1.336)	0.078 (1.803)	3.974 (1.574)	3.895 (1.372)	2.710 (2.315)	0.952 (1.591)	3.662 (2.059)	1.665 (1.292)	1.997 (1.442)
Citizenship: EU	9.025 (4.132)	4.701 (2.606)	4.324 (3.515)	2.580 (3.070)	1.745 (2.676)	3.729 (3.596)	1.543 (2.471)	2.186 (3.198)	2.855 (2.007)	0.669 (2.240)
Citizenship: Austria	5.265 (3.307)	1.676 (2.086)	3.589 (2.814)	2.979 (2.457)	0.610 (2.141)	8.640 (2.960)	4.301 (2.035)	4.339 (2.633)	2.340 (1.652)	1.999 (1.844)
Above 40 parent	3.363 (2.824)	1.777 (1.781)	1.586 (2.402)	1.807 (2.098)	3.393 (1.829)	2.350 (2.035)	1.683 (1.399)	0.668 (1.810)	0.530 (1.136)	0.138 (1.268)
Share of Household Income	0.058 (0.050)	0.265 (0.032)	0.208 (0.043)	0.058 (0.037)	0.149 (0.033)	0.144 (0.046)	0.137 (0.032)	0.008 (0.041)	0.033 (0.026)	0.025 (0.029)
Children 0-14	1.955 (1.210)	1.838 (0.763)	3.793 (1.030)	1.896 (0.899)	1.897 (0.784)	1.204 (1.214)	1.148 (0.834)	2.352 (1.079)	0.282 (0.677)	2.633 (0.756)
Infant	10.039 (2.376)	0.524 (1.499)	9.515 (2.022)	9.906 (1.765)	0.391 (1.539)	3.348 (2.311)	4.027 (1.588)	0.679 (2.055)	0.851 (1.290)	0.172 (1.440)
Vienna	0.373 (2.643)	4.413 (1.667)	4.040 (2.248)	4.179 (1.963)	0.139 (1.711)	2.185 (2.599)	0.392 (1.786)	2.577 (2.312)	4.725 (1.451)	2.147 (1.619)
Income Quintile 2	1.381 (2.732)	2.465 (1.723)	1.084 (2.324)	4.023 (2.029)	5.107 (1.769)	0.347 (2.685)	1.950 (1.846)	2.297 (2.388)	3.200 (1.499)	5.497 (1.673)
Income Quintile 3	7.228 (2.796)	11.107 (1.763)	3.879 (2.378)	3.482 (2.077)	7.361 (1.810)	4.615 (2.770)	7.693 (1.904)	3.078 (2.464)	1.660 (1.546)	4.738 (1.726)
Income Quintile 4	9.949 (3.014)	8.207 (1.901)	1.742 (2.564)	7.861 (2.239)	6.119 (1.951)	8.335 (3.040)	8.296 (2.089)	0.039 (2.703)	5.006 (1.697)	4.968 (1.894)
Income Quintile 5	12.531 (3.403)	14.740 (2.146)	2.209 (2.895)	4.346 (2.528)	6.556 (2.204)	7.419 (3.459)	12.238 (2.378)	4.819 (3.077)	1.769 (1.931)	6.588 (2.155)
Constant	49.194 (4.515)	1.336 (2.848)	47.858 (3.841)	15.802 (3.354)	32.056 (2.924)	43.967 (5.073)	17.156 (3.486)	26.810 (4.511)	4.979 (2.831)	21.831 (3.160)
Observations	433	433	433	433	433	433	433	433	433	433
R ²	0.140	0.398	0.310	0.269	0.188	0.104	0.159	0.034	0.069	0.073
Adjusted R ²	0.114	0.379	0.288	0.246	0.163	0.076	0.133	0.004	0.040	0.045
Residual Std. Error (df = 419)	512.576	323.275	436.081	380.777	331.902	503.909	346.308	448.138	281.251	313.904
F Statistic (df = 13; 419)	5.268	21.283	14.448	11.847	7.487	3.742	6.077	1.143	2.397	2.554

Note: p<0.1; p<0.05; p<0.01

Table 11: Robustness Check - Households with children aged 0-4, gender time gaps (differences)

