

First time-series analysis of the value added by unpaid work between 2012 and 2021, Germany

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For the first time, Dr. Christine Rudolf and Dr. Verena Löffler, both economists, have calculated the value added by unpaid care work in Germany between 2012 and 2021. This calculation is based on the Socio-economic Panel (DIW), a commissioned database on median wages in Germany provided by the German Federal Employment Agency, and population data from the German Federal Statistical Office. Specifically, the authors calculated the value added by child care, domestic work, and care for a dependent person in billion euros. They also compared the development of the value added by unpaid work with the GDP in different sectors.

These recent calculations were conducted by the international working group #CloseEconDataGap. **Christine Rudolf**, calculations and analyses, **Verena Löffler**, calculations and analyses, and **Elisabeth Sechser**, communication and data visualization, are part of the #CloseEconDataGap initiative, which aims to uncover economic injustices and close economic data gaps for Germany, Austria, and Switzerland.

We focus on the following topics:

- Visibility of unpaid work performed in the economic sector of “private households”, specifically domestic work, child care, care for dependent persons
- First-time calculations with recent data and yearly time series
- Comparing the value added by unpaid work with national accounts
- Visible changes after managing the pandemic

Households provide three times more care work than the state.

This statement holds true for each sector of unpaid care work. The value added by unpaid care for dependent persons is greater than public expenditure on education and health. The same is true for child care. In addition, the hours spent on domestic tasks do not decrease, while the hours spent in paid work do.

Gross value added of the economic sectors

Developments and comparisons, 2012 - 2021, GERMANY

<https://shorturl.at/5Hj5P>



Private households are a crucial economic sector that contributes significantly to maintaining a high standard of living. This reality has persisted beyond the pandemic and is not a new phenomenon.

The value of unpaid work is determined by the number of hours contributed and the equivalent wages paid in the formal sector. Surprisingly, the added value of unpaid work in all three sectors, including domestic work, child care, and care for the dependent, surpasses the GDP of manufacturing without construction, which is the largest contributor to GDP in the formal sector. It is critical to acknowledge and recognize the importance of unpaid work in our society. The gross value added in the economic sector "Public service providers, education, health" amounted to € 628 billion in 2021, in the manufacturing industry excluding construction € 806 billion and in the economic location "Private households" € 2835 billion.

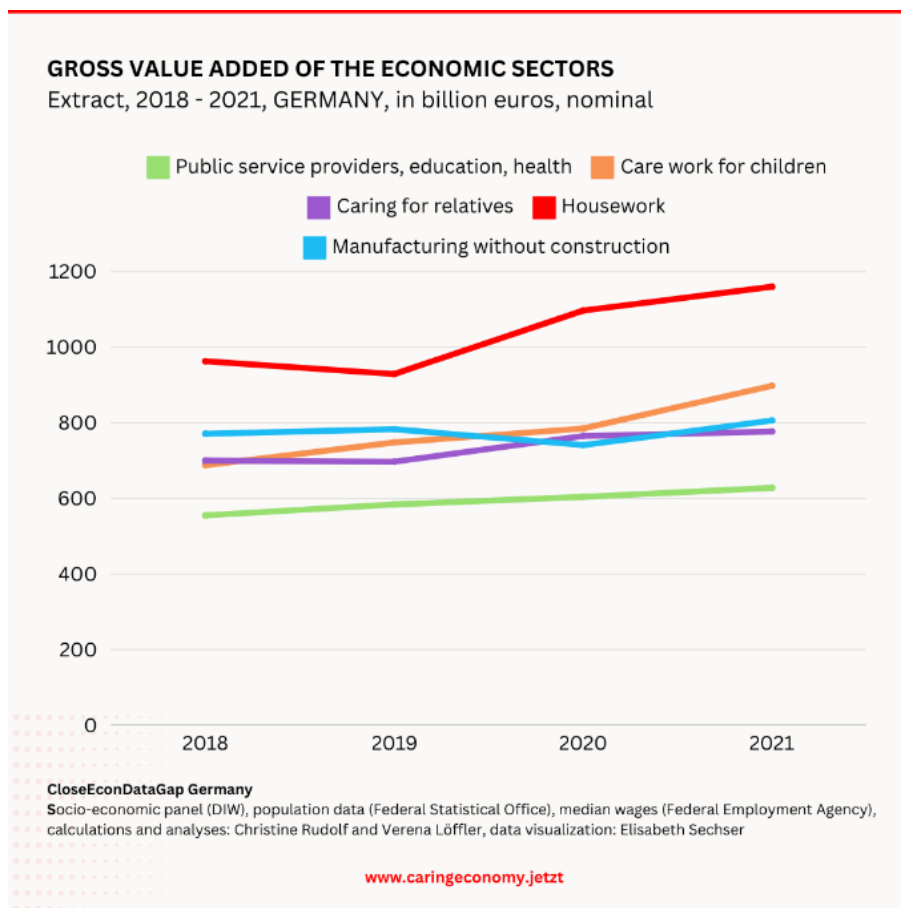
Development in the gross value added by unpaid work and other economic sectors and comparisons between the gross value added of paid and unpaid work in billions of euros.

