

International Differences in Market Work and Household Production

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Abstract

This paper analyzes explanations for the substantial gap in market-work hours between the US and European countries. Especially the impact of demographic variables –like the presences of children- on time allocation is analyzed. Although a myriad of variables affects the time allocation between the market and household production, human capital of women and their rise in the wage position seems to be central.

1. Diverging Trends in Hours Worked

Over the last decades the leadership of the US in per-capita income was almost unchallenged. But the reasons for higher per-capita income in the US as compared to Europe changed substantially: In the 1970s US productivity was superior and higher per-capita income resulted from technological leadership. The US achieved higher per-capita incomes with lower labor inputs than European countries. At that time the US was also the pacemaker for shorter working hours with the 40-hours, 5-day workweek, which was not generally applied in Europe at that time. By the end of the last century productivity levels in the most advanced European economies (i.e., the Netherlands, West-Germany, France) caught up to US productivity levels and consequently higher US per-capita income resulted from higher labor input achieved mainly an increase in participation with approximately constant working hours of the employed.

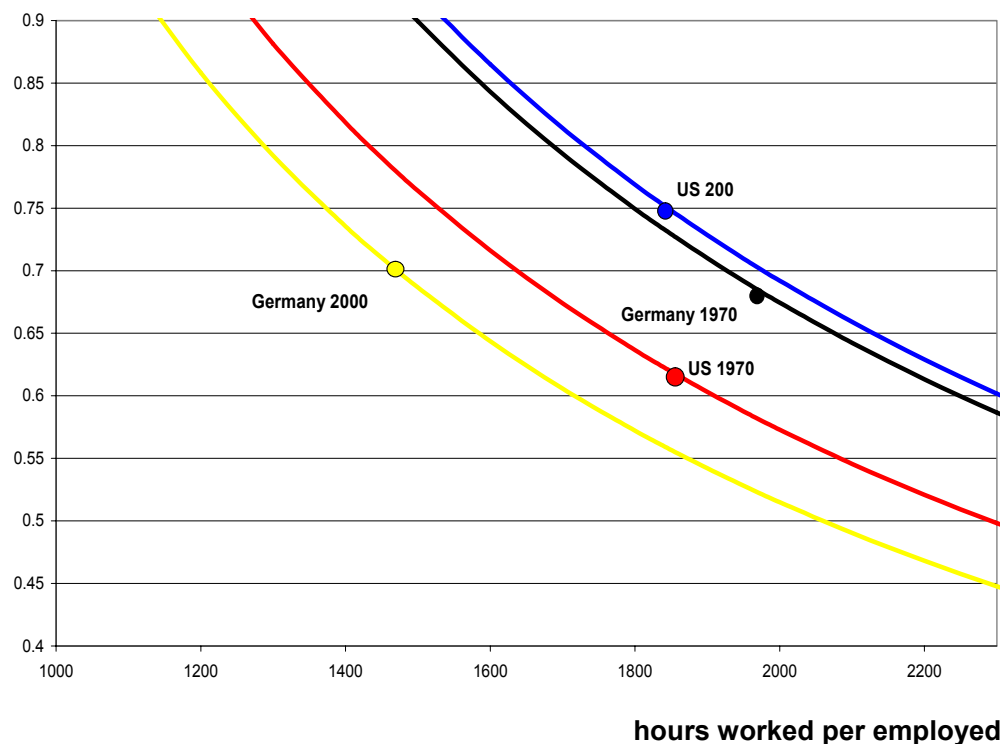
The US trends contrast sharply with those in Europe: Working hours per head of the population in working age (15 to 64 years old) rose in the US by about 230 hours in the 3 decades from 1970 to 2000, whereas it declined by more than 300 hours in West-Germany, which is taken as a proxy for continental Europe.¹ Figure 1 illustrates these trends. The vertical axis in Figure 1 measures employment-population rates (15 to 64 years old), the horizontal axis measures average hours worked per employed person. The product of these measures give average hours worked per head of the population in working age. The hyperbolic lines represent constant hours worked per head of the population resulting from various combinations of the employment-population rates and the working hours of the employed. Germany, which can be taken as a proxy for continental Europe, had a higher employment-population rate and longer working hours 1970 but reduced hours substantially (first by the general introduction of the 40 hours work-week and longer vacation) and moved far to the left in Figure 1. Although the German employment rate increased slightly, the reduction in hours worked per employed person over-compensated this effect. In the US, hours worked remained roughly constant but the employment-population rate rose