	Dependent variable: gender time gaps (differences female - male)				
	Work Total	Paid Work	Unpaid Work	Unpaid Work: carework	Unpaid Work: housework
	(1)	(2)	(3)	(4)	(5)
Childcare Hours (Formal)	0.090 (0.131)	0.242 (0.081)	0.332 (0.119)	0.275 (0.081)	0.057 (0.082)
Male: Tertiary	0.838 (3.458)	0.419 (2.148)	1.258 (3.141)	0.913 (2.150)	2.171 (2.159)
Female: Tertiary	3.399 (3.127)	0.143 (1.942)	3.256 (2.841)	1.032 (1.945)	4.288 (1.952)
Male:Citizenship: EU	0.321 (5.552)	0.875 (3.448)	1.197 (5.043)	0.549 (3.452)	1.746 (3.466)
Male: Citizenship: Austria	0.590 (4.334)	1.557 (2.692)	2.147 (3.937)	0.007 (2.695)	2.154 (2.706)
Female:Citizenship: EU	7.971 (6.137)	2.381 (3.811)	10.352 (5.574)	8.213 (3.816)	2.139 (3.831)
Female: Citizenship: Austria	1.174 (4.784)	7.097 (2.971)	5.923 (4.345)	8.752 (2.974)	2.828 (2.986)
Above 40 parent Male	4.129 (3.053)	4.170 (1.896)	0.042 (2.773)	0.295 (1.899)	0.253 (1.906)
Above 40 parent female	5.493 (4.176)	1.062 (2.593)	6.555 (3.793)	1.408 (2.596)	5.147 (2.607)
Share of Household Income Female	0.257 (0.070)	0.468 (0.044)	0.211 (0.064)	0.089 (0.044)	0.122 (0.044)
Children 0-14	3.224 (1.702)	3.060 (1.057)	6.283 (1.546)	1.535 (1.058)	4.748 (1.062)
Infant	7.278 (3.288)	2.756 (2.042)	10.033 (2.986)	10.367 (2.044)	0.333 (2.052)
Vienna	0.617 (3.708)	4.811 (2.303)	4.194 (3.368)	1.723 (2.306)	2.471 (2.315)
Income Quintile 2	0.931 (3.766)	0.070 (2.339)	0.862 (3.420)	0.592 (2.341)	0.270 (2.351)
Income Quintile 3	1.443 (3.869)	3.691 (2.403)	2.249 (3.515)	0.960 (2.406)	3.209 (2.415)
Income Quintile 4	0.546 (4.249)	0.208 (2.639)	0.338 (3.859)	1.902 (2.642)	2.240 (2.652)
Income Quintile 5	3.987 (4.915)	2.033 (3.052)	1.955 (4.464)	2.116 (3.056)	0.161 (3.068)
Constant	12.585 (6.575)	26.003 (4.083)	13.417 (5.972)	3.124 (4.088)	10.293 (4.104)
Observations	433	433	433	433	433
R ²	0.079	0.353	0.201	0.221	0.137
Adjusted R ²	0.041	0.326	0.168	0.189	0.102
Residual Std. Error (df = 415)	701.571	435.712	637.244	436.226	437.952
F Statistic (df = 17; 415)	2.085	13.301	6.140	6.931	3.881