Gross value added by economic sector in billion €/year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Public service providers, education, health	441	457	476	490	510	534	555	584	604	628
Manufacturing industry without construction	639	641	671	695	732	759	771	783	741	806
Total unpaid work in the "Private households" economic sector	2121	2026	2190	2219	2271	2277	2351	2374	2647	2835
Housework, unpaid	895	849	948	933	915	895	963	929	1097	1160
Care work, unpaid	587	555	591	643	679	705	688	748	785	898
Caring for relatives, unpaid	640	621	652	643	677	677	700	697	765	777

Gross value added of the economic sectors

Extract, 2018 - 2021, GERMANY

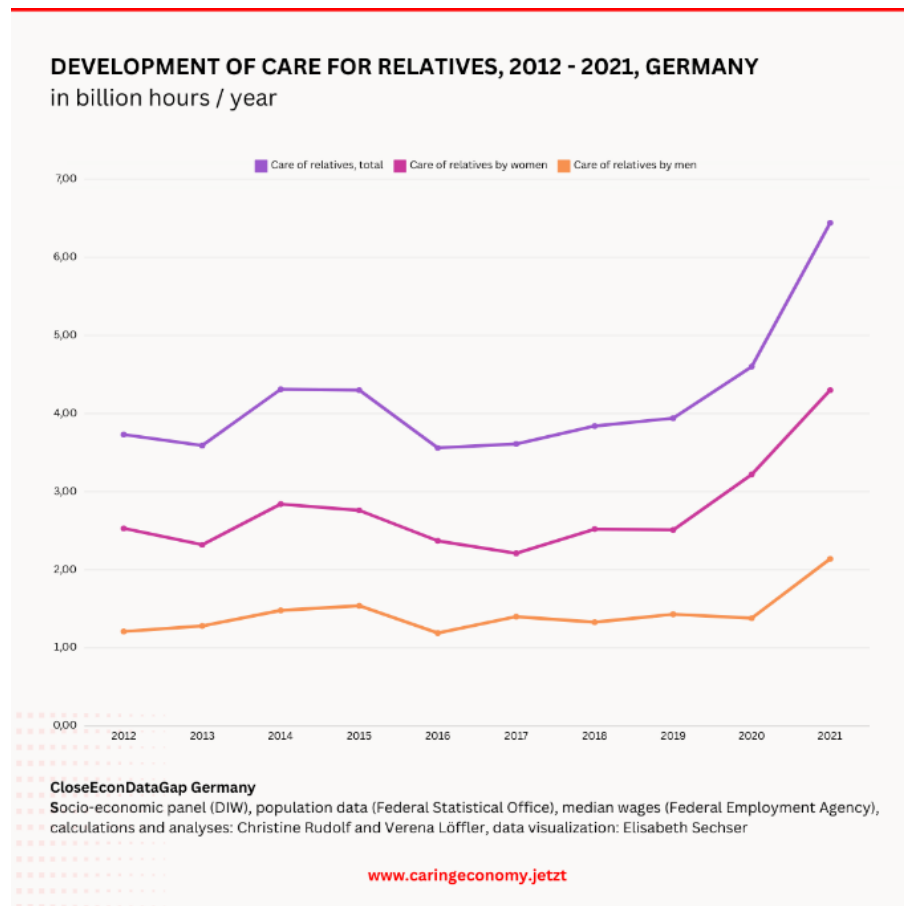
<https://shorturl.at/gtOzy>



Over the years, the amount of time spent caring for dependent persons has significantly increased, which has placed a heavier burden on caring relatives.

