Why the cost of parenthood is not reducible to the cost of motherhood?

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ABSTRACT: Parents contribute many more intergenerational resource transfers over the course of their working lives than non-parents in Europe. But is this seeming parenthood gap in reality just a motherhood gap? To explore this question, we use National Transfer/Time Transfer Accounts to compare the net transfer burdens of fathers, non-fathers, mothers and non-mothers, for three transfer types (public, private money, private time) in 12 EU countries. We find that parenthood is not reducible to motherhood. The gap between mothers and non-mothers is not larger than between fathers and non-fathers. What sharply distinguishes fathers and mothers in the statistically less visible family realm is not their overall transfer burden but its composition: fathers mainly contribute money, mothers mainly contribute time. The double novelty of NTA and NTTA methodology does justice to parents of both genders: measuring intrafamilial money transfers makes fathers' contributions more completely visible; incorporating the realm of unpaid labor does the same with mothers. Shining a wider light on the hidden contributions of mothers and fathers reveals how costly parenthood really is in contemporary Europe.

Introduction

Three main types of resources are transferred between generations at any point in time: public transfers (the state realm), and private transfers of money and time (the family realm). Vanhuysse, Medgyesi, and Gál (2023) demonstrate that it is not states but families (specifically, parents) who bear the lion's share of rearing children. Parents pay a significant price for this. Compared to non-parents, parents contribute on average 2.7 times more resources over the course of their working lives in Europe. However, it is conceivable that this parenthood gap might actually be reducible to a motherhood gap. That is, parent/non-parent differences may be larger between non-mothers and mothers than between non-fathers and fathers. If that were true, the seeming parent/non-parent imbalance reported by Vanhuysse et al. (2023) would, in fact, prove to be a gender imbalance.

Several authors have suggested that parenthood involves high costs. Adda, Dustmann, and Stevens (2017) decompose the lifecycle career cost of children into loss of skills during career interruptions, lost earning opportunities, and selection into more child-friendly occupations. But there is an important gender component to the lifecycle costs of parenthood. As a result of evolved cultural norms and asymmetric power dynamics in gender bargaining at the micro and macro level, all three factors above may affect mothers more strongly than fathers (Burggraf 1997; Folbre 2006, 2020; Glauber 2018; Orloff 1993).

Is the alleged parenthood effect in intergenerational resource transfers in reality just a motherhood effect? To explore this question, this paper uses harmonized European Household Budget Surveys (HBS), European Union Statistics on Income and Living Conditions (EU-SILC) for the baseline year 2010, and the 1st wave of the Harmonized European Time Use Survey (HETUS). We split parents into mothers and fathers and non-parents into non-mothers and non-fathers. First, we compare in cross-section the net resource transfer burdens of fathers to those of non-fathers, and those of mothers to those of non-mothers.[1] Next, in a flows-to-stock

[1] We deliberately focus our comparisons on parenthood status instead of gender for two reasons. First, the sensitivity of the measurement of various transfer types increases with the degree of invisibility. Visibility depends on the nature of the bond linking the people involved. Public institutions pool the social risks of large groups whose members do not personally know each other. The transfers flow between people connected by contractual relations enforceable by law. The value of transfers is set by market forces or regulation. Therefore, the actors know the transfer values and register them in their books either on both ends of the transaction or unilaterally. Public transfers leave traces, making measurement and data collection relatively easy. In the case of what we call invisible transfers, one or both of these conditions are not met. The cooperation of the actors, most frequently family members, is regulated by customs and social norms, the violation of which is less observable and not enforceable by law and therefore not registered by the actors. In the case of time transfers, they cannot even be measured

analysis, we calculate the present values of the transfer burdens over the working lives of these four groups and compare their transfer packages.

Data, definitions, methods

Sociologically, the concepts of 'parent' and 'child' are not unambiguous. Contemporary societies contain a large variety of households in terms of membership and degrees of parenting cooperation within and between them, including joint parenting by divorced or separated biological parents, step-parenthood, and foster-parenthood of non-orphaned children. Moreover, unlike parenthood, being a child in the everyday use of the word reflects both a section of the lifecycle and a relationship. As people grow up, they cease to be children in the sense of being resource-dependent, but they remain someone's child biologically and culturally. Transfers related to child-raising go through numerous channels and take various forms, such as public transfers mediated by the government, familial money transfers of cash and market goods, and transfers of the value of unpaid household labor, or time in short. These terms also need clarification. Below we therefore discuss the conceptual choices made.