Note: p<0.1; p<0.05; p<0.01

Table 12: Robustness Check - Households without infants, household level

	Dependent variable: couple's combined working hours (household level)				
	Work Total	Paid Work	Unpaid Work	Unpaid Work: carework	Unpaid Work: housework
	(1)	(2)	(3)	(4)	(5)
Childcare Hours (Formal)	0.179 (0.122)	0.246 (0.094)	0.425 (0.098)	0.352 (0.073)	0.073 (0.080)
Male: Tertiary	0.761 (3.707)	3.194 (2.859)	2.433 (2.967)	3.016 (2.210)	0.582 (2.432)
Female: Tertiary	1.633 (3.415)	2.270 (2.635)	3.903 (2.734)	0.707 (2.036)	4.610 (2.241)
Male:Citizenship: EU	12.860 (6.421)	4.964 (4.953)	7.896 (5.140)	4.313 (3.828)	3.583 (4.212)
Male: Citizenship: Austria	10.302 (4.524)	1.278 (3.489)	9.024 (3.621)	3.749 (2.697)	5.275 (2.968)
Female:Citizenship: EU	11.236 (6.745)	20.639 (5.203)	9.402 (5.399)	5.736 (4.021)	3.667 (4.425)
Female: Citizenship: Austria	11.434 (4.638)	16.177 (3.577)	4.743 (3.712)	2.908 (2.765)	1.835 (3.042)
Male: above 40 parent	3.805 (3.061)	5.960 (2.361)	2.155 (2.450)	3.090 (1.825)	0.935 (2.008)
Female: above 40 parent	8.890 (3.108)	3.989 (2.397)	4.901 (2.488)	5.817 (1.853)	0.916 (2.039)
Female: Share of Household Income	0.012 (0.073)	0.049 (0.057)	0.038 (0.059)	0.024 (0.044)	0.062 (0.048)
Children 0-14	3.544 (1.705)	0.675 (1.315)	4.220 (1.365)	0.571 (1.016)	4.790 (1.118)
Vienna	3.674 (3.900)	7.090 (3.008)	3.416 (3.122)	5.626 (2.325)	2.210 (2.559)
Income Quintile 2	6.367 (4.004)	4.468 (3.089)	1.899 (3.205)	0.191 (2.387)	1.707 (2.627)
Income Quintile 3	6.614 (3.707)	12.558 (2.859)	5.943 (2.967)	1.337 (2.210)	4.607 (2.432)
Income Quintile 4	14.190 (4.233)	18.097 (3.265)	3.907 (3.389)	1.665 (2.524)	5.572 (2.777)
Income Quintile 5	16.958 (4.788)	25.445 (3.693)	8.487 (3.833)	2.415 (2.854)	6.072 (3.141)
Constant	92.288 (6.572)	22.339 (5.069)	69.949 (5.261)	37.470 (3.918)	32.479 (4.311)
Observations	452	452	452	452	452
R ²	0.126	0.296	0.159	0.129	0.138
Adjusted R ²	0.094	0.270	0.128	0.097	0.106
Residual Std. Error (df = 435)	748.417	577.287	599.077	446.185	490.966
F Statistic (df = 16; 435)	3.931	11.405	5.154	4.025	4.357

Note: p<0.1; p<0.05; p<0.01

Table 13: Robustness Check - Households without infants, individual level

	Dependent variable: Mothers' working hours					Dependent variable: Fathers' working hours				
	Work Total	Paid Work	Unpaid Work	Unpaid Work: Childcare	Unpaid Work: Household	Work Total	Paid Work	Unpaid Work	Unpaid Work: Childcare	Unpaid Work: Household
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Childcare Hours (Formal)	0.146 (0.078)	0.161 (0.049)	0.307 (0.071)	0.233 (0.051)	0.074 (0.057)	0.057 (0.086)	0.068 (0.065)	0.125 (0.069)	0.125 (0.042)	0.001 (0.052)
Tertiary Education	1.946 (1.977)	0.537 (1.229)	2.484 (1.800)	1.026 (1.301)	3.509 (1.451)	0.496 (2.351)	1.176 (1.770)	0.680 (1.885)	0.678 (1.148)	0.002 (1.429)
Citizenship: EU	8.939 (3.910)	9.004 (2.431)	0.065 (3.559)	0.205 (2.573)	0.270 (2.869)	7.250 (4.072)	8.841 (3.067)	1.591 (3.266)	0.591 (1.988)	1.000 (2.476)
Citizenship: Austria	10.079 (2.745)	6.308 (1.706)	3.771 (2.498)	3.607 (1.806)	0.164 (2.014)	5.933 (2.930)	5.742 (2.206)	0.191 (2.350)	1.313 (1.430)	1.504 (1.781)
Above 40 parent	0.391 (1.738)	0.205 (1.081)	0.186 (1.582)	3.101 (1.144)	2.915 (1.275)	0.446 (1.905)	1.342 (1.435)	1.788 (1.528)	2.234 (0.930)	0.446 (1.159)
Share of Household Income	0.151 (0.047)	0.332 (0.029)	0.181 (0.042)	0.047 (0.031)	0.134 (0.034)	0.136 (0.047)	0.205 (0.035)	0.069 (0.038)	0.018 (0.023)	0.051 (0.028)
Children 0-14	1.335 (1.088)	1.402 (0.676)	2.737 (0.990)	0.527 (0.716)	3.264 (0.798)	1.792 (1.211)	0.738 (0.912)	1.054 (0.971)	0.214 (0.591)	1.267 (0.736)
Vienna	3.427 (2.492)	4.038 (1.549)	0.611 (2.269)	1.986 (1.640)	1.375 (1.829)	1.865 (2.693)	4.953 (2.028)	3.088 (2.160)	4.462 (1.315)	1.374 (1.637)
Income Quintile 2	1.943 (2.571)	0.421 (1.599)	1.523 (2.341)	0.730 (1.692)	2.253 (1.887)	2.996 (2.811)	2.599 (2.117)	0.397 (2.255)	0.930 (1.372)	0.533 (1.709)
Income Quintile 3	0.824 (2.373)	3.468 (1.475)	4.292 (2.160)	0.622 (1.561)	3.670 (1.741)	7.303 (2.627)	9.204 (1.978)	1.901 (2.107)	0.822 (1.282)	1.079 (1.597)
Income Quintile 4	0.294 (2.696)	5.231 (1.676)	5.525 (2.454)	2.058 (1.774)	3.467 (1.978)	14.187 (2.966)	13.256 (2.234)	0.931 (2.379)	3.452 (1.448)	2.520 (1.804)
Income Quintile 5	2.224 (2.957)	10.162 (1.838)	7.938 (2.692)	3.280 (1.946)	4.658 (2.169)	14.522 (3.345)	15.090 (2.519)	0.568 (2.683)	1.614 (1.633)	2.182 (2.034)
Constant	49.757 (3.968)	0.945 (2.467)	50.702 (3.612)	24.269 (2.611)	26.433 (2.912)	35.303 (5.327)	7.641 (4.012)	27.661 (4.273)	14.586 (2.601)	13.075 (3.239)
Observations	452	452	452	452	452	452	452	452	452	452
R ²	0.090	0.431	0.201	0.102	0.181	0.109	0.228	0.032	0.084	0.027
Adjusted R ²	0.065	0.416	0.179	0.078	0.159	0.085	0.207	0.005	0.059	0.00003
Residual Std. Error (df = 439)	484.794	301.390	441.327	319.041	355.716	532.355	400.897	426.968	259.915	323.707
F Statistic (df = 12; 439)	3.600	27.752	9.201	4.166	8.096	4.473	10.829	1.198	3.366	0.999

