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The rise of part-time work: A German-French comparison

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Non-technical summary

Research Question

On average between 2006 and 2016, women worked part time considerably more often in Germany than in France. Furthermore, a lower percentage of part-time employment in Germany was involuntary. This paper explores possible factors that affect the choice to work part time in both countries. It discusses potential reasons for the higher incidence of "voluntary" part-time work in Germany.

Contribution

The paper applies econometric estimation techniques both to explore the possible determinants of choosing to work part time as well as to make a country comparison. The analysis is based on microdata of the Labour Force Survey. The focus is on preferences for part-time employment over full-time employment. Complementary estimations include inactivity as an additional option.

Results

Estimation results show that the factors related to greater preferences for part-time employment are similar in both countries: being married, the presence of children, a lower educational level, a more favourable labour market situation, and a higher female part-time employment rate. Marital status and the presence of children influence the choice to work part time more strongly in Germany. The stronger influence of marital status in Germany is in line with differences in the tax/benefit system. However, a comparison between eastern Germany and western Germany suggests that the social environment also plays a role. Controlling for several factors (such as demographics, education, regional female part-time employment rate and regional unemployment rates), estimation results indicate that the preferences with regards to part-time versus full-time employment do not differ much between the two countries for single women and for women without children. The differences seem to stem from the greater part-time preferences in Germany among married women and among women with children.

Nichttechnische Zusammenfassung

Fragestellung

Im Durchschnitt der Jahre 2006 bis 2016 arbeiteten Frauen in Deutschland deutlich häufiger in Teilzeit als in Frankreich. Zudem war ein geringerer Anteil der Teilzeitbeschäftigung in Deutschland unfreiwillig. Das vorliegende Papier untersucht mögliche Faktoren, welche die Wahl von Teilzeitbeschäftigung beeinflussen und diskutiert potenzielle Gründe für die Unterschiede zwischen den beiden Ländern in der Teilzeitwahl.

Beitrag

Mit ökonometrischen Schätzverfahren werden die möglichen Determinanten von Teilzeitbeschäftigung auf Basis von Mikrodaten aus der Arbeitskräfteerhebung untersucht und beide Länder miteinander verglichen. Der Fokus liegt dabei auf Präferenzen für Teilzeit- anstelle von Vollzeitbeschäftigung. Ergänzende Schätzungen berücksichtigen zudem Inaktivität als weitere Alternative.

Ergebnisse

Die empirischen Ergebnisse zeigen, dass in beiden Ländern ähnliche Faktoren im Zusammenhang mit einer stärkeren Präferenz für eine Teilzeittätigkeit stehen: verheiratet sein, eigene Kinder, ein niedrigerer Bildungsstand, eine günstigere Arbeitsmarktlage und ein höherer Anteil beschäftigter Frauen in Teilzeit. Allerdings beeinflusst der Familienstand und das Vorhandensein von Kindern die Wahl für Teilzeit in Deutschland stärker. Der höhere Einfluss des Familienstandes in Deutschland steht mit Unterschieden im Abgabensystem im Einklang. Jedoch deutet ein Vergleich zwischen Ost- und Westdeutschland darauf hin, dass auch das gesellschaftliche Umfeld eine Rolle spielt. Werden Unterschiede bei verschiedenen Faktoren wie Demographie, Bildungsstand, regionalen Anteilen der Teilzeitbeschäftigung von Frauen und regionalen Arbeitslosenquoten berücksichtigt, so gibt es bei unverheirateten Frauen und bei Frauen ohne Kinder kaum Unterschiede in den Teilzeitpräferenzen zwischen den beiden Ländern. Die Unterschiede scheinen von einer höheren Teilzeitpräferenz unter verheirateten Frauen und unter Frauen mit Kindern in Deutschland herzurühren.

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Abstract

I study possible determinants of part-time employment among women in France and Germany using microdata of the Labour Force Survey. Voluntary part-time work is substantially more widespread among women in Germany than it is in France. Estimation results show that while the presence of children and marital status are related to the choice to work part time in both countries, their impact is substantially greater in Germany. Controlling for several factors, the probability of working part time in Germany exceeds that in France among married women and among women with children, while there is hardly any difference among single women and women without children living in the same household. Further results suggest that, besides financial incentives, social norms and cultural legacy play a role in choosing to work part time.

Keywords: Part Time, Female Labour Supply

JEL classification: J16, J22.

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1 Introduction

The importance of part-time work differs markedly between the two largest euro-area economies. While on average between 2006 and 2016 in Germany, 27% of employed aged between 30 and 54 years worked part time, the corresponding share was 10pp lower in France. This overall gap is driven by strong differences in part-time work among women. In Germany, half of employed women worked part time compared to 30% in France. The difference becomes even more pronounced considering that 38% of part-time working women in France would actually like to work full time, while this is the case for 15% of women working part time in Germany. This paper analyses empirically which factors increase the preference for part-time employment over full-time employment among prime-age women in the two countries. It investigates how the relationship between these factors and part-time work differs between France and Germany and discusses possible reasons for this.

One strand of the literature on part-time employment focuses on gender discrimination. Petrongolo (2004) shows that in southern Europe as well as France a significant part of gender differences in part-time work cannot be explained by preferences. In contrast, in northern and central Europe (including Germany), the higher incidence of part-time working among women than among men can largely be explained by family ties. Blau and Kahn (2013) show in a cross-country analysis that part-time entitlements increase women's participation rate, but may also increase statistical discrimination against women by employers and a reduction in women's representation in high-level jobs. Indeed, according to Connolly and Gregory (2008) there is a high risk of underutilisation of human capital if workers do not have the right to part-time working in their existing job. They find that between 1991 and 2001 a substantial fraction of women working full time in the UK moved to lower level occupations when switching to part-time work. In terms of legal entitlements to part-time work, the two countries studied in this paper are relatively similar. Employees generally have the right to transition from full-time to part-time work. They can take parental leave for up to three years and can work part time during the period of parental leave. There further exists a principle of equal treatment of part-time and full-time employees.[1]

I find that marital status and the presence of children are significant determinants of voluntary part-time working among women in France and Germany, but with a much stronger effect in Germany. Social norms seem to play a significant role as well, as a higher female part-time employment rate[2] is related to a stronger preference for part-time jobs. Controlling for several factors (such as demographics, education, regional female part-time employment rate and regional unemployment rates), the difference between France and Germany in the probability of working part time is small among single women and among women without children living in the same household. The probability of part-time employment among married women and among women with children is substantially higher in Germany than it is in France. Differences in the tax/benefit system are consistent with the stronger effect of marital status in Germany. However, a comparison of marginal effects between eastern and western Germany suggests that cultural legacy can also play an important role.