Who is a parent? Who is a child?

As this study focuses on the transfer costs of parenthood and mother/fatherhood, it applies definitions that concentrate on dependence and transfers in terms of material resources - money (including commodities purchased in the market) and time. Neither HBS nor EU-SILC contains information on the total number of children a person has. Instead, we exploit the data provided by the household rosters that reveal parent-child relations among cohabiting persons. In other words, we study transfers by 'under-the-roof' parents to 'under-the-roof' children. Our emphasis is not on 'real-life parents' but rather on 'parent*hood'*: the stage of life in which real-life parents live together with dependent children under the same roof and support them.

One consequence of this cohabitation-based definition is that the parenthood status is time-variant: it changes by age. The number of children increases as they are born one after the other, and then it decreases as parents separate or divorce or as children grow up and move out. Just around the age when Europeans in our study reach old age in the sense of becoming net resource-dependent again, the cell frequency of parents drops in survey samples. Beyond this age, there are hardly any parents left by the cohabitation-based definition. This limits the comparison of parents and non-parents to their working age.[2]

Our cohabitation-based definition allows us to capture non-biological parenthood: parenthood status is self-declared, and the coding instructions of the questionnaires accept non-biological parents as parents. Also, cohabitation does not necessarily mean *de facto* living together. For instance, young adults may study elsewhere but still be regularly supported by their parents: our questionnaires code such an occurrence as cohabitation. The cohabitation-based definition does not separate real-life parents from real-life childless people. Rather, it separates 'under-the-roof' parents, biological or otherwise, from anyone else.[3] While this has limitations, it does allow a near-complete and almost unhindered analysis of the transfer cost

directly because the subject of the transfer is not evaluated in the market. Either way, these transfers are difficult to collect information about.

[2] Dependent children are omitted from the comparison because they are neither parents nor non-parents.

[3] The everyday meaning of childlessness is not the same as non-parenthood in our definition. This definition excludes many other 'parents' in the term's everyday use. A biological parent is coded as a non-parent if he or she moves out of the house due to separation or divorce or if his or her children moved out. This makes non-parents in our calculations significantly more numerous and, as a group, more heterogeneous. It also makes the comparison of real-life social groups, such as large families of low socioeconomic status with three and more children and high earning families with one or two children, more difficult.

of parenthood because, as we demonstrate below, parental and non-parental transfers can be separated with a high degree of certainty using the cohabitation-based definition of parenthood[4]

Public transfers

Public transfers include all taxes, social contributions, and other forms of public revenues collected, and all cash benefits, in-kind services and public goods paid for by what public statistics call 'the general government': the central government (at both levels in federal polities), social security funds, and other public funds as well as local governments. Based on household survey information, we distribute these amounts by age, covering the entire population, including those who do not pay a particular form of revenue or receive a particular form of benefit or service. The resulting age profiles are adjusted to the aggregates of the System of National Accounts (SNA), assuring that the entire public sector and the entire population are covered. In several instances, drawing the age profiles of public revenues and benefits is straightforward. In other cases, the exercise requires assumptions. We generally follow the methodological standards of National Transfer Accounts (hereafter NTA), a recent development in national accounting specifically designed to capture age-related economic and social issues in a comprehensive and consistent way.[5] On the method for constructing age profiles of net public transfers, see Appendix A.

Familial money transfers

Since the public transfer system discussed above connects large aggregates of people, their transactions are near-fully recorded and visible in national statistics. But resource transfers happen within and between families too, both of money and of time. Neither of these types of familial resources are recorded: therefore they are invisible for the statistical system. Here is where the NTA method embodies an important novelty. In addition to public transfers, NTA also models familial *money* transfers. The latter consist of both financial resources and commodities bought in the market. Whereas standard national accounting treats households as black boxes, leaving intra-household transactions unmentioned, NTA thus offers information on one important further element needed to more completely describe parent/non-parent differences in intergenerational transfers. Money transfers include, for instance, the food and clothes consumed by children as paid for by their parents, the utilities and other 'household public goods' consumed by all household members, including those who do not contribute to them, or any other components of consumption not supported by the market labor income or asset-based revenues of individuals. Disposable income, consisting of market labor income, asset-based inflows, and public cash transfers, is further redistributed within households (when, for instance, parents spend their earnings on goods and services for their dependent children) and between households (as when pensioners support their adult children).