Note: p<0.1; p<0.05; p<0.01

Table 14: Robustness Check - Households without infants, gender time gaps (differences)

	<i>Dependent variable: gender time gaps (differences female - male)</i>				
	Work Total	Paid Work	Unpaid Work	Unpaid Work: carework	Unpaid Work: housework
	(1)	(2)	(3)	(4)	(5)
Childcare Hours (Formal)	0.122 (0.111)	0.076 (0.064)	0.198 (0.100)	0.129 (0.059)	0.070 (0.077)
Male: Tertiary	0.867 (3.374)	0.790 (1.946)	1.658 (3.040)	1.521 (1.788)	3.179 (2.325)
Female: Tertiary	1.705 (3.108)	0.963 (1.793)	0.742 (2.801)	0.055 (1.648)	0.686 (2.142)
Male:Citizenship: EU	4.709 (5.844)	4.144 (3.371)	8.853 (5.265)	3.922 (3.098)	4.931 (4.027)
Male: Citizenship: Austria	1.483 (4.117)	4.256 (2.375)	2.774 (3.710)	1.083 (2.182)	1.690 (2.837)
Female:Citizenship: EU	1.629 (6.138)	2.708 (3.541)	1.079 (5.531)	2.134 (3.254)	1.055 (4.230)
Female: Citizenship: Austria	5.183 (4.220)	2.675 (2.435)	7.858 (3.803)	8.703 (2.237)	0.845 (2.908)
Above 40 parent Male	3.855 (2.786)	0.264 (1.607)	4.120 (2.510)	2.058 (1.477)	2.062 (1.920)
Above 40 parent female	7.892 (2.828)	1.076 (1.632)	6.816 (2.549)	1.711 (1.499)	5.105 (1.949)
Share of Household Income Female	0.296 (0.067)	0.605 (0.038)	0.309 (0.060)	0.099 (0.035)	0.210 (0.046)
Children 0-14	0.248 (1.551)	2.158 (0.895)	1.911 (1.398)	0.336 (0.822)	2.247 (1.069)
Vienna	2.267 (3.550)	0.966 (2.048)	1.300 (3.198)	1.692 (1.882)	0.391 (2.446)
Income Quintile 2	3.811 (3.644)	3.481 (2.102)	0.330 (3.284)	2.537 (1.932)	2.207 (2.511)
Income Quintile 3	8.640 (3.373)	5.833 (1.946)	2.807 (3.040)	0.404 (1.788)	2.404 (2.325)
Income Quintile 4	15.061 (3.853)	7.570 (2.222)	7.491 (3.471)	6.460 (2.042)	1.031 (2.655)
Income Quintile 5	12.511 (4.357)	4.903 (2.514)	7.608 (3.926)	5.619 (2.310)	1.989 (3.003)
Constant	1.653 (5.981)	24.428 (3.450)	26.080 (5.389)	9.474 (3.170)	16.606 (4.122)
Observations	452	452	452	452	452
R ²	0.111	0.428	0.154	0.126	0.117
Adjusted R ²	0.078	0.407	0.123	0.094	0.085
Residual Std. Error (df = 435)	681.114	392.925	613.718	361.037	469.355
F Statistic (df = 16; 435)	3.398	20.321	4.939	3.930	3.606