¹ Data on hours worked are taken from OECD Employment Outlook. Estimates on hours worked, however, differ substantially between the various sources with especially large deviations for the US but similarities in trends (for an analysis compare Schettkat/ Damen 2003).

substantially. As a result, at the turn of the century Americans between 15 and 65 years work almost 350 hours more per head of the population than Germans.²

Figure 1: Trends in hours worked

Employment-population rate



Source: Original data from OECD Employment Outlook

The hyperbolic lines represent constant hours of work per head of the population in working age achieved by different employment-population rates and hours worked of the employed.

Recently these opposing trends in hours worked have got attention and numerous explanations have been proposed. Edward Prescott (2004) claimed that differences in tax rates explain virtually the entire difference in hours worked between the US and Europe. High taxation in Europe shifts labor away from market work into untaxed activities, be it household production or leisure. Explicitly Prescott does not distinguish between different uses of non-market time. Olivier Blanchard (2004), on the other hand, argues that Europeans have a preference for leisure and that

² Although unemployment in Germany and Europe rose substantially from the 1970s to the end of 1990s, the major contribution to the declining hours of work per head of the population stems from a decline in average hours per employed. Similar trends occur in France, which led Olivier Blanchard (2004) to conclude that Europeans prefer leisure over income.

Americans are workaholics. If leisure is a normal good, one expects leisure to increase with rising incomes. Also Blanchard does not distinguish between different uses of non-market time. Both explanations, however, run into difficulties. For the tax story, Prescott himself need to extend his argument, because US labor supply rose substantially although the US tax rate as used in his study remained constant. It is also easy to find countries with rising tax rates and rising labor supply as Blanchard mentions. The preference story, on the other hand, cannot explain why Americans developed a taste for work after 1070 whereas Europeans developed a taste for leisure.

However, both authors interpret European working hours as an equilibrium situation different from that of the US. In Prescott's case the taxation system is shaped to create a low-market-hours equilibrium. In Blanchard's case the low-hours equilibrium results from the European taste for leisure.³ Actually for many European women actual and preferred working arrangements differ substantially. According to the European Labor Force Survey married women would prefer working time arrangements where either both, husband and wife, work full-time or where the husband works full-time and the wife works part-time. In almost all European countries in Table 1 preferred working arrangements require more work for women than is actually realized, which does not support the equilibrium interpretation.

³ It may actually also be the case, that the long hours equilibrium of the US may not present preferences but rather a failure of collective decision making. Individualized bargaining may not allow for reductions in working hours, it may require collective action (Alesina/ Glaeser/ Sacerdote, 2005, see also Schelling's hockey helmets example, 1973).

Table 1: Preferences of women towards working in the market in Europe

	MAN woman full - time	WORKING woman part - time	Full-Time woman not employed	Other
	PREFERRED			
Sweden	66.8	22.2	6.6	4.4
UK	21.3	41.8	13.3	23.6
Germany	32	42.9	5.7	19.4
Netherlands	5.6	69.9	10.7	13.8
France	52.4	21.9	14.1	11.7
	ACTUAL			
Sweden	51.1	13.3	24.9	10.7
UK	24.9	31.9	32.8	10.4
Germany	15.7	23.1	52.3	8.9
Netherlands	4.8	54.8	33.7	6.7
France	38.8	14.4	38.3	8.4

Source: European Labor Force Survey

Freeman/ Schettkat (2005, 2001) proposed the marketization hypothesis to explain transatlantic differences in working hours per head of population. They argued that Europeans actually do not work much less than Americans but they allocate their time differently between the market economy (including the public sector) and household production. Americans work longer hours in the measured economy, in the market, but Europeans spent more hours in unmeasured household production. This inter-country observation also holds for trends within countries: As market hours expand, household production hours decline. Over time households outsourced more and more activities to the market, which is a characteristic of economic development. Trends in time-allocation between market work and non-market activities are potentially influenced by a myriad of variables such as educational attainment, relative incomes, taxes, culture, and demographic factors such as the age of the youngest child, the number of children, child-care facilities, age, marital status and others more.