Intra-household transfers typically do not change hands as a particular act of giving and receiving; in fact, they are typically not even identified as 'transfers' in the everyday meaning of the term. Parents who buy food for their children perceive it as a cost but would not specifically name it a transfer in a questionnaire.[6] Such intra-household money transfers are not

[4] Although the number of multigenerational households is very limited in our sample (just over 2 percent of households), we need to handle the cases of simultaneous childhood and parenthood. A person is a parent if they consider themselves a parent of someone living in the household. A person is a child if either they are younger than age 13 or they are the child of someone living in the household but not someone's parent in the household.

[5] The units of SNA are institutions. It is households, corporations, and the government that have primary income, pay or collect taxes and receive benefits or use public services in the process of secondary redistribution, and consume or save the resulting disposable income. In contrast, the units of NTA are age-groups.

[6] On the other hand, no wealth transfers are discussed here. (Lee et al. 2017) present NTA-based wealth accounts, the Full Generational Accounts, but their conceptual framework is difficult to extend to cover parenthood status.

directly measured, but rather modelled by NTA. The model is based on the observed difference between individual resources (net income from labor, capital and property, public cash transfers received, net private inter-household transfers and the imputed rent emanating from owner-occupied housing) and uses (consumption at market prices and other current transfers paid). The age profiles of resources and uses are adjusted so that the population-weighted aggregates match the aggregates of national accounts. This way, the resulting age profile of intra-household transfers, like that of public transfers, is consistent with the SNA. This guarantees that the calculation covers the entire economy and the entire population. Household members who have a deficit (consume more than their resources would allow) receive transfers from members who have a surplus. A set of sharing rules covering all potential instances of household-level deficits/surpluses define the process and outcome of intra-household redistribution. Surplus members transfer the same share of their excess resources: the procedure sets a household-specific 'transfer-rate' (sometimes called a 'family tax rate') specified by the rate of household-level aggregate deficits and surpluses and applied to the individual surpluses. The household head acts as one of the household members, but they also collect the outstanding surpluses/deficits and save them (outstanding surpluses) or finance them from asset-based revenues or dissaving (outstanding deficits).[7] Not all familial transfers take place within households, but the relative importance of inter-household transfers dwarfs in comparison with intra-household transfers.[8,9]

Familial time transfers

While NTA shines a wider light on intergenerational resource transfers by extending the statistically visible world from public transfers to private money transfers, it does stay within the frontiers of the national economy as reported in SNA. This means that NTA still leaves in the dark, as it were, another major realm of intergenerational resource transfers: that of unpaid household labor. The NTA extension thus remains incomplete: NTA rearranges SNA but does not consider *time* transfers: goods produced, and services provided, by unpaid household labor. To shine a *yet* wider light on the valuable resource transfers that occur between generations, NTA needs to be further extended with National *Time* Transfer Accounts (henceforth NTTA; see (Donehower 2013).

Like NTA, NTTA compares the value of household labor consumed and produced. Here the only vehicle conveying the value in question is the transfer of household labor, or, alternatively, of time. Time is the currency of life (Krueger et al. 2009). It is also key to a more complete understanding of what generations do for each other (Bradbury 2008; Gál, Vanhuysse, and Vargha 2018). While often neglected in intergenerational transfer valuation exercises, there

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The cohabitation-based definition of parenthood is sufficient to capture current flows since they exclude only a tiny fragment, about five percent, of private transfers exchanged between households. However, a significant part of wealth transfers changes hands between non-cohabiting people.

[7] We are grateful to Gretchen Donehower for sharing her script modeling intra-household transfers. For further technical details, see (Istenič et al. 2017; United Nations 2013).

[8] Redistribution through public channels mobilizes 46 percent of net national income in our 12-country sample. Familial transfers represent another 24 percentage points of net national income - and they are nearly exclusively exchanged within the household (23 percentage points).