Note: $p < 0.1$; $p < 0.05$; $p < 0.01$

Table 15: Robustness Check - public vs. private childcare, household level

	<i>Dependent variable: couple's combined working hours (household level)</i>					
	Paid Work	Paid Work	Unpaid Work	Unpaid Work	Unpaid Work:	Unpaid Work:
	(1)	(2)	(3)	(4)	carework	carework
Public Childcare	0.174 (0.081)		0.180 (0.092)		0.251 (0.071)	
Private Childcare		0.064 (0.109)		0.294 (0.123)		0.024 (0.096)
Male: Tertiary	1.990 (2.217)	1.954 (2.232)	2.196 (2.515)	2.796 (2.521)	0.102 (1.951)	0.051 (1.976)
Female: Tertiary	1.151 (2.039)	0.918 (2.045)	0.112 (2.314)	0.784 (2.309)	5.213 (1.794)	5.686 (1.810)
Male: Citizenship: EU	1.377 (3.927)	2.156 (3.945)	9.638 (4.455)	6.994 (4.454)	7.580 (3.455)	5.869 (3.492)
Male: Citizenship: Austria	0.586 (2.891)	1.336 (2.884)	11.208 (3.280)	9.432 (3.257)	6.536 (2.544)	5.136 (2.553)
Female: Citizenship: EU	14.728 (4.114)	14.279 (4.148)	5.730 (4.667)	3.431 (4.684)	4.487 (3.619)	3.251 (3.672)
Female: Citizenship: Austria	13.641 (2.976)	13.545 (2.991)	1.711 (3.376)	0.955 (3.377)	1.751 (2.618)	1.401 (2.647)
Male: above 40 parent	4.344 (1.913)	4.420 (1.919)	1.079 (2.171)	1.199 (2.167)	1.753 (1.683)	1.875 (1.699)
Female: above 40 parent	2.772 (2.132)	2.424 (2.134)	7.672 (2.419)	8.416 (2.409)	8.213 (1.876)	8.837 (1.889)
Female: Share of Household Income	0.059 (0.043)	0.071 (0.043)	0.124 (0.049)	0.144 (0.049)	0.004 (0.038)	0.015 (0.038)
Children 0-14	1.795 (1.058)	1.820 (1.065)	4.533 (1.201)	4.294 (1.202)	2.092 (0.931)	2.044 (0.943)
Infant	1.784 (2.196)	0.790 (1.959)	15.502 (2.492)	16.798 (2.213)	13.126 (1.933)	16.389 (1.734)
Vienna	4.883 (2.254)	4.617 (2.305)	3.417 (2.557)	4.611 (2.602)	5.126 (1.983)	5.215 (2.040)
Income Quintile 2	4.856 (2.396)	4.773 (2.403)	2.125 (2.718)	1.918 (2.714)	3.195 (2.108)	3.353 (2.127)
Income Quintile 3	14.444 (2.342)	14.410 (2.350)	5.919 (2.657)	5.853 (2.653)	2.077 (2.061)	2.136 (2.080)
Income Quintile 4	16.739 (2.604)	16.739 (2.613)	3.288 (2.954)	3.085 (2.950)	6.638 (2.291)	6.703 (2.313)
Income Quintile 5	26.891 (3.026)	27.023 (3.038)	8.469 (3.433)	8.221 (3.430)	1.540 (2.662)	1.474 (2.689)
Constant	29.616 (4.066)	31.592 (4.046)	61.393 (4.613)	61.217 (4.568)	22.881 (3.577)	20.639 (3.581)
Observations	671	671	671	671	671	671
R ²	0.258	0.254	0.235	0.237	0.300	0.287
Adjusted R ²	0.239	0.234	0.215	0.217	0.282	0.268
Residual Std. Error (df = 653)	560.100	561.925	635.442	634.516	492.799	497.405
F Statistic (df = 17; 653)	13.390	13.054	11.768	11.914	16.470	15.458