According to the marketization hypothesis it has severe consequences for employment, how non-market time is allocated between household production and leisure (personal time seems to be vary much less than the other two categories of non-market time). If household production time is reduced this requires market

substitutes⁴ and thus higher spending. Marketization affects both the supply and the demand side of labor markets. Furthermore, as marketization proceeds the variety of products in the market to substitute household production will advance making it more attractive to work in the market.

In the DEMPATEM-Study (a major international research project including six countries)⁵ it was found on the basis of comparable micro-data sets that household income is the major determinant for spending. If income in a household rises due to a second earner expenditures rise with a more than proportional increase of service expenditures. Thus, there is clear evidence that higher work incomes also through additional labor input lead to higher expenditures. To establish a clear cut relation between time use and expenditures, however, would require combined time-use and expenditure data, which does not exist to our knowledge. One approach would be to establish the relation with aggregate data. But here sufficiently specific categories are rare. One sufficiently specific category is ‘expenditures’ in restaurants. For this category Freeman/ Schettkat 2005 found a negative correlation between time spent on cooking and expenditures in restaurants. Not surprising, higher spending also leads to higher employment in the relevant industry. Consistent with this finding is Daniel Hamermesh’s (2005) research showing that time is substituted by expenditures on goods.

Since labor supply studies and also our own investigations showed that men’s time allocation is not much affected by demographics we concentrate on female time-use. Specifically we focus on time allocation of mothers with young children, who have changed their labor market participation most dramatically over the last decades. Here we also find a stark contrast in participation between the US and West-Germany. First, however, we discuss whether the marketization hypothesis still holds given the new ATUS 2003 data, which estimates household production hours in the US to be substantially higher than previous surveys.

⁴ Substitution processes may not be direct but complex. For example, less time to prepare meals at home may not result in demand for a cook or restaurant services but time for ‘cooking at home’ may also be substitute by prepared (in part or entirely) food and microwaves.

⁵ The DEMPATEM study (DEM and PATterns and EMPloyment) included the US, UK, Netherlands, France, Spain, and West-Germany (see Salverda/ Schettkat/ Gregory 2006 for an overview)

2. Does the 2003 ATUS data contradict the marketization hypothesis?

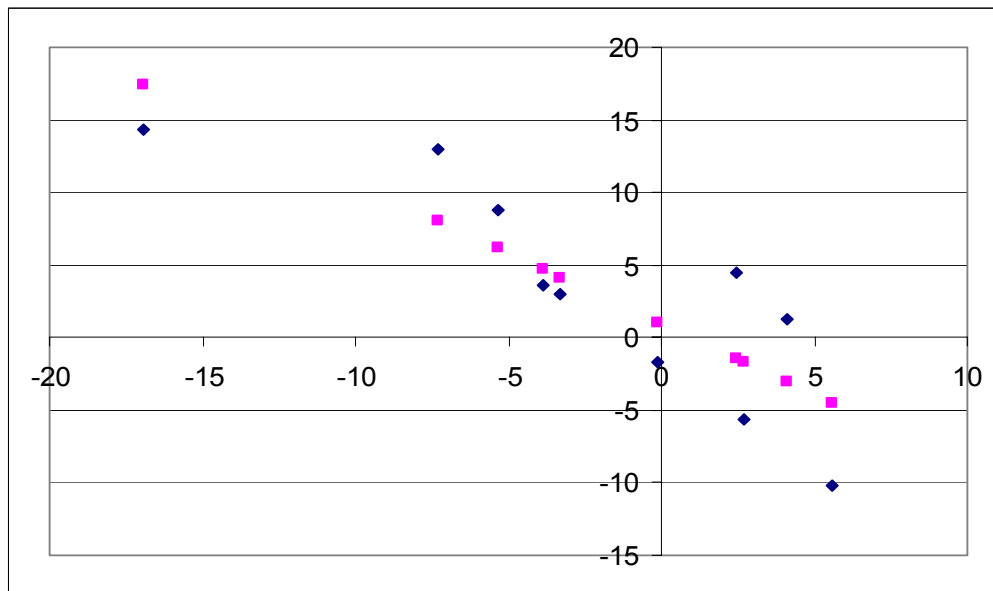
In Freeman/ Schettkat 2005 changes over time in market work and changes over time in household production showed a clear negative association.⁶ These estimates were based on the differences of hours in market work and of hours in household production between the first and the latest available year for those countries for which at least two observations were available. Countries for which at least 2 time-use surveys were available include: Canada, the UK, Sweden, the Netherlands, and the US. For the US the first available year was 1975 and the latest was 1992. Figure 2 shows the changes in market work hours and household production hours for the five countries separately for men and women in the age between 25 and 54 years. Generally, women increased their market time and reduced household production hours, i.e. they are in the north-east quadrant of the diagram. In the top graph, using for the US the years 1992-1975 a reduction of household production by one hour adds one hour of market work. The 1992 time-use study probably underestimated hours spent in household production because households with children were undersampled (see Egerton/ Fisher/ Gershuny 2005). The generalization of the marketization diagnosis based on international data from various countries may therefore not hold in the light of the 2003 ATUS data, which produces higher values for time spent in household production.