Development of care for relatives, 2012 - 2021, GERMANY
in billion hours / year

<https://shorturl.at/oRH92>



There is a sharp increase in the time spent on and value added by caring for relatives. The heavy burden on family caregivers is increasing.

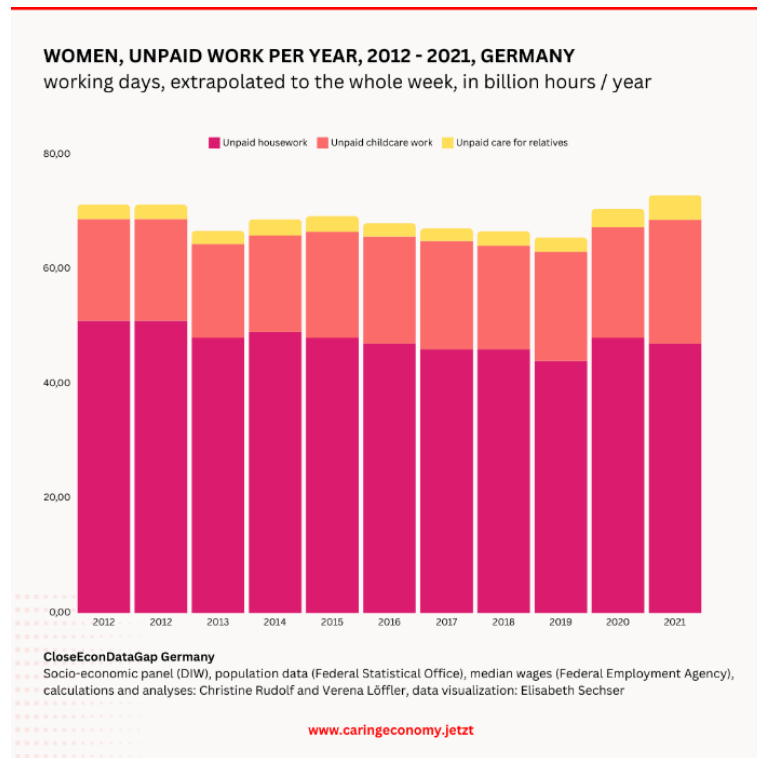
Despite various policy measures aimed at promoting gender equity, there has been little progress in addressing the unequal distribution of unpaid work between men and women.

1. The value added by unpaid work increases continuously.
2. Women continue to do three times more unpaid child care work, and the gender gap has only decreased by one percent.
3. There is no indication that the unequal distribution of unpaid work between men and women has changed.