Note: $p < 0.1$; $p < 0.05$; $p < 0.01$

Table 16: Robustness Check - public vs. private childcare, individual level

	<i>Dependent variable: Mothers' working hours</i>						<i>Dependent variable: Fathers' working hours</i>					
	Paid Work	Paid Work	Unpaid Work	Unpaid Work	Unpaid Work:	Unpaid Work:	Paid Work	Paid Work	Unpaid Work	Unpaid Work	Unpaid Work:	Unpaid Work:
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Public Childcare	0.141 (0.047)		0.178 (0.066)		0.180 (0.052)		0.002 (0.055)		0.020 (0.064)		0.059 (0.038)	
Private Childcare		0.036 (0.064)		0.166 (0.088)		0.033 (0.071)		0.010 (0.073)		0.148 (0.085)		0.002 (0.051)
Tertiary Education	0.761 (1.103)	0.562 (1.112)	0.335 (1.535)	0.282 (1.542)	3.392 (1.222)	3.781 (1.235)	1.641 (1.389)	1.667 (1.398)	1.553 (1.614)	1.876 (1.620)	0.410 (0.967)	0.477 (0.975)
Citizenship: EU	7.232 (2.140)	7.127 (2.160)	2.726 (2.978)	3.436 (2.995)	1.838 (2.372)	2.189 (2.399)	3.885 (2.351)	3.920 (2.348)	1.097 (2.730)	0.782 (2.721)	1.870 (1.636)	1.628 (1.637)
Citizenship: Austria	5.380 (1.620)	5.532 (1.631)	4.394 (2.255)	4.373 (2.261)	4.281 (1.796)	4.152 (1.812)	4.445 (1.824)	4.477 (1.809)	1.762 (2.118)	1.537 (2.096)	0.098 (1.269)	0.205 (1.261)
Above 40 parent	0.130 (1.108)	0.521 (1.108)	1.228 (1.542)	1.961 (1.537)	4.141 (1.228)	4.728 (1.231)	0.408 (1.171)	0.416 (1.169)	2.432 (1.360)	2.481 (1.354)	2.256 (0.815)	2.340 (0.815)
Share of Household Income	0.294 (0.025)	0.303 (0.025)	0.200 (0.035)	0.217 (0.035)	0.047 (0.028)	0.060 (0.028)	0.179 (0.027)	0.179 (0.027)	0.048 (0.032)	0.049 (0.032)	0.0004 (0.019)	0.002 (0.019)
Children 0-14	1.886 (0.617)	1.909 (0.623)	4.258 (0.859)	4.157 (0.863)	1.471 (0.684)	1.451 (0.692)	0.529 (0.721)	0.534 (0.722)	0.108 (0.838)	0.026 (0.837)	0.397 (0.502)	0.404 (0.504)
Infant	2.122 (1.282)	4.132 (1.153)	14.295 (1.784)	16.001 (1.598)	13.190 (1.421)	15.434 (1.280)	4.292 (1.475)	4.297 (1.268)	3.112 (1.713)	2.356 (1.469)	1.163 (1.026)	2.026 (0.884)
Vienna	3.683 (1.306)	3.634 (1.346)	0.778 (1.817)	1.691 (1.866)	1.527 (1.447)	1.829 (1.495)	1.994 (1.521)	2.033 (1.548)	1.652 (1.767)	2.238 (1.794)	3.643 (1.059)	3.625 (1.080)
Income Quintile 2	1.260 (1.406)	1.231 (1.415)	1.018 (1.957)	0.978 (1.962)	1.160 (1.558)	1.198 (1.572)	2.557 (1.623)	2.555 (1.623)	1.062 (1.885)	1.044 (1.881)	2.017 (1.130)	2.022 (1.132)
Income Quintile 3	6.732 (1.378)	6.747 (1.387)	3.754 (1.917)	3.774 (1.923)	1.271 (1.527)	1.252 (1.541)	7.970 (1.600)	7.968 (1.600)	1.998 (1.859)	1.978 (1.854)	0.750 (1.114)	0.762 (1.116)
Income Quintile 4	5.846 (1.521)	5.903 (1.531)	2.228 (2.116)	2.184 (2.123)	2.946 (1.685)	2.917 (1.701)	11.498 (1.765)	11.490 (1.766)	0.985 (2.050)	0.880 (2.046)	3.644 (1.228)	3.658 (1.231)
Income Quintile 5	12.627 (1.702)	12.776 (1.716)	6.213 (2.369)	6.083 (2.379)	0.502 (1.887)	0.572 (1.906)	14.420 (2.036)	14.410 (2.037)	1.362 (2.364)	1.193 (2.361)	2.710 (1.417)	2.686 (1.420)
Constant	1.608 (2.264)	3.489 (2.212)	43.291 (3.150)	41.679 (3.067)	15.366 (2.509)	13.260 (2.457)	13.570 (3.030)	13.542 (2.958)	24.768 (3.519)	25.855 (3.428)	8.671 (2.108)	7.825 (2.063)
Observations	671	671	671	671	671	671	671	671	671	671	671	671
R ²	0.380	0.372	0.300	0.296	0.322	0.310	0.182	0.182	0.024	0.028	0.075	0.071
Adjusted R ²	0.368	0.360	0.286	0.282	0.308	0.296	0.166	0.166	0.005	0.009	0.056	0.053
Residual Std. Error (df = 657)	331.191	333.353	460.864	462.173	367.075	370.267	384.018	384.013	446.007	445.011	267.234	267.729
F Statistic (df = 13; 657)	31.002	29.947	21.645	21.236	23.959	22.680	11.230	11.231	1.237	1.469	4.081	3.880