In the lower graph of Figure 2 the US data refer to the differences between the ATUS 2003 survey and the survey from 1975. Using the ATUS 2003 data reduces the positive differences in market work marginally but decreases the negative difference for time spent in household production substantially. As a result the regression line is steeper in the lower graph but the substitutional relationship between household production and market work clearly remains. The coefficient for the difference of time in household production greater than one suggests that the increase in M for women (in the north-east quadrant) was partly achieved by a reduction in leisure or personal time (see Appendix for a definition of these categories).

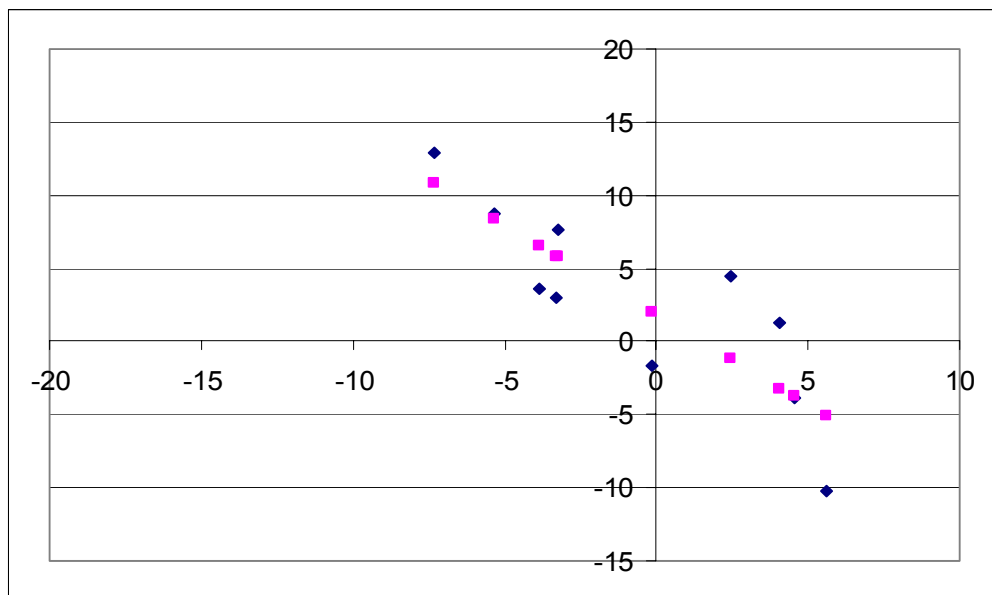
⁶ The analysis was based on the MTUS data from the Institute For Social and Economic Research at the University of Essex.