[9] Since neither the income surveys nor the consumption surveys include information about the providers or recipients of inter-household transfers, they cannot be included in the calculations. Inter-household transfers are predominantly provided by separated/divorced biological parents or by grandparents. Since grandparental support and services are also familial intergenerational transfers, excluding the inter-household transfers biases our results in a conservative way. If inter-household transfers were included, the parental transfer packages we estimate below would be even larger. Note also that the source of a familial transfer can be a public transfer. For example, unemployed parents use their benefits to support their children. However, such a transaction represents an offsetting effect. The public benefit received diminishes the net transfer burden of the parent but transferring the resources further to other family members cancels out this decrease.

is a growing sociological understanding of the importance of, and the changing patterns in, the time devoted to family duties and other household labor (Bradbury 2008; Doepke and Zilibotti 2019; Goodin et al. 2008; Guryan, Hurst, and Kearney 2008).

By including time transfers, we go beyond the frontiers of national accounting and NTA. The methodology (Donehower 2013; United Nations 2023) follows, and extends whenever necessary, the methods developed for Household Satellite Accounts ((European Communities 2003). The estimation is based on time use surveys. As a first step, the time spent on household production activities is identified, and its age profile is drawn. Second, home production is assigned to its actual consumers. Third, the value of time spent in unpaid household labor is evaluated. Net time transfers are calculated as the difference between the values of household labor consumed and provided.

For the calculations, we used HETUS data[10] and adopted the procedure applied by (Vargha, Gál, and Crosby-Nagy 2017).[11] Unlike the data sources used to construct the age profiles of public and private money transfers, HETUS data were not released as a micro-dataset but as a set of multidimensional tables. These tables offer details about the time spent on an average day and allow us to distinguish between altogether 20 distinct work activities. These included food preparation, dishwashing, cleaning, laundry, gardening, construction and repairs; shopping and services, supervision and teaching, reading, or talking with a child, transporting a child, and many more (see Appendix B). However, they included only limited data about the respondents (gender and age) and their households.[12] We therefore imputed our time data to the EU-SILC sample based on similarities of the household and demographic variables (for the complete household taxonomy used, see Appendix B). The 20 distinct activities were grouped into two summary categories: childcare (including activities that can be performed only for children) and housework (all other activities). The distribution of time among consumers followed this classification rule: childcare was assigned to children, and general housework was distributed equally among all household members.

Assigning monetary values to unpaid household labor (pricing it) is difficult precisely because it is unpaid: there is no market mechanism to make the evaluation.[13] When applying observable market prices to unpaid household labor, it is not obvious whose wage should be considered: the wage of the person who is doing the household work (opportunity cost approach) or that of the person whose job is done (specialist replacement wage approach). Following the NTTA-standard, we applied the latter. Since most household activities require basic or no skills, the opportunity cost approach assigns a higher value to household labor, particularly tasks done by men, than the replacement wage approach. For the same reason, applying economy-average wages to household labor would overprice it. So, following (Vargha et al. 2017), we matched the 20 household activities with occupation categories of the International Standard Classification of Occupations, assigned minute wages to them by using data from the 2002 wave of the Structure of Earnings Survey (SES), and adjusted them with the average wage growth between the survey year and our base year.

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[10] See them at https://ec.europa.eu/eurostat/web/time-use-surveys. We use the first round of the survey (1998-2006) and assume that it sufficiently represents the use of time in our base year, 2010.

[11] Raw tables and all background information can be openly accessed as an additional file at https://www.demographic-research.org/volumes/vol36/32/default.htm.

[12] No information was available on household size, the age of other household members, or familial relationships. We only know whether a childless household consists of one or more persons, and, if children live in the household, the number of children aged 0-6, the number of children age 7-17, and the exact age of the youngest child. This information suffices for constructing the age profiles of household production, but not for a time transfer analysis. The consumer of the output of household labor cannot be found in this way.

[13] The problem is yet more intractable. Most types of care work, for instance, even when paid, do not yield standardized commodities that are easily substitutable and their true value cannot easily be captured (Folbre 2008, 2020).