Note: $p < 0.1$; $p < 0.05$; $p < 0.01$

Table 17: Robustness Check - public vs. private childcare, gender time gaps (differences)

	<i>Dependent variable: gender time gaps (differences female - male)</i>					
	Paid Work	Paid Work	Unpaid Work	Unpaid Work	Unpaid Work: carework	Unpaid Work: carework
	(1)	(2)	(3)	(4)	(5)	(6)
Public Childcare	0.105 (0.063)		0.238 (0.092)		0.146 (0.058)	
Private Childcare		0.006 (0.084)		0.003 (0.124)		0.014 (0.078)
Male: Tertiary	1.351 (1.721)	1.294 (1.731)	1.735 (2.523)	1.635 (2.545)	0.357 (1.591)	0.268 (1.605)
Female: Tertiary	0.031 (1.583)	0.225 (1.586)	0.845 (2.321)	0.427 (2.331)	1.829 (1.464)	2.104 (1.470)
Male: Citizenship: EU	1.698 (3.049)	1.001 (3.060)	3.992 (4.469)	2.498 (4.497)	2.090 (2.819)	1.095 (2.836)
Male: Citizenship: Austria	2.672 (2.245)	2.096 (2.237)	4.048 (3.291)	2.790 (3.288)	2.211 (2.075)	1.397 (2.073)
Female: Citizenship: EU	0.743 (3.194)	1.240 (3.217)	5.023 (4.682)	6.065 (4.729)	3.826 (2.953)	4.544 (2.982)
Female: Citizenship: Austria	2.441 (2.311)	2.580 (2.320)	4.610 (3.387)	4.895 (3.410)	7.104 (2.136)	7.307 (2.150)
Male: above 40 parent	1.923 (1.486)	1.973 (1.488)	1.039 (2.177)	1.152 (2.188)	0.540 (1.373)	0.611 (1.379)
Female: above 40 parent	0.139 (1.656)	0.396 (1.655)	4.971 (2.427)	4.406 (2.433)	0.477 (1.531)	0.114 (1.534)
Female: Share of Household Income	0.529 (0.034)	0.537 (0.034)	0.261 (0.049)	0.278 (0.049)	0.091 (0.031)	0.102 (0.031)
Children 0-14	2.461 (0.822)	2.444 (0.826)	4.518 (1.205)	4.490 (1.214)	1.271 (0.760)	1.243 (0.765)
Infant	5.337 (1.705)	6.727 (1.520)	11.518 (2.500)	14.714 (2.234)	12.186 (1.577)	14.080 (1.409)
Vienna	2.724 (1.750)	2.743 (1.787)	0.384 (2.565)	0.364 (2.627)	0.737 (1.618)	0.684 (1.657)
Income Quintile 2	1.795 (1.860)	1.860 (1.864)	1.080 (2.726)	0.938 (2.740)	1.723 (1.720)	1.632 (1.728)
Income Quintile 3	1.083 (1.819)	1.107 (1.822)	2.452 (2.665)	2.398 (2.679)	0.037 (1.681)	0.071 (1.689)
Income Quintile 4	5.107 (2.022)	5.131 (2.027)	2.613 (2.963)	2.567 (2.979)	1.365 (1.869)	1.328 (1.878)
Income Quintile 5	1.995 (2.350)	1.962 (2.356)	5.007 (3.444)	5.097 (3.464)	2.752 (2.172)	2.790 (2.184)
Constant	26.324 (3.157)	25.357 (3.138)	18.377 (4.627)	16.114 (4.612)	3.961 (2.918)	2.660 (2.908)
Observations	671	671	671	671	671	671
R ²	0.360	0.358	0.176	0.168	0.223	0.216
Adjusted R ²	0.344	0.341	0.154	0.146	0.203	0.195
Residual Std. Error (df = 653)	434.901	435.831	637.408	640.644	402.025	403.932
F Statistic (df = 17; 653)	21.647	21.391	8.201	7.731	11.024	10.558