Figure 2: Change in hours worked, market (vertical) versus household (horizontal)

US: 1992- 1975



US: 2003-1975



blue (squares): actual values, violet (diamonds): predicted values

taking H as the independent variable gives predicted values:

US 2003-1975: $\Delta M = 1.81 - 1.23\Delta H$, R^2 0.71

US 1992-1975: $\Delta M = 0.95 - 0.97\Delta H$, R^2 0.72

However, using the 2003-1975 differences assumes that the ATUS 2003 measures the market work and household production similarly to earlier surveys. The major difference between the 1992 and the 2003 time use study occur in household production, which consists here of (1) time cooking, washing up, (2) time spent doing housework, (3) time spent doing odd jobs, (4) time spent gardening, (5) time spent shopping, (6) time spent in childcare, (7) time spent during domestic travel.⁷ Appendix-table 2 shows that almost the entire difference in H stems from childcare. For all women (age 25-54) two thirds of the increase in household production hours between the 1992 and the 2003 survey stems from childcare and for women with children 100% stems from childcare. Women with a child below 5 years spent according to the ATUS 2003 even more time on childcare then in 1975 (160 minutes per day compared to 102 minutes per day). In their report ‘American Time Use 1965-2003’ Egerton/ Fisher/ Gershuny (2005) conclude that the ATUS 2003 overestimates especially childcare activities because of the slight oversampling of families but mainly because of the instrument design. Although the 1992 data may underestimate childcare activities, 90 minutes of childcare per day compared to 102 minutes per day in the 1975 survey seems to be a plausible number (compare Appendix-Table A2).

Investigating the trend, however, would put the marketization hypothesis in doubt, if one would assume that all surveys measure household production correctly. The comparison of the 1992 and earlier surveys with ATUS 2003, shows substantially higher time spend in household production.

⁷ The time-use categories used here are the 41 categories of the MTUS (Multinational Times Use Study, Essex University). We are grateful to Kimberly Fisher who kindly shared her transition matrices for the aggregation of the US data into the MTUS categories with us.

3. International differences in time allocation

3.1 Difference in the average

Focusing on the 25 to 54 years old population, which is less influenced by differences in the educational, and pension systems, 1992 –the year for which data both for the US and Germany is available- shows a stark contrast in time allocation for women (Table 2). Although overall working hours (market work (M) + household production (H)) for women are astonishingly similar, the allocation between the two categories differs dramatically. The average West-German women spends about one third of her overall working hours in the market but two thirds in the household compared to a roughly fifty-fifty (53% in the 1992, 47% in the 2003 survey) distribution for the average American woman. The contrast between the average West-German and American woman is even stronger for women with a child below the age of 5 years: here only 10% of the overall working hours are devoted to the market in West-Germany but in the US it is still one third. The 2003 ATUS data shows a shift in favor of household production time and raises overall working hours compared to the earlier surveys but even in this survey hours spent in this category are clearly below the German values.

Table 2: The allocation of time to market and non-market activities, West-Germany and the US, various years

Variable	West Germany 1992		US 1985		US 1992		US 2003		G1992-US1985	G1992-US1992	G1992-US2003
	Mean	Std. Dev.	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev			
Men											
M	356.2	288.4	345.0	289.0	370.3	299.8	370.4	295.4	11.2	-14.1	-14.2
H	160.7	152.3	168.8	157.2	141.9	170.7	174.7	173.8	-8.1	18.8	-14.0
L	320.7	186.6	307.7	191.8	331.7	229.8	298.9	210.5	13.0	-11.0	21.8
P	602.4	125.5	618.5	133.3	596.1	135.7	595.9	137.5	-16.1	6.3	6.5
MH	516.9		513.8		512.2		545.2		3.1	4.7	-28.2
Women											
M	172.1	237.2	248.1	268.5	270.6	284.1	252.7	269.3	-76.0	-98.5	-80.6
H	338.1	194.3	258.1	184.5	238.0	201.7	283.9	204.8	79.9	100.1	54.1
L	304.6	161.7	305.3	176.0	306.4	204.5	275.3	183.3	-0.6	-1.8	29.3
P	625.2	111.7	628.5	128.8	625.0	135.2	628.0	135.7	-3.3	0.2	-2.8
M+H	510.2		506.2		508.6		536.7		4.0	1.6	-26.5
Women with child < 5											
M	65.2	147.0			176.4	253.2	178.8	242.5		-111.3	-113.7
H	481.7	174.1			333.0	212.1	400.3	202.1		148.6	81.3
L	278.5	150.0			297.7	202.4	237.5	165.4		-19.2	41.0
P	614.6	100.6			632.9	130.2	623.3	127.1		-18.2	-8.7
M+H	546.8				509.5		579.1			37.4	-32.3
Women without child < 5											
M	196.1	246.7			283.2	285.7	272.9	272.7		-87.2	-76.8
H	305.9	183.8			225.3	196.9	252.2	193.8		80.7	53.7
L	310.4	163.6			307.6	204.8	285.6	186.6		2.9	24.8
P	627.6	113.9			623.9	135.9	629.3	138.0		3.6	-1.7
M+H	502.0				508.5		525.1			-6.5	-23.1