Cross-sectional analysis: the relative costs of fatherhood and motherhood

Figure 1 shows the cross-sectional age profiles of, respectively, public, familial money and familial time transfers in net terms (transfers received less transfers provided) separately for fathers and non-fathers. Figure 2 does the same for mothers and non-mothers. These figures condense information about our 12 European countries. As the aggregation requires re-scaling of the national age profiles, following NTA standards, we use the average market labor income of 30-49-year-olds (irrespective of parenthood status and including those who do not work), as presented on the vertical axes of Figure 1. The horizontal axes represent ages in cross-section. For the reasons discussed above, the charts are limited to to age groups that are net transfer providers. Since the focus of this study is transfers, we use the net transfer curves to separate lifecycles stages (childhood, working-age, old age). Accordingly, people become net transfer providers, all three types of transfers combined, at age 25 and remain in this position till age 61 in the 12-country sample. Cross-country variation is slight: the entry age is 24-25 in all countries except Bulgaria (26) and Spain (27), the exit age is 61-62 except in Poland (58), the UK (63), and Sweden (64).

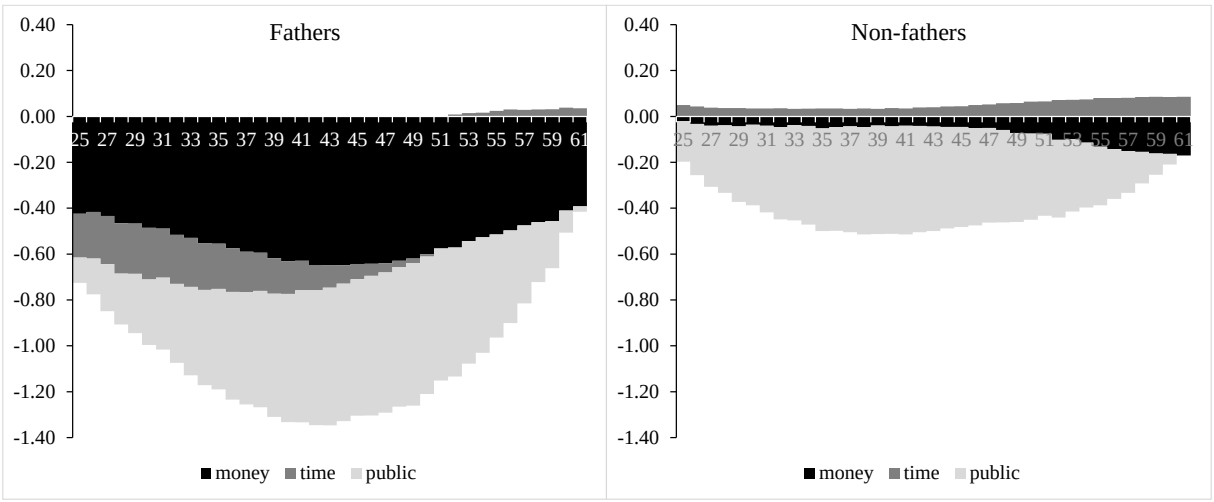

Figure 1. The relative cost of fatherhood: combined transfer packages of men by parenthood status and age

Source: Authors' calculation.

Note: Color code: familial, money; time; public.

Figure 1 shows that under-the-roof fathers contribute more, and in some transfer types many more, transfers than non-fathers. Fathers even pay more public transfers, although the difference is not large, and they pay them at higher ages than non-fathers. But the real father/non-father differences appear in transfers in the family realm that remain unobservable in public statistics and that are largely unrecognized by eligibility rules of public health care or pension systems: time transfers and, especially, money transfers. Non-fathers are net beneficiaries of time transfers in all age groups; their net receipt of time transfers practically mirrors their net donation of money transfers. All in all, non-fathers' intra-household familial transfers are practically zero in all ages. In contrast, fathers pay significant money transfers that support the consumption of both mothers and children. Fathers also contribute net time transfers while their children are small. But they become minor net beneficiaries of this type of transfer in their 50s.