Women, unpaid work per year, 2012 - 2021, GERMANY

working days, extrapolated to the whole week, in billion hours / year

<https://shorturl.at/Cm1Ep>

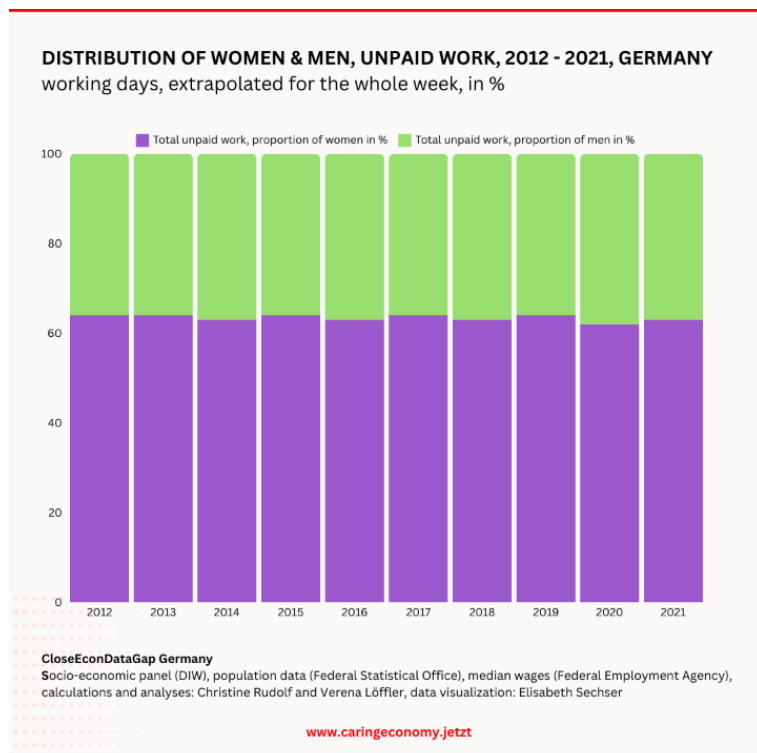


The time spent on unpaid care for relatives by women alone increased from 3.22 billion hours in 2020 to 4.3 billion hours in 2021 - i.e. by around 1.1 billion hours. Calculated in 30-hour-a-week jobs, that would already be over 700,000 jobs.

Distribution of women & men, unpaid work, 2012 - 2021, GERMANY

working days, extrapolated for the whole week, in %

<https://shorturl.at/1t9SE>



All political measures have so far come to nothing, even though men work less and women are paid more.

"Evidence-based empirical research and policy advice, which provide a sound basis for decision-making in politics and public administration, are dependent on a reliable and comprehensive data basis. The German research data infrastructure has improved significantly in some areas but is still lagging behind in international comparison. In order to improve it, statistical legislation needs to be adapted, a research data law needs to be passed and the resources of official statistics need to be improved."

[German Council of Economic Experts, Germany, 2023](#)

Logical Consequences

We demand:

- More transparent data collection and more data bases concerning important economic accounts with Switzerland as best practice model
- Yearly data collection on unpaid work, including data on mental load
- Integration of unpaid work as part of national accounts
- Re-evaluation and more appreciation for all private and public work in the care and education sector
- Attractive part-time employment models for men and women
- Redistribution of work: men do less paid employment hours, women do less unpaid working hours
- Public and local sites to perform unpaid domestic tasks together in a communal setting, hence, we demand the strengthening of social infrastructure by effective urban and regional planning

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Report on methods

The objective of this study is to evaluate the worth of unpaid care work carried out by men and women in Germany from 2012 to 2021. To bring attention to this type of work and the changes in the balance between paid and unpaid work, it is necessary to quantify its value. Our calculation follows the Swiss Statistical Office (2022) and is based on data from the German Socio-economic Panel (DIW Berlin, 2023; Goebel et al., 2023) on time allocation, as well as data from the German Federal Employment Agency (2024) on median wages in formal employment on December 31st of each analyzed year. We also utilize data from the German Federal Statistical Office (2024a, 2024b, 2024c) on the German population, employment structure, and Gross Domestic Product (GDP). In the following sections, we will explain how we obtained time use data for unpaid care work, how we determined the so-called specialist wage for tasks in unpaid care work based on equivalent tasks in the formal sector, and how we calculated the value added by unpaid care work in relation to the GDP.

The German Socio-economic Panel (SOEP) is a comprehensive dataset that has been tracking information on the German population since 1984. The sample is continuously updated and includes information from all household members living in sample households beginning at age 12. For 2021, the sample size was reduced from approx. 30,000 to 20,000 individuals, but it still maintains representativeness (DIW Berlin, 2023; Goebel et al., 2023; SOEPcompanion, 2024).

The study at hand analyzes three datasets, i.e., `pl`, `ppathl`, and `pequiv`, in a long format. The variables utilized for examining daily routines are detailed in Table 1. These variables are generated from answers to the question: "What does your daily life look like? How many hours per day do you spend on the following activities during a typical weekday [...]?" (infas, 2022, p. 6). The list of activities encompasses formal employment and apprenticeship, errands, domestic work, child care, care of a dependent person, education, repairs or gardening, sports, leisure, and other hobbies. For this study, we concentrate on errands, domestic work, child care, care of a dependent person, and repairs or gardening. In what follows, we categorize the three activities, domestic work, errands, and repairs or gardening as comprehensive domestic work.

Table 1: Description of variables names in the pl data set

Variable name	Description
Pli0044_h	Child care, weekday (hrs.)
Pli0043_h	Domestic work, weekday (hrs)
Pli0040	Errands, weekday (hrs.)
Pli0049_h	Repairs and gardening, weekday (hrs.)
Pli0046	Care of a dependent person, weekday (hrs.)