Note: $p < 0.1$; $p < 0.05$; $p < 0.01$

Table 18: Robustness Check - Quantile Regressions

	<i>Dependent variable: gender time gaps (differences female - male)</i>				
	Work Total	Paid Work	Unpaid Work	Unpaid Work: carework	Unpaid Work: housework
	(1)	(2)	(3)	(4)	(5)
Childcare Hours (Formal)	0.127 (0.122)	0.123 (0.062)	0.279 (0.112)	0.195 (0.078)	0.069 (0.078)
Male: Tertiary	2.768 (3.061)	1.280 (1.470)	1.132 (2.418)	1.431 (1.937)	0.784 (2.064)
Female: Tertiary	2.526 (2.726)	0.687 (1.379)	1.771 (2.643)	1.220 (1.924)	4.384 (2.062)
Male: Citizenship: EU	4.845 (6.163)	5.185 (2.443)	7.770 (4.525)	1.384 (3.932)	5.977 (3.202)
Male: Citizenship: Austria	0.548 (4.045)	4.773 (1.412)	5.864 (3.943)	0.015 (2.263)	2.823 (2.477)
Female: Citizenship: EU	5.856 (8.509)	5.872 (3.102)	0.914 (5.773)	3.922 (3.986)	5.948 (3.832)
Female: Citizenship: Austria	1.976 (6.260)	1.364 (1.590)	1.512 (5.466)	7.293 (2.029)	4.088 (3.414)
Male: above 40 parent	0.951 (2.803)	1.849 (1.022)	1.228 (2.149)	1.085 (1.861)	1.198 (1.962)
Female: above 40 parent	7.786 (2.866)	1.209 (1.110)	2.942 (3.117)	1.127 (1.889)	3.736 (2.034)
Female: Share of Household Income	0.350 (0.071)	0.580 (0.040)	0.146 (0.068)	0.111 (0.042)	0.151 (0.050)
Children 0-14	1.987 (1.877)	0.699 (0.841)	6.305 (1.608)	1.693 (1.053)	3.289 (1.350)
Infant	8.027 (3.567)	3.114 (2.481)	11.873 (3.107)	11.207 (2.425)	2.886 (2.269)
Vienna	0.489 (4.863)	1.023 (2.248)	0.822 (2.784)	1.405 (1.905)	1.696 (3.197)
Income Quintile 2	4.834 (3.714)	5.286 (1.924)	1.443 (3.798)	0.628 (2.362)	2.683 (3.027)
Income Quintile 3	6.663 (3.478)	3.079 (1.629)	6.489 (2.695)	1.630 (2.413)	3.551 (3.049)
Income Quintile 4	10.067 (3.853)	4.060 (2.267)	5.185 (3.095)	0.757 (2.648)	3.448 (3.314)
Income Quintile 5	13.345 (4.317)	3.429 (1.924)	10.202 (4.083)	2.585 (2.880)	4.579 (3.183)
Constant	8.119 (7.357)	32.966 (2.553)	18.098 (6.370)	6.570 (3.559)	19.506 (4.775)
Observations	671	671	671	671	671

Note: $p < 0.1$; $p < 0.05$; $p < 0.01$