The paper is organized as follows: Section 2 presents descriptive statistics on the incidence

[1] Source: BEEG and TzBfG (http://www.gesetze-im-internet.de), Code du Travail (https://www.legifrance.gouv.fr).

[2] The female part-time employment rate refers to female part-time employment as a percentage of female employment.

Table 1: Part time as a fraction of employed aged 30–54, years 2006–2016, weighted averages (number of observations in brackets)

	Total	Male	Female
Germany	27%	6%	50%
	(792,547)	(417,225)	(375,322)
France	17%	5%	30%
	(1,319,938)	(677,719)	(642,219)

Table 2: Labour market state as a fraction of the total female population, age group 30–54, years 2006–2016, weighted averages

	Germany	France
Inactive	18%	17%
Part-time employed	39%	23%
Full-time employed	39%	54%
Unemployed	5%	6%
Total	100%	100%
Observations	471,330	849,917

of part-time work and the reasons for part-time work. Section 3 estimates the role of several possible determinants on the probability of choosing part-time employment over full-time employment. Section 4 estimates the differences in the probability of voluntary part-time employment between the two countries. In section 5, I discuss possible institutional factors that might explain the findings. Section 6 concludes.

2 The data

I use yearly microdata of the Labour Force Survey (LFS) from Eurostat, which is a harmonized household survey, and restrict the analysis to the period 2006 to 2016. In order to abstract from differences in part-time work between France and Germany due to years of education or retirement age, only individuals aged between 30 and 55 years are included. Table 1 shows that the part-time employment rate was higher in Germany than in France. The male part-time employment rate was similarly low in both countries. Part-time work plays an important role among female employed, with a much higher percentage of employed women working part time in Germany than in France. The remainder of the paper therefore focusses on women. Part-time employment as a share of the total female population in the age group considered was also considerably higher in Germany than it was in France, while inactivity rates were similar (Table 2).

In the LFS survey, the full-time/part-time distinction is made by the respondents. Part-time workers are also asked about the reason for part-time work. If the reason is looking after

children or incapacitated adults, they are additionally asked about the role of care facilities. For the age group considered, education and illness play a minor role (Table 3). A larger share of women working part time in France indicated that they were unable to find a full-time job. Also expressed as a fraction of employed, the share was higher in France than in Germany (9% compared to 7%), which is in line with the, on average, less favourable labour market situation in France during the 2006-to-2016 period.[3] In Germany as in France, 6% of women employed on a part-time basis stated that their reason for working part time was that suitable care services for children or incapacitated adults were not available or affordable. However, the question on the role of care facilities remained relatively often unanswered in Germany. If we assume that the ratio of answers about the role of care facilities corresponds to the ratio within the group of part-time workers indicating that looking after children or incapacitated adults was their reason for working part time, the figure in Germany increases to 9%. I presume that part-time work is involuntary if the individual indicates that she was unable to find a full-time job or that care facilities were not available or affordable.

I classify part-time work as "desired" if the reason for this is looking after children or incapacitated adults independent of the supply of care facilities. Further, I include "other reasons", including other family or personal reasons, in the category "desired" part time. Almost half of women working part time in Germany indicated that they worked part time for "other reasons" compared to 22% in France. The choice of working part time might be shaped by social norms and traditions as well as financial incentives and constraints. Determinants of "desired" part-time employment are likely to differ from the determinants of other categories of part-time employment, especially part-time employment that is taken because the person in question was unable to find a full-time job. "Desired" part-time employment is the focus of the econometric analyses in this paper.

[3]During the 2006-to-2016 period, unemployment rates stood on average at 9% in France and 6% in Germany for the age group of 15 to 64. However, this period is characterized by a lower unemployment rate in France than in Germany before and in 2008 and a higher unemployment rate in France after 2008 (Source: aggregate LFS data, Eurostat). I find that the share of employed women aged 30 to 54 holding a part-time job because they were unable to find a full time job was lower in France than in Germany from 2006 to 2007 and higher in France after 2008.

Table 3: Reasons for part-time work as a percentage of part-time working women aged 30–54, years 2006–2016, weighted averages

	Germany	France
Involuntary part time		
Person could not find a full-time job	15%	32%
Suitable care services not available or affordable[a]	6%	6%
"Desired" part time		
Looking after children or incapacitated adults independent of the supply of care facilities[a]	16%	34%
Other reasons (including other family or personal reasons)	48%	22%
Further reasons		
Looking after children or incapacitated adults, no response to question on the role of care facilities[a]	12%	0%
Person is undergoing school education or training	1%	1%
Own illness or disability	2%	5%
Total	100%	100%
Observations	184,453	190,074

[a] If respondents gave their reason for working part time as looking after children or incapacitated adults, they were also asked about the role of care facilities in their part-time work. Relatively often, the second question remained unanswered in Germany.

3 Estimation by country

In order to analyse possible determinants of preferences for part-time employment, I estimate a logit model of the probability of part-time work for employed women. I exclude part-time employed if the part-time work is not "desired" according to the classification in Table 3. The time span for the estimations is from 2006 to 2016. The logit model is estimated separately for France and Germany by maximum likelihood. The underlying latent variable model has the following form:

$$y^* = \beta X + \varepsilon. \tag{1}$$

The matrix X contains the covariates, among which are year, sector and age dummies. ε denotes the error term.

The decision between full-time and part-time employment is conditional on the choice to participate in the labour market. The participation decision could be important for the interpretation of the estimated part-time preferences. Therefore, a complementary multinomial logistic regression model is estimated, which includes the state inactivity besides full-time and "desired" part-time employment.

Table 4 presents the estimation results for the logit model. In both countries, women with a higher level of education have a lower probability of "desired" part time rather than full time. Being married increases the likelihood of part-time work compared to being single. This effect is stronger in Germany. Women are more likely to work part time when they have children with having more than one child increasing the likelihood further. When the youngest child is

younger than one year, the effect is relatively small. The complementary multinomial logistic regression shows, however, that having a child younger than one year strongly increases the likelihood of inactivity (Tables 5 and 6). In the multinomial logit model, the effect on part-time employment in Germany is negative and it is positive in France. The effect on full-time employment is strongly negative.