Our sample is filtered based on socio-demographic characteristics. We focus on interviews with individuals aged 18 and above, as per the age variable in the pequiv dataset, and on information gathered through personal interviews (netto variable in ppathl < 20). Additionally, we restrict the sample to observations within the time frame of 2012 and 2021. Lastly, we consider the individual sex variable from the ppathl dataset.

The calculation of annual unpaid work hours is based on the following equation, assuming that weekday hours are equivalent to weekend hours.

$$hours_{weekday} * 365 = hours_{year}$$

For the years 2012, 2016, and 2020, we multiply by 366 days. The mean values are weighted using the phrf weight from the ppathl dataset to ensure representative results. For the analysis, we further utilize median monthly wages for formal employment in the care sector. The German Federal Employment Agency provided a dataset on median wages for jobs categorized by the employment classification of 2012 as of December 31st for the years 2012 to 2021 (Bundesagentur für Arbeit, 2011, 2024). Since unpaid work can involve multiple tasks, we used the mean values of median wages for equivalent formal sector tasks to generate wages for unpaid care work. Selected jobs are listed in Table 2.

Median wages are provided for jobs across four educational levels, ranging from 1 (assistance) to 4 (expert). With the exception of one activity, we use median wages associated with level 2 (professional) activities. Only the activity of a primary teacher is designated as a level 4 activity. This activity was chosen to represent the demands placed on parents who must assist their children in understanding school content. Additionally,

since there is no equivalent formal sector activity for running errands, we assigned wages for domestic work to this task as well.

To enable the multiplication of median wages with the hours of unpaid work, we convert monthly wages into hourly wages. We assume that individuals work an average of 20 days per month and 35 hours per week, or seven hours per day, as shown in the following equation:

$$\frac{\frac{wage_{month}}{20}}{7} = wage_{hour}$$

We incorporated the annual employer's contribution to social security as determined by the German federal government into the gross wages, following the methodology used by the Swiss Statistical Office. In Switzerland, the value of unpaid care work is determined by including the labor costs, which are the costs paid by firms to employ workers (Bundesamt für Statistik Schweiz, 2023), resulting in wages plus social security contributions. This approach highlights that unpaid care work is not only a current financial burden but also leads to a long-term financial disadvantage.

Tabelle 2: Identification of equivalent tasks for unpaid care tasks in formal employment categorized by the classification of occupation codes (KldB 2010)

KldB 2010	Description	Classification
12102	Gardening	Repairs/gardening
12202	Floristry	Repairs/gardening
25132	Technical service and maintenance	Repairs/gardening
28222	Production of clothes	Domestic work
29222	Backer/confectioner	Domestic work
29232	Processing meat	Domestic work
29242	Processing fish	Domestic work
29302	Cook	Domestic work
29312	Dessert cook	Domestic work
54112	Facility cleaning	Domestic work
54122	Window cleaning	Domestic work

54132	Clothes cleaning	Domestic work
54182	Dry cleaning	Domestic work
83142	Domestic and family care	Domestic work
53322	Health and hygiene supervision	Child care
83142	Domestic and family care	Child care
83112	Child care	Child care
84414	Primary school teacher	Child care
53322	Health and hygiene supervision	Care for a dependent person
82102	Elderly care	Care for a dependent person

Next, we calculated the total hours of unpaid work for men and women aged 18 and older living in Germany using current population statistics (Statistisches Bundesamt Deutschland, 2024a). We subtracted the number of children under 18 from the total population count and then multiplied the average number of annual hours of unpaid work for domestic tasks, childcare, and care for dependent individuals by the number of men and women living in Germany. Finally, we multiplied the total annual hours worked by the calculated gross-gross wages to determine the value added by unpaid work for each task, differentiating between men and women.

To assess the worth of unpaid care work in comparison to paid work, we analyzed the GDP of various sectors based on gender. We utilized the ratio of formally employed men and women in each sector, according to the WZ 2008 classification (Statistisches Bundesamt Deutschland, 2024b), to assign the GDP to men and women (Statistisches Bundesamt Deutschland, 2024c).

As a result, the calculation allowed us to evaluate the value added by unpaid and paid work for men and women in different national account sectors from 2012 to 2021. Specifically, we calculated the value added by domestic tasks such as cooking, washing, errands, gardening, and repairs, as well as by child care, and care for dependent individuals.

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