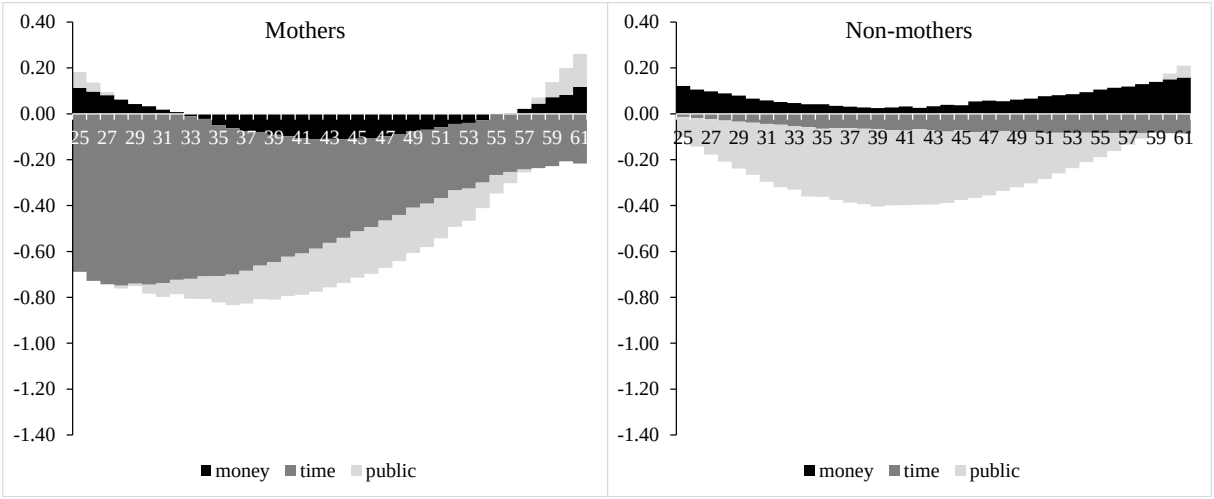

Figure 2. The relative cost of motherhood: Combined transfer packages of women by parenthood status and age

Source: Authors' calculation.

Note: Color code: familial, money time public .

Figure 2 shows that the difference between the transfer packages of mothers and non-mothers is smaller than between fathers and non-fathers. The composition of the packages is also different. While fathers pay more public transfers than non-fathers, here we see that, mothers pay fewer public transfers than non-mothers. In contrast, mothers' private transfers are significantly larger. In a mirror image of non-fathers, non-mothers contribute minor time transfers but are net recipients of money transfers. Their time transfers also practically cancel out their money transfers, making the net resource contributions of non-mothers almost exclusively public at all ages. In contrast, mothers' contributions are mostly invisible – the family realm – and, within that, mostly in terms of time.

The high overall burden on parents relative to non-parents, reported by Gál et al. (2022), is shown here not to be just a higher burden on mothers.[14] The gap between mothers and non-mothers is not larger than the gap between fathers and non-fathers. What sharply distinguishes fathers and mothers in the family realm is not their overall familial transfer burden but its composition: fathers mainly contribute money (and a lot of it), mothers mainly contribute time (and still more of it).

Our analysis shows why valuing unpaid household labor by extending NTA-based calculations with an NTTA exercise is essential to more completely (though not fully) reveal the extent of mothers' contributions. At the same time, the double novelty of NTA methodology does justice to parents of *both* genders: measuring intrafamilial money transfers makes fathers' contributions more completely visible; incorporating the realm of unpaid labor does the same with mothers. A similar gender pattern appears among non-parents.

Flows-to-stock analysis: The working-lifetime costs of fatherhood and motherhood

[14] This key finding is quite robust. However, the cross-gender differences would respond more strongly to the changes in the assumptions. For instance, if we were to apply a single average wage for the economy in the monetary valuation of unpaid labor, instead of the multiple activity-specific wages we have used, the mother/father gap would diminish or even disappear. But for the same reason, the parent/non-parent gaps would grow even larger than those reported above.

Cross-sectional age profiles such as those reported in Figures 1 and 2 are frequently used to construct stylized lifecourses by assuming that current age-specific characteristics in higher ages will apply to the current young when they grow older. For instance, a current 20-year-old is assumed to have the same characteristics 20 years from now as a current 40-year-old and so on. Some key indicators of social sciences are based on such stylized lifecourses, such as the total fertility rate, an indicator of assumed lifetime fertility derived from period age-specific fertilities; or the period life expectancy at birth, which would be the average length of life of the newborn cohort should they go through the current period age-specific mortality patterns over their lifecourse.[15] The period-to-longitudinal (and within it, the flows-to-stock) methodology represents a stylized future scenario to assess what would happen if the age profiles remained unchanged in the future. Obviously, they cannot accurately forecast the future because the conditions under which the cross-sectional distribution properly represents the life-course distribution are restrictive. The lifetime patterns of the currently young can significantly deviate from what today's period age profiles describe. In addition, in the case of flows-to-stock methodology, the choice of the parameters used to calculate present values, such as the growth and discount rates, strongly affect the outcome. Note, however, that the *ratio* between the two stocks is essentially stable because the effects of parameter change mostly cancel out by dividing one present value by the other.