For children of one year and older, the effect on part-time employment in the multinomial logit regression is positive. The effect on inactivity is, however, higher than the effect on part-time employment if the child is younger than three years. This goes into reverse if the youngest child is three years or older. This suggests that, for women with very young children, a more prevalent decision is one between leaving the labour market temporarily or staying employed. When the child grows older, the decision between working part time and full time becomes more important.

In the logit regression for the sample of employed (Table 4), the effect on "desired" part-time employment is large when the youngest child is between one and three years old and then decreases with the age of the youngest child. The marginal effect of the age of the youngest child is considerably larger in Germany than it is in France. For instance, compared to employed women without children, the probability of "desired" part-time employment is 37pp higher in Germany in the presence of a child aged between one and three years. The corresponding figure in France is 26 pp.[4]

The labour market situation is captured by the regional and yearly unemployment rates. The estimated probability of "desired" part-time work falls with increasing unemployment. One explanation for this could be that the unfavourable labour market situation increases the risk of household income losses and thus the wish to work full time. Peer effects are captured in the estimation by the regional and yearly percentage of employed women working part time. As expected, the effect is positive. If part-time work is widespread, the tendency to work part time is higher. This suggests that social norms play a role in the choice to work part time.

In a different model specification, the female part-time employment rate is replaced by the female participation rate (Tables 16 and 18). It is shown that a higher female participation rate lowers the probability of "desired" part-time work. Put another way, when fewer women participate in the labour market, those who do participate are more likely to opt for part-time employment. One tentative explanation for this correlation is that a higher participation rate is indicative of an environment where a more equal division of housework and childcare or their outsourcing are more common. This would also support full-time employment of women.

Further model specifications include information on the spouse if he lives in the same household (Tables 17 and 19). When living together with a spouse who is unemployed, the probability of "desired" part-time work is lower. This could be explained by a reduction in household income as a result of the spouse being unemployed, which might increase the preference for working full time. Estimation results further show, especially for Germany, a positive correlation of the monthly income of the spouse and the probability of working part time. In France, the effect is only significant if the spouse earns income above the seventh decile. One reason behind the positive correlation of the spouse's income and the choice to work part time could be that part-time work becomes financially more feasible with a more relaxed household budget constraint. The introduction of the spouse's income leaves the marginal effects of most

[4] In a different model specification, the age of the youngest child and the number of children are interacted with the marital status. It is shown that the percentage-point increase in the probability of working part time in the presence of children is higher among single women than among married women (Tables 14 and 15).

Table 4: Average marginal effect on the predicted probability of "desired" part-time (vs. full-time) work

Marginal effects	Germany	France
Level of education		
(reference=Medium: Upper-secondary and post-secondary, non-tertiary)		
High: Tertiary	-0.117***	-0.012***
	(0.002)	(0.001)
Low: Below primary, primary and lower-secondary	0.050***	0.026***
	(0.003)	(0.002)
Marital status (reference=Single)		
Widowed, divorced or legally separated	0.029***	-0.029***
	(0.003)	(0.002)
Married	0.202***	0.071***
	(0.002)	(0.001)
Age of the youngest own child living in the same household in years		
(reference= No child younger than 25)		
< 1	0.097***	0.188***
	(0.007)	(0.004)
$1-2$	0.372***	0.262***
	(0.005)	(0.003)
$3-6$	0.368***	0.126***
	(0.004)	(0.002)
$7-14$	0.271***	0.075***
	(0.003)	(0.002)
$15-24$	0.159***	0.030***
	(0.003)	(0.002)
Two or more children	0.094***	0.092***
	(0.003)	(0.001)
Unemployment rate (%)	-0.011***	-0.005***
	(0.001)	(0.000)
Female part-time employment rate (%)	0.011***	0.008***
	(0.000)	(0.000)
Observations	284,049	546,026
Pseudo R^2	0.2036	0.0834

Standard errors in parentheses, fixed effects: age (30–34, 35–39...), year (2006, 2007...), sector (industry, agriculture, construction, service, public). Unemployment rates and the female part-time employment rate are regional and year-dependent and relate to the age group of 15 to 64 years. Regions of households are at NUTS level 1 for Germany (16 regions) and at NUTS level 2 for France (26 regions). Tables 12 and 13 in the Appendix present summary statistics for the estimation sample.
*** p<0.01, ** p<0.05, * p<0.1

Table 5: Multinomial logit: Germany

Marginal effects	Inactive	"Desired" part time	Full time
Level of education			
(reference=Medium: Upper secondary)			
High: Third level	-0.065***	-0.069***	0.134***
	(0.001)	(0.002)	(0.002)
Low: Lower secondary	0.242***	-0.087***	-0.155***
	(0.002)	(0.002)	(0.002)
Marital status			
(reference=Single)			
Widowed, divorced or legally separated	0.005**	0.026***	-0.031***
	(0.002)	(0.003)	(0.003)
Married	0.027***	0.157***	-0.184***
	(0.002)	(0.002)	(0.002)
Age of the youngest own child in years			
(reference= No child younger than 25)			
< 1	0.257***	-0.029***	-0.228***
	(0.006)	(0.005)	(0.005)
$1-2$	0.255***	0.133***	-0.388***
	(0.004)	(0.004)	(0.003)
$3-6$	0.074***	0.258***	-0.332***
	(0.003)	(0.004)	(0.003)
$7-14$	0.014***	0.224***	-0.239***
	(0.002)	(0.003)	(0.003)
$15-24$	0.001	0.140***	-0.140***
	(0.002)	(0.003)	(0.003)
Two or more children	0.074***	0.044***	-0.118***
	(0.002)	(0.002)	(0.002)
Unemployment rate (%)	0.011***	-0.013***	0.002***
	(0.000)	(0.001)	(0.001)
Female part-time employment rate (%)	0.003***	0.008***	-0.011***
	(0.000)	(0.000)	(0.000)
Observations	347,113		
Pseudo R^2	0.1540		

Standard errors in parentheses, fixed effects: age (30–34, 35–39...), year (2006, 2007...). Unemployment rates and the female part-time employment rate are regional and year-dependent and relate to the age group of 15 to 64 years.
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Multinomial logit: France