Source: Computations are based on the AHTUS, ISER and the German Zeitbudgeterhebung

3.2 Behind the average

Because average hours in a certain activity are the product of the hours of those performing this activity times the participation rate, averages may hide important phenomena. In time-diary data an additional problem arises because not all classified as employed, for example, are actually working during the sample day. Time-use patterns over a longer period, say a week or a year, refer usually to an artificial week composed of the time-use of various individuals.⁸ Time allocation of an employed mother may look very different when she is actually working or when she has a day off. In a cross-country comparison differences in the average may in the extreme totally caused by participation rates but similar behavior of those who perform the activity or in the other extreme hours may differ with identical participation rates.

As mentioned, mothers with young children are internationally the group with the strongest changes in labor market behavior and at the same time it is the group with particularly low labor force participation in West-Germany. What distinguishes the American mother from her West-German counterpart in the allocation of working hours between the market and non-market activities? American mothers with children below five increased their participation in employment (according to the survey values) from 36% in 1975 over 58% in 1992 to 65% in 2003. An 80% increase. By contrast, the employment-population rate of German mothers with young children was still at 27% in 1992 (survey value). But how different is the allocation of time between the various activities among those who participate in the market, and how does their allocation of time differ between actual working days and non-working days? Is the difference between the US and West-Germany limited to the difference in participation or are there even difference among those who are employed?

⁸ This caveat can only be avoided if time diaries are collected over a longer period (as in the Netherlands where the survey period is one week).

Table 3: Time allocation of women between 25 and 54 with a child below 5

Variable	1975			1992			2003			West-Germany 1992		
	obs	mean	std-dev	obs	mean	std-dev	obs	mean	std-dev	obs	mean	std-dev
M	336	102	203	267	176	253	1511	179	242	1750	65	147
H	336	409	187	267	333	212	1511	400	202	1750	482	174
L	336	297	170	267	298	202	1511	238	165	1750	279	150
P	336	632	119	267	633	130	1511	623	127	1750	615	101
MH		512			509			579			547	
.						employed						
M	125	258	264	155	295	272	964	267	255	748	191	213
H	125	309	150	155	278	202	964	350	191	748	381	166
L	125	252	170	155	252	193	964	208	159	748	260	155
P	125	621	119	155	615	123	964	615	131	748	607	101
MH		567			573			617			573	
.						employed, actually working						
M	62	451	186	95	461	196	495	429	188	471	313	190
H	62	254	121	95	208	156	495	281	155	471	347	156
L	62	154	102	95	176	140	495	153	126	471	204	113
P	62	582	111	95	594	123	495	577	111	471	577	93
MH		705			670			710			659	
.						employed but not at work						
M	63	0	0	60	0	0	469	0	0	277	0	0
H	63	383	154	60	402	216	469	463	192	277	436	167
L	63	383	154	60	386	203	469	299	166	277	350	171
P	63	674	108	60	652	115	469	677	138	277	654	96
MH		383			402			463			436	
.						not employed						
M	211	17	75	112	15	76	547	17	80	1002	19	69
H	211	464	183	112	408	203	547	493	188	1002	519	162
L	211	321	165	112	360	199	547	292	164	1002	285	147
P	211	637	120	112	657	137	547	638	118	1002	617	100
MH		481			423			510			537	

In the US employed mothers of young children spend about three hours more (182 minutes in 2003, 196 minutes in 1992, 129 minutes in 1975) on household activities when not working compared to actual working days. On non-working days household production hours converge to but remain below those of non-employed mothers (see Table 3). In other words, working mothers rely on strong intertemporal substitution of market and household activities. By contrast, average hours worked of employed German mothers were substantially lower than in the US even at working days implying a large share of part-time employment. Although household production hours of employed German mothers on non-working days resembles that of American mothers intertemporal substitution is on average less strong than in the US (Table 3 last columns).