Applying a similar flows-to-stock procedure, we use the period age profiles presented in Figures 1 and 2 as stylized working-lifecourses by parenthood status and gender. The profiles are adjusted with parameter values for economic growth (1.5 percent annually), mortality (Eurostat *demo_mlifetable_px* table), and a discount rate (5 percent). We calculate the present values of the expected future net transfers by transfer type. All numbers in the tables are present values of net transfers, standardized in terms of the time-discounted average annual labor income of the 30-49-year-old cohort. So, for example, the value of 1.0 in the third (familial, time) panel of Table 1 shows that, over their working lives, non-fathers are net recipients of time transfers worth one year of average discounted prime-age labor income during their net-provider (or working) age. Accordingly, the denominator refers to an indicator of the market economy, whereas the numerators include items both from the market economy and the realm of unpaid labor.

[15] A special case of this period-to-longitudinal methodology is applied to assess the value of stocks accumulating over time. For instance, the cross-sectional age profile of savings can be used to approximate the accumulating wealth (Bommier and Lee 2003; Lee 1994; Willis 1988). Similarly, estimates of the present values of future flows of respectively social security contributions and benefits are derived from period age profiles and applied in the formula to balance the social security system ((Settergren and Mikula 2006).

Table 1. Flow-to-stock analysis: resource contributions by gender and parenthood status for three types of resource transfers (public, private money, private time)

Public

	parent	non-parent	
women	-1.9	-4.8	-2.9
men	-8.4	-7.4	-8.2
	-4.8	-6.2	-5.4

Familial, money

	parent	non-parent	
women	-1.2	1.4	0.2
men	-11.2	-1.2	-6.7
	-5.0	0.1	-3.1

Familial, time

	parent	non-parent	
women	-11.6	-1.2	-7.6
men	-2.7	1.0	-0.8
	-7.9	0.0	-4.4

Table 1 gives the various transfers for the four groups discussed here: fathers and non-fathers, and mothers and non-mothers. The marginals are weighted averages by gender and parenthood status.[16] A number of key observations stand out. Gál et al's (2022) key finding on the high cost of parenthood over the working life is corroborated by looking at the marginals at the bottom of the three panels. Both genders combined, parents in Europe contribute somewhat fewer public transfers than non-parents (4.8 vs 6.2 years of prime age labor), but in addition, parents, and only parents, contribute still larger amounts of money transfers (5.0 years) and time transfers (7.9 years). But once we further distinguish (non-)parenthood into (non-)fatherhood and (non-)motherhood, we see that fathers and mothers both contribute much more than their counterparts. The working-lifetime transfer burden of fathers is larger than that of non-fathers in each transfer category. The father/non-father gap is larger by a small margin (one year of prime age labor income) in public transfers, and by a larger margin (3.7 years) in time transfers. But there is a huge father/non-father gap of ten years (11.2-1.2) in familial money transfers.

Lastly, the working lifetime transfers picture is different for mothers and non-mothers. Non-mothers provide more public transfers than mothers by about 2.9 (4.8-1.9) years of prime age labor income; but this is almost fully compensated (2.6 years) by money transfers, which mothers contribute more than non-mothers. The real difference (10.4 years) between mothers and non-mothers lies in their provision of time transfers. This mother/non-mother gap in time transfers is comparable to, but still larger than, the father/non-father gap in money transfers.

[16] Like Figures 1 and 2, Table 1 excludes children, both those of childhood ages and those of working age who live with someone they call parent, and who are not parents themselves. If children were to be added to non-parents, they would further widen the parent versus non-parent gap because children, even at working age, are net recipients of transfers (up to age 53).