Marginal effects	Inactive	"Desired" part time	Full time
Level of education			
(reference=Medium: Upper secondary)			
High: Third level	-0.097***	0.015***	0.082***
	(0.001)	(0.001)	(0.001)
Low: Lower secondary	0.220***	-0.035***	-0.185***
	(0.001)	(0.001)	(0.001)
Marital status			
(reference=Single)			
Widowed, divorced or legally separated	0.003*	-0.025***	0.022***
	(0.002)	(0.001)	(0.002)
Married	0.030***	0.049***	-0.079***
	(0.001)	(0.001)	(0.001)
Age of the youngest own child in years			
(reference= No child younger than 25)			
< 1	0.243***	0.062***	-0.304***
	(0.004)	(0.003)	(0.003)
$1 - 2$	0.189***	0.121***	-0.310***
	(0.003)	(0.002)	(0.003)
$3 - 6$	0.016***	0.092***	-0.109***
	(0.002)	(0.002)	(0.002)
$7 - 14$	-0.026***	0.066***	-0.040***
	(0.002)	(0.001)	(0.002)
$15 - 24$	-0.033***	0.032***	0.001
	(0.001)	(0.001)	(0.002)
Two or more children	0.078***	0.055***	-0.133***
	(0.001)	(0.001)	(0.002)
Unemployment rate (%)	0.011***	-0.006***	-0.005***
	(0.000)	(0.000)	(0.000)
Female part-time employment rate (%)	0.001***	0.006***	-0.007***
	(0.000)	(0.000)	(0.000)
Observations	690,842		
Pseudo R^2	0.1067		

Standard errors in parentheses, fixed effects: age (30–34, 35–39...), year (2006, 2007...). Unemployment rates and the female part-time employment rate are regional and year-dependent and relate to the age group of 15 to 64 years.
*** p<0.01, ** p<0.05, * p<0.1

regressors basically unaffected with the exception of the marital status. The marginal effect of being married compared to being single becomes smaller. The OECD (2017, chapter 4) estimates probabilities of full-time employment among mothers for groups of countries using 2012 EU SILC data. They concentrate on employed 25-to-45 year-old mothers with a partner who is working full time and find that in a group of countries with a high proportion of women in part-time employment (Germany included), mothers are less likely to work full time if the spouse earns a high income, while the marginal effect is not statistically significant in a group of countries "with a persistent but relatively narrow gender gap in working hours" (OECD, 2017, p. 137) (France included). This result is comparable with the finding above but excludes part of the female employed (for instance, those whose partners do not hold a full-time job). Their estimated effects of the age of the youngest child, the number of children, marital status, and level of education are also in line with the present estimation results.

The differences in marginal effects might be affected by the degree to which employers accommodate the part-time/full-time employment wishes of their employees. Part-time wishes of full-time workers are not observable in the LFS survey. However, unemployed persons and inactive persons looking for a job were asked if they were looking for a full-time or a part-time job. The part-time/full-time preferences of non-employed are analysed as a robustness test while keeping in mind that the results cannot be transferred one to one to the group of employed. In Germany 39% of non-employed women who were searching for a job indicated that they were looking for a part-time job compared to 23% in France. The percentages are roughly comparable to the female part-time employment rates if part-time employed who were unable to find a full-time job are extracted out of the sample.[5] Table 7 shows that for the group of non-employed searching for a job, part-time preferences are related to the labour market situation, the female part-time employment rate, the level of education and family commitments in much the same way as for the group of employed. Additionally, among the non-employed, the marginal effect of marital status and the age of the youngest child is considerably higher in Germany than in France. As part-time wishes of inactive persons might differ from the unemployed, a dummy variable for being inactive is introduced in an alternative estimation. This additional covariate is, however, likely to be endogenous.

4 Estimated differences between France and Germany

The logit regressions by country have shown that marital status and the presence of children in the same household have a stronger effect on the choice to work part time in Germany than they do in France. The marginal effects, however, refer to different samples. Therefore, the difference between France and Germany in the probabilities of working part time is estimated for different groups with similar characteristics. For that purpose, one logit model is estimated in which all covariates are interacted with a country dummy. The underlying latent variable model has the following form:

$$y^* = \beta_1 X + \beta_2 country + \beta_3 (X \times country) + \varepsilon. \tag{2}$$

Controlling for the level of education, marital status, age of the youngest child, dummy for more than two children, regional and yearly unemployment rates, regional and yearly female

[5] If part-time employed who could not find a full-time job are extracted out of the sample, the female part-time employment rate becomes $(100\% - 15\%)50\% = 43\%$ in Germany and $(100\% - 32\%)30\% = 20\%$ in France.

Table 7: Average marginal effect on the predicted probability of part-time wish of non-employed searching for a job

Marginal effects	Germany	France	Germany	France
Level of education				
(reference=Medium: Upper secondary)				
High: Tertiary	-0.029***	-0.016***	-0.028***	-0.017***
	(0.010)	(0.004)	(0.010)	(0.004)
Low: Lower secondary	0.012	0.027***	0.008	0.027***
	(0.008)	(0.004)	(0.008)	(0.004)
Marital status (reference=Single)				
Widowed, divorced, legally separated	0.023**	-0.003	0.021**	-0.004
	(0.010)	(0.005)	(0.010)	(0.005)
Married	0.122***	0.043***	0.123***	0.043***
	(0.009)	(0.004)	(0.009)	(0.004)
Age of the youngest own child in years				
(reference= No child younger than 25)				
< 1	0.421***	0.093***	0.371***	0.070***
	(0.040)	(0.013)	(0.042)	(0.012)
$1 - 2$	0.380***	0.102***	0.355***	0.091***
	(0.017)	(0.008)	(0.018)	(0.008)
$3 - 6$	0.403***	0.103***	0.396***	0.100***
	(0.013)	(0.007)	(0.013)	(0.007)
$7 - 14$	0.282***	0.034***	0.281***	0.033***
	(0.011)	(0.005)	(0.011)	(0.005)
$15 - 24$	0.096***	-0.004	0.096***	-0.004
	(0.012)	(0.005)	(0.012)	(0.005)
Two or more children	0.063***	0.058***	0.062***	0.056***
	(0.010)	(0.005)	(0.010)	(0.005)
Unemployment rate (%)	-0.020***	-0.008***	-0.020***	-0.008***
	(0.002)	(0.001)	(0.002)	(0.001)
Female part-time employment rate (%)	0.010***	0.009***	0.010***	0.009***
	(0.001)	(0.000)	(0.001)	(0.000)
Inactive			0.101***	0.098***
			(0.009)	(0.006)
Observations	17,409	60,343	17,409	60,343
Pseudo R^2	0.1682	0.0419	0.1742	0.0475

Standard errors in parentheses, fixed effects: age (30–34, 35–39...), year (2006, 2007...). Unemployment rates and the female part-time employment rate are regional and year-dependent and relate to the age group of 15 to 64 years.
*** p<0.01, ** p<0.05, * p<0.1

part-time employment rates, age-fixed effects, year-fixed effects, and sector-fixed effects, "desired" part-time work among single women is slightly more frequent in France than in Germany (Table 8, baseline). In contrast, among married women, the estimated probability of part-time work in Germany is 8pp higher than in France. Among women without children living in the same household, differences in part-time work between the two countries are small.