A stark contrast between the US and West-Germany occurs for child-care activities (Table 4). Child-care hours rise by two thirds between a working and non-working day (1975 and 1992 surveys) but only by one fifth in West-Germany. Not a surprise, because it is consistent with the high share of part-time work among mothers with young children in West-Germany who already spent 110 minutes per day on child-care even on working day.

Table 4: Childcare activities for women 25 to 54 years with a child below 5

Variable	Obs	1975		Obs	1992		Obs	2003		West-Germany 1992		
		Mean	Std. Dev.		Mean	Std. Dev.		Mean	Std. Dev.	Obs	Mean	Std. Dev.
					all							
Child-care	336	102	95	267	89	99	1511	160	132	1750	163	107
					employed							
Child-care	125	80	92	155	79	92	964	142	121	748	118	84
					employed actually working							
Child-care	62	62	60	95	65	76	495	125	98	471	110	82
					employed but not at work							
Child-care	63	104	119	60	104	112	469	170	148	277	131	86
					not employed							
Child-care	211	114	95	112	104	106	547	193	145	1002	179	110

When using the 1992 US survey the German-US difference in time devoted to childcare plausibly fit the shares of children in formal daycare, which is almost three times as high in the than in West-Germany. But the 2003 ATUS figure does not fit plausibly in this picture (see Table 5).

Table 5: Child-care hours and formal daycare

	Women	Child-care [hours] men	Women + men	Market work women + men [hours]	% of children in formal daycare
US 1992	11	4	15	62	54
US 2003	19	9	28	66	
G 1992	19	7	26	57	19

Source: AHTUS, German Zeitbudgeterhebung, OECD

4. What may cause the transatlantic difference in market work?

Generally the households' decision to produce at home or to buy in the market depends on the ratio of opportunity costs over market costs if one abstracts from rigidities, habits etc. If opportunity costs are lower than market costs (i.e., if the ratio opportunity-costs/ market –costs is less than one) it is favorable to produce at home and v.v. Opportunity costs (OC) for a specific product depend on the own wage (w_{own}) net of taxes and social security contributions (t_{own})⁹ minus transfers or subsidies (sub_{own} , which may be conditional on non-employment, such as some forms of parental subsidies) and the productivity of household production (A_{home}).

$$OC = w_{own} * A_{home}^{-1} * (1 - t_{own}) * (1 - sub_{home})$$

The market-costs (MC) of a certain product depend on the wage (w_{market})¹⁰ of the provider plus taxes (like VAT) and employers social security contributions (t_{market}) minus eventual subsidies for the product (sub_{market}) and the productivity of market production (A_{market}).¹¹

$$MC = w_{market} * A_{market}^{-1} * (1 + t_{market}) * (1 - sub_{market})$$

The right hand side of the ratio of OC over MC thus has four parts: the ratio of the own wage over that of the professional provider, the ratio of market production over the productivity of home production, the ratio of own taxes over the taxation of market production (the tax wedge), and the ratio of subsidies.

$$\frac{OC}{MC} = \frac{w_{own}}{w_{market}} * \frac{A_{market}}{A_{home}} * \frac{(1 - t_{own})}{(1 + t_{market})} * \frac{(1 - sub_{home})}{(1 - sub_{market})}$$

⁹ Social security contributions only if they represent a quasi tax. If they present individual rights, like pensions, they may be regarded as savings rather than taxes.

¹⁰ 'market' is used as a synonym for the official economy and includes the public sector.

¹¹ Market provision may require additional costs such as transport costs.