Conclusions: better valuing what mothers *and* fathers do

When it comes to intergenerational resource contributions of public transfers, private time and private money over the working life, parenthood matters – and costs - enormously. Parents contribute much more than non-parents over their working life in Europe (Gál et al. 2022). But here we show that parenthood in turn is not simply reducible to motherhood. The gap between the burdens of mothers and non-mothers is not larger than between those of fathers and non-fathers. Alternatively viewed, fathers contribute at least as much as mothers in terms of overall transfers. Overall, the largest difference in resource contributions is between parents and non-parents. In the family realm, gender status informs about the type of invisible transfers provided; parenthood status informs about their magnitude. What sharply distinguishes fathers and mothers in the family realm is not their overall transfer burden but its composition: fathers mainly contribute money, mothers mainly contribute time.

Current methods both of measuring and valuing paid and at-home care work and of distributing consumption among household members may hide inequalities to the detriment of women (Folbre 2020; World Bank 2018). Yet our findings indicate that gender imbalances may not be, first and foremost, about resource consumption or production, but rather reflect deeper asymmetries in property rights, eligibilities, and valuation of different types of societally valuable contributions, and therefore, ultimately, in societal norms and power relations. A Taj Mahal-like monument could not have been erected by a widow, however rich and caring, to honor her deceased *husband*.[17] For a host of sociological and political economy reasons that provide stringent macro-institutional and macro-structural constraints on individual-level preferences, women still record generally lower labor market participation rates, total working hours, and hourly wages than men (e.g., (Goldin 2021). Gender inequalities in all three of these components of earning inequalities tend to increase after parenthood, which suggests that unpaid care work plays a key role (Andrew et al. 2021). The third component, lower wages, in part results from women's higher concentration in lower-paying occupations, often in caring work (e.g., (England 2010; England, Budig, and Folbre 2002; Folbre 2020; Iversen and McCall Rosenbluth 2010). Care sector penalties and motherhood penalties, while ever-evolving and public policy supply-dependent, remain deeply entrenched (Budig and England 2001; Glauber 2018; Goldin 2021). The work of carers, mostly mothers, in reproducing society over time is both endemically undervalued and imperfectly accounted for.[18]

Better accounting, by more comprehensively valuing all types of productive work, matters crucially not just for equity reasons but also for the efficient allocation of human capabilities to different types of work. Yet shining a wider light on what working-age adults contribute also inside the family indicates that the source of father-mother inequity is not primarily in how much genders contribute, but may instead reflect how their respective contributions are valued. What fathers contribute is largely measured, societally valued, and protected by contracts and property rights; what mothers contribute, especially at home, in reproducing society by rearing the next generation largely is not (Burggraf 1997; Folbre 2020). This tilts intra-household power relations, even when anti-discrimination laws are in place and

[17] Shah Jahan erected the Taj Mahal to commemorate his wife Mumtaz Mahal after she died young. Mumtaz probably did not consume less than the Shah or provide more for him. Yet if the Shah had died first, Mumtaz would not have been able to have a similar monument erected, since she did not have the rights and power to do so.

[18] See e.g., (Burggraf 1997), (England and Folbre 1999a, 1999b), (Folbre 2001, 2008, 2020). In one of many striking illustrations, (Folbre 2020) notes that the compensation received by families of female victims of the 9/11 attacks was significantly lower than that received by families of male victims, as precedents in tort law were followed that emphasized the value of victims' predicted future earnings.

the legal standing of genders is equal, including the right to inherit or receive education (Folbre 2006; Goldin 2021; Iversen and McCall Rosenbluth 2010). While revealing as an accounting framework, NTA is not prepared to capture the deeper nature of these gendered power imbalances. For instance, our replacement wage method used the comparatively low market valuation of paid care work. But it still undervalues at-home care work, and hence undervalue the contributions, specifically, of mothers.

Instead of focusing on the well-documented gender aspect we have instead highlighted a less documented asymmetry: that between parents (of either gender) and non-parents. Intergenerational resource transfers of money and time are almost exclusively parental, irrespective of gender and the division of labor between them. The current statistical system (and eligibility rules) leave both types of parental contributions (money and time) largely invisible. Our main findings do justice to parents of *both* genders: measuring intrafamilial money transfers with NTA makes fathers' contributions more completely visible; incorporating the realm of unpaid labor with NTTA does the same with mothers. Shining a wider light on the hidden contributions of both mothers and fathers reveals how costly parenthood truly is in Europe.

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