The estimated probability of "desired" part-time employment is higher in Germany than in France among women with a child between the age of one and 25 years, with the difference being the largest (16pp) when the youngest child is between the age of three and seven years. In the presence of a child younger than one year, the estimated probability is higher in France than in Germany. Analogous to the previous section, the estimation is augmented by a multinomial logit regression with the three states: inactivity, "desired" part-time, and full-time employment. It can be shown that, in the presence of a child under one year of age, the estimated probability of "desired" part-time employment is lower in Germany than in France, while the probability of inactivity is not significantly different and the probability of full-time work is higher in Germany (see Table 9). Also, when the youngest child is between one and three years old, the estimated probability of "desired" part-time employment is lower in Germany than in France. The probability of inactivity is, however, higher in Germany

As a robustness test, the baseline logit model is modified such that single regressors, which capture the economic environment, are excluded (Table 8). The exclusion of the sector-fixed effects, year-fixed effects, and the unemployment rates affect the estimated differences between the two countries only slightly. Also, when the female part-time employment rate is excluded, the structure of the results remain similar in the sense that the estimated difference is the lowest among single women and among women without children and the difference is large among women with a child aged between three and seven years. However, the size of the differences is much larger when female part-time employment rates are not controlled for with a higher probability of part-time work in Germany. This suggests that the social environment explains some of the difference between the two countries in the individual choice to work part time rather than full time.

5 Discussion

It was shown that, in both countries, preferences for part-time employment are the lowest among single women without children and with high educational attainment. However, the presence of children and marital status play a stronger role in Germany than in France in the decision to work part time.

France and Germany are similar in many respects that influence part-time work. There exists a general right to part-time work and a principle of equal treatment of part-time and full-time workers. Parents have the right to three years of parental leave, during which they can also work part time.[6] Joint income taxation is applied to married couples which, in combination with the progressive tax rate, reduces the attractiveness of increasing working hours for the second earner.[7] This could explain the positive effect of marriage on the choice to work part time for

[6]Source: BEEG and TzBfG (http://www.gesetze-im-internet.de), Code du Travail (https://www.legifrance.gouv.fr).

[7]In France, the tax unit is family income, and dependent children are taken into account for income taxation (OECD, 2015).

Table 8: Estimated differences in the average probabilities of "desired" part-time between France and Germany among employed women

	Baseline	Following regressor is excluded from baseline model:			
Subgroups		Sector FE	Year FE	Unemp. rate	Part-time emp. rate
Marital status					
Single	0.012***	0.010***	0.017***	0.004	-0.089***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Married	-0.079***	-0.082***	-0.071***	-0.087***	-0.217***
	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)
Age of the youngest own child in years					
< 1	0.147***	0.144***	0.155***	0.136***	0.011
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
$1-2$	-0.020***	-0.022***	-0.014**	-0.027***	-0.177***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
$3-6$	-0.158***	-0.161***	-0.151***	-0.165***	-0.306***
	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)
$7-14$	-0.120***	-0.123***	-0.113***	-0.128***	-0.259***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
$15-24$	-0.076***	-0.078***	-0.068***	-0.083***	-0.201***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
No child younger than 25	0.006***	0.004*	0.013***	-0.002	-0.087***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Observations	830,075	832,237	830,075	830,075	830,075
Pseudo R^2	0.1700	0.1630	0.1691	0.1691	0.1622

The baseline model contains the level of education, marital status, age of the youngest child, dummy for more than two children, regional and yearly unemployment rates, regional and yearly female part-time employment rates, age-fixed effects, year-fixed effects, and sector-fixed effects.

*** p<0.01, ** p<0.05, * p<0.1; standard errors in parentheses.

Table 9: Multinomial logit model - estimated differences of average probabilities in France compared to Germany

Subgroups	Inactive	"Desired" part time	Full time
Age of the youngest own child in years			
< 1	0.007	0.089***	-0.096***
	(0.006)	(0.004)	(0.006)
$1-2$	-0.087***	0.035***	0.052***
	(0.005)	(0.004)	(0.005)
$3-6$	-0.069***	-0.093***	0.162***
	(0.004)	(0.004)	(0.004)
$7-14$	-0.035***	-0.090***	0.125***
	(0.002)	(0.003)	(0.003)
$15-24$	-0.016***	-0.061***	0.077***
	(0.003)	(0.003)	(0.003)
No child younger than 25	0.031***	-0.000	-0.031***
	(0.002)	(0.002)	(0.002)
Observations	1,037,955		
Pseudo R^2	0.1422		

Regressors: level of education, marital status, age of the youngest child, dummy for more than two children, regional and yearly unemployment rates, regional and yearly female part-time employment rates, age-fixed effects, and year-fixed effects.
*** p<0.01, ** p<0.05, * p<0.1; standard errors in parentheses.

Table 10: Frequency distribution of usual weekly hours of full-time employed women, age group 30–54, years 2006–2016, weighted frequencies

	< 35	35	$36 - 39$	40	> 40	Total	Observations
Germany	5%	7%	27%	44%	18%	100%	186,833
France	5%	35%	26%	12%	21%	100%	443,667

women in both countries.[8]

There are also differences which could account for some of the stronger preferences to work part time in Germany. According to the OECD (2016), the tax/benefit systems lead to stronger disincentives to work for the second earner in Germany than they do in France. This is in line with the stronger effect of marital status in Germany. Paid parental leave available to mothers is six months (following maternity leave) in France compared to ten months in Germany.[9] As shown in Section 3, the presence of a child below the age of one year mainly increases the probability of inactivity, and the size of the effect is only slightly greater in Germany than in France.

In terms of average usual weekly hours, women employed part time work more hours in France than they do in Germany (26 compared to 20).[10] In contrast, women employed full time work fewer hours in France than in Germany (39 compared to 41). Hence, the difference between full-time and part-time employment in terms of hours is more pronounced in Germany than in France. Table 10 shows the frequency distribution of usual weekly working hours among full-time employed women. According to these figures, standard weekly hours among full-time employed women are 35 in France compared to 40 in Germany. One reason for the smaller effect of children and marital status on the choice to work part time in France could therefore be a more family-friendly working-time norm for full-time employed.

There are considerable differences between France and Germany concerning childcare. Public childcare spending is higher in France than it is in Germany[11] and the use of collective childcare facilities for young children has a longer tradition behind it. Public opinion in France is more favourable to mothers working full time than it is in Germany (Fagnani, 2012). Hence, cultural differences might play a role in the findings.[12] For instance, Fernández and Fogli (2009) show that culture, which they define as the distribution of preferences and beliefs, matter for female labour force participation.

Given the different historical experiences of eastern and western Germany, with a traditionally larger share of women working full time (Sacher, 2005) as well as a longer tradition of public childcare in eastern Germany, the impact of variables might differ within Germany.

[8] Thévenon (2016) shows in a cross-country analysis that high tax rates on second earners affect female labour market participation negatively.

[9] This changes from the second child in France, where it is extended to 24 months for one parent. Source: OECD family database.

[10] Here, I mean only "desired" part time. Among all part-time employed women, the respective figures are 24 hours in France and 20 hours in Germany.

[11] In 2013, public childcare spending as a percentage of GDP was 1.3% in France and 0.6% in Germany. Source: OECD Family Database.

[12] See Fernández (2011) for an overview of the literature on the impact of culture on economic outcomes.

Therefore, I estimate the logit model of Section 3 separately for eastern and western Germany (see Table 11). Indeed, the effect of being married is much smaller in eastern Germany, where it is more similar to its French counterpart. This suggests that the difference in the size of the effect of marital status between the two countries could also be explained by cultural legacy. The effect of the youngest child is also smaller in eastern Germany than in western Germany but it is greater than in France.

Table 11: Average marginal effect on the predicted probability of "desired" part time (vs. full time)

Marginal effects	Western Germany	Eastern Germany (Berlin included)
Level of education		
(reference=Medium: Upper secondary)		
High: Tertiary	-0.132***	-0.050***
	(0.002)	(0.004)
Low: Lower secondary	0.041***	0.095***
	(0.003)	(0.011)
Marital status		
(reference=Single)		
Widowed, divorced or legally separated	0.044***	-0.003
	(0.003)	(0.006)
Married	0.246***	0.052***
	(0.003)	(0.004)
Age of the youngest own child in years		
(reference= No child younger than 25)		
< 1	0.090***	0.077***
	(0.007)	(0.014)
$1-2$	0.379***	0.263***
	(0.005)	(0.011)
$3-6$	0.391***	0.220***
	(0.004)	(0.008)
$7-14$	0.286***	0.166***
	(0.003)	(0.006)
$15-24$	0.171***	0.068***
	(0.003)	(0.006)
Two or more children	0.096***	0.079***
	(0.003)	(0.006)
Unemployment rate (%)	-0.011***	-0.001
	(0.001)	(0.001)
Female part-time employment rate (%)	0.004***	0.011***
	(0.000)	(0.001)
Year-fixed effects	Yes	-
Observations	229,650	54,399
Pseudo R^2	0.2122	0.0852

Standard errors in parentheses, fixed effects: age (30–34, 35–39...), sector (industry, agriculture, construction, service, public). Unemployment rates and the female part-time employment rate are regional and year-dependent and relate to the age group of 15 to 64 years. Western German regions: Baden-Württemberg, Bavaria, Bremen, Hamburg, Hesse, Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, Saarland, Schleswig-Holstein. Eastern German regions: Berlin, Brandenburg, Mecklenburg-Vorpommern, Saxony, Saxony-Anhalt, Thuringia. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

6 Conclusions

Part-time work is more widespread among women in Germany than it is in France. In addition, a larger percentage of part-time employment in France is involuntary. Estimation results show that the factors related to greater preferences for part-time employment are similar in both countries: being married, the presence of children, a lower educational level, a more favourable labour market situation, and a higher female part-time employment rate. Marital status and the presence of children influence the choice to work part time more strongly in Germany. Differences in the tax/benefit system are in line with the stronger influence of marital status in Germany. However, a comparison between eastern Germany and western Germany suggests that the social environment also plays a role. Controlling for several factors, estimation results indicate that the preferences with regards to part-time versus full-time employment do not differ much between the two countries for single women and for women without children. The differences seem to stem from the greater part-time preferences in Germany among married women and among women with children.

A Appendix

Table 12: Germany: Summary statistics of estimation sample of Table 4

Variable	Mean	Std. Dev.	Min	Max
Part-time employed	.40	.49	0	1
Level of education				
High: Tertiary	.30	.46	0	1
Medium: Upper secondary	.61	.49	0	1
Low: Lower secondary	.09	.29	0	1
Marital status				
Single	.25	.43	0	1
Widowed, divorced or legally separated	.13	.34	0	1
Married	.62	.49	0	1
Own child in same household, age of the youngest in years				
< 1	.02	.14	0	1
1-2	.04	.19	0	1
3-6	.08	.28	0	1
7-14	.19	.39	0	1
15-24	.12	.33	0	1
No child younger than 25	.55	.50	0	1
Two or more children	.21	.41	0	1
Age				
30-34	.16	.37	0	1
35-39	.16	.36	0	1
40-44	.19	.39	0	1
45-49	.25	.43	0	1
50-54	.24	.43	0	1
Unemployment rate (%)	5.17	2.23	2.49	19.80
Female part-time employment rate (%)	46.13	5.06	28.94	56.35
Sector				
Industry	.14	.34	0	1
Agriculture	.01	.10	0	1
Construction	.02	.14	0	1
Service	.46	.50	0	1
Public	.38	.48	0	1
Number of obs = 284,049				

Table 13: France: Summary statistics of estimation sample of Table 4

Variable	Mean	Std. Dev.	Min	Max
Part-time employed	.20	.40	0	1
Level of education				
High: Tertiary	.41	.49	0	1
Medium: Upper secondary	.42	.49	0	1
Low: Lower secondary	.18	.38	0	1
Marital status				
Single	.32	.47	0	1
Widowed, divorced or legally separated	.12	.33	0	1
Married	.56	.50	0	1
Own child in same household, age of the youngest in years				
< 1	.03	.16	0	1
1-2	.06	.25	0	1
3-6	.14	.35	0	1
7-14	.27	.44	0	1
15-24	.16	.36	0	1
No child younger than 25	.35	.48	0	1
Two or more children	.39	.49	0	1
Age				
30-34	.16	.37	0	1
35-39	.19	.39	0	1
40-44	.22	.41	0	1
45-49	.22	.42	0	1
50-54	.21	.41	0	1
Unemployment rate (%)	9.39	2.70	4.08	29.98
Female part-time employment rate (%)	30.26	4.99	15.97	46.86
Sector				
Industry	.10	.30	0	1
Agriculture	.02	.14	0	1
Construction	.02	.12	0	1
Service	.41	.49	0	1
Public	.45	.50	0	1
Number of obs = 546,026				

Table 14: Germany: Average marginal effect of having children on the predicted probability of "desired" part-time (vs. full-time) work by marital status

Marginal effects	Widowed, divorced or legally separated	Single	Married
Age of the youngest own child in years (reference= No child younger than 25)			
< 1	0.189***	0.200***	0.051***
	(0.035)	(0.014)	(0.008)
$1-2$	0.365***	0.501***	0.338***
	(0.028)	(0.010)	(0.006)
$3-6$	0.370***	0.461***	0.348***
	(0.014)	(0.008)	(0.004)
$7-14$	0.227***	0.339***	0.267***
	(0.007)	(0.007)	(0.004)
$15-24$	0.083***	0.193***	0.174***
	(0.006)	(0.010)	(0.003)
Two or more children	0.093***	0.091***	0.115***
	(0.008)	(0.007)	(0.003)
Observations	284,049		
Pseudo R^2	0.2064		

Standard errors in parentheses. Regressors: level of education, marital status, age of the youngest child, dummy for more than two children, regional and yearly unemployment rates, regional and yearly female part-time employment rates, age-fixed effects, year-fixed effects, and sector-fixed effects. Age of the youngest child and dummy for more than two children interacted with marital status

*** p<0.01, ** p<0.05, * p<0.1

Table 15: France: Average marginal effect of having children on the predicted probability of "desired" part-time (vs. full-time) work by marital status

Marginal effects	Widowed, divorced or legally separated	Single	Married
Age of the youngest own child in years (reference= No child younger than 25)			
< 1	0.165***	0.204***	0.146***
	(0.019)	(0.006)	(0.006)
$1 - 2$	0.264***	0.268***	0.236***
	(0.015)	(0.004)	(0.004)
$3 - 6$	0.123***	0.129***	0.108***
	(0.006)	(0.003)	(0.003)
$7 - 14$	0.072***	0.084***	0.061***
	(0.004)	(0.003)	(0.002)
$15 - 24$	0.010***	0.033***	0.024***
	(0.003)	(0.003)	(0.002)
Two or more children	0.045***	0.111***	0.097***
	(0.004)	(0.002)	(0.002)
Observations	546,026		
Pseudo R^2	0.0863		

Standard errors in parentheses. Regressors: level of education, marital status, age of the youngest child, dummy for more than two children, regional and yearly unemployment rates, regional and yearly female part-time employment rates, age-fixed effects, year-fixed effects, and sector-fixed effects. Age of the youngest child and dummy for more than two children interacted with marital status

*** p<0.01, ** p<0.05, * p<0.1

Table 16: Germany: "desired" part time vs. full time

Marginal effects	(1)	(2)	(3)
Level of education			
(reference=Medium: Upper secondary)			
High: Tertiary	-0.131***	-0.117***	-0.118***
	(0.002)	(0.002)	(0.002)
Low: Lower secondary	0.068***	0.050***	0.048***
	(0.003)	(0.003)	(0.003)
Marital status			
(reference=Single)			
Widowed, divorced or legally separated	0.039***	0.029***	0.029***
	(0.003)	(0.003)	(0.003)
Married	0.218***	0.202***	0.204***
	(0.002)	(0.002)	(0.002)
Age of the youngest own child in years			
(reference= No child younger than 25)			
< 1	0.097***	0.097***	0.096***
	(0.007)	(0.007)	(0.007)
$1-2$	0.361***	0.372***	0.371***
	(0.005)	(0.005)	(0.005)
$3-6$	0.357***	0.368***	0.368***
	(0.004)	(0.004)	(0.004)
$7-14$	0.270***	0.271***	0.272***
	(0.003)	(0.003)	(0.003)
$15-24$	0.166***	0.159***	0.160***
	(0.003)	(0.003)	(0.003)
Two or more children	0.104***	0.094***	0.094***
	(0.003)	(0.003)	(0.003)
Unemployment rate (%)		-0.011***	-0.030***
		(0.001)	(0.000)
Female part-time employment rate (%)		0.011***	
		(0.000)	
Female participation rate (%)			-0.013***
			(0.000)
Observations	284,049	284,049	284,049
Pseudo R^2	0.1832	0.2036	0.2032

Standard errors in parentheses, fixed effects: age (30–34, 35–39...), year (2006, 2007...), sector (industry, agriculture, construction, service, public). Unemployment rates, the female part-time employment rate, and the female participation rate are regional and year-dependent and relate to the age group of 15 to 64 years.
*** p<0.01, ** p<0.05, * p<0.1

Table 17: Germany: "desired" part time vs. full time, after 2009

Marginal effects	(1)	(2)	(3)	(4)	(5)
Level of education					
(reference=Medium)					
High: Tertiary	-0.130***	-0.116***	-0.117***	-0.117***	-0.126***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Low: Lower secondary	0.071***	0.053***	0.051***	0.054***	0.075***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Marital status					
(reference=Single)					
Widowed, divorced	0.039***	0.029***	0.029***	0.028***	0.038***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Married	0.216***	0.200***	0.202***	0.200***	0.136***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Own child in same household,					
age of the youngest in years					
(reference= No child younger than 25)					
< 1	0.096***	0.096***	0.095***	0.096***	0.073***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
$1 - 2$	0.364***	0.375***	0.375***	0.375***	0.350***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
$3 - 6$	0.358***	0.370***	0.370***	0.370***	0.353***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
$7 - 14$	0.270***	0.272***	0.273***	0.272***	0.261***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
$15 - 24$	0.167***	0.160***	0.160***	0.160***	0.147***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Two or more children	0.103***	0.094***	0.094***	0.094***	0.083***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Unemployment rate (%)		-0.011***	-0.031***	-0.011***	-0.008***
		(0.001)	(0.000)	(0.001)	(0.001)
Female part-time employment rate (%)		0.011***		0.011***	0.010***
		(0.000)		(0.000)	(0.000)
Female participation rate (%)			-0.013***		
			(0.000)		
Unemployed spouse				-0.077***	
				(0.008)	
Spouse's monthly income					
(reference= below the 1st decile)					
$1 - 2$th decile					0.078***
					(0.013)
$2 - 3$th decile					0.109***
					(0.011)
$3 - 4$th decile					0.131***
					(0.010)

4 – 5th decile					0.152***
					(0.010)
5 – 6th decile					0.198***
					(0.010)
6 – 7th decile					0.242***
					(0.009)
7 – 8th decile					0.274***
					(0.009)
8 – 9th decile					0.299***
					(0.009)
$\geq$ 9th decile					0.331***
					(0.009)
Self-employed/family worker					0.216***
					(0.009)
Inactive					0.140***
					(0.010)
Unemployed					0.142***
					(0.012)
No spouse in same household					0.147***
					(0.009)
Observations	267,876	267,876	267,876	267,876	267,876
Pseudo R^2	0.1833	0.2031	0.2030	0.2034	0.2194

Standard errors in parentheses, fixed effects: age (30–34, 35–39...), year (2009, 2010...), sector (industry, agriculture, construction, service, public). Unemployment rates, the female part-time employment rate, and the female participation rate are regional and year-dependent and relate to the age group of 15 to 64 years. Here, years 2009 to 2016 as income deciles are available only after 2009.

*** p<0.01, ** p<0.05, * p<0.1

Table 18: France: "desired" part time vs. full time

Marginal effects	(1)	(2)	(3)
Level of education			
(reference=Medium: Upper secondary)			
High: Tertiary	-0.016***	-0.012***	-0.016***
	(0.001)	(0.001)	(0.001)
Low: Lower secondary	0.021***	0.026***	0.021***
	(0.002)	(0.002)	(0.002)
Marital status			
(reference=Single)			
Widowed, divorced or legally separated	-0.027***	-0.029***	-0.028***
	(0.002)	(0.002)	(0.002)
Married	0.075***	0.071***	0.074***
	(0.001)	(0.001)	(0.001)
Age of the youngest own child in years			
(reference= No child younger than 25)			
< 1	0.183***	0.188***	0.184***
	(0.004)	(0.004)	(0.004)
$1-2$	0.256***	0.262***	0.258***
	(0.003)	(0.003)	(0.003)
$3-6$	0.123***	0.126***	0.124***
	(0.002)	(0.002)	(0.002)
$7-14$	0.074***	0.075***	0.074***
	(0.002)	(0.002)	(0.002)
$15-24$	0.028***	0.030***	0.028***
	(0.002)	(0.002)	(0.002)
Two or more children	0.093***	0.092***	0.093***
	(0.001)	(0.001)	(0.001)
Unemployment rate (%)		-0.005***	-0.010***
		(0.000)	(0.000)
Female part-time employment rate (%)		0.008***	
		(0.000)	
Female participation rate (%)			-0.007***
			(0.000)
Observations	546,026	546,026	546,026
Pseudo R^2	0.0734	0.0834	0.0752

Standard errors in parentheses, fixed effects: age (30–34, 35–39...), year (2006, 2007...), sector (industry, agriculture, construction, service, public). Unemployment rates, the female part-time employment rate, and the female participation rate are regional and year-dependent and relate to the age group of 15 to 64 years.
*** p<0.01, ** p<0.05, * p<0.1

Table 19: France: "desired" part time vs. full time, after 2009

Marginal effects	(1)	(2)	(3)	(4)	(5)
Level of education					
(reference=Medium)					
High: Tertiary	-0.014***	-0.011***	-0.015***	-0.012***	-0.018***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Low: Lower secondary	0.023***	0.028***	0.023***	0.029***	0.035***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Marital status					
(reference=Single)					
Widowed, divorced	-0.016***	-0.019***	-0.017***	-0.020***	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Married	0.087***	0.081***	0.086***	0.082***	0.042***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Own child in same household,					
age of the youngest in years					
(reference= No child younger than 25)					
< 1	0.170***	0.175***	0.171***	0.178***	0.147***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
$1 - 2$	0.230***	0.234***	0.231***	0.236***	0.206***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
$3 - 6$	0.112***	0.115***	0.113***	0.116***	0.100***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
$7 - 14$	0.074***	0.075***	0.074***	0.075***	0.068***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
$15 - 24$	0.027***	0.029***	0.027***	0.029***	0.022***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Two or more children	0.078***	0.078***	0.078***	0.078***	0.072***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Unemployment rate (%)		-0.005***	-0.008***	-0.005***	-0.004***
		(0.000)	(0.000)	(0.000)	(0.000)
Female part-time employment rate (%)		0.007***		0.007***	0.007***
		(0.000)		(0.000)	(0.000)
Female participation rate (%)			-0.006***		
			(0.000)		
Unemployed spouse				-0.039***	
				(0.003)	
Spouse's monthly income					
(reference= below the 1st decile)					
$1 - 2$th decile					0.011
					(0.015)
$2 - 3$th decile					-0.012
					(0.013)
$3 - 4$th decile					-0.010
					(0.013)

4 – 5th decile					-0.009
					(0.012)
5 – 6th decile					0.010
					(0.012)
6 – 7th decile					0.017
					(0.012)
7 – 8th decile					0.024**
					(0.012)
8 – 9th decile					0.038***
					(0.012)
$\geq$ 9th decile					0.084***
					(0.012)
Self-employed/family worker					0.071***
					(0.012)
Inactive					0.005
					(0.012)
Unemployed					-0.017
					(0.012)
No spouse in same household					-0.033***
					(0.012)
Observations	244,106	244,106	244,106	244,106	244,106
Pseudo R^2	0.0826	0.0936	0.0842	0.0943	0.1036

Standard errors in parentheses, fixed effects: age (30–34, 35–39...), year (2009, 2010...), sector (industry, agriculture, construction, service, public). Unemployment rates, the female part-time employment rate, and the female participation rate are regional and year-dependent and relate to the age group of 15 to 64 years. Here, years 2009 to 2016 as income deciles are available only after 2009.

*** p<0.01, ** p<0.05, * p<0.1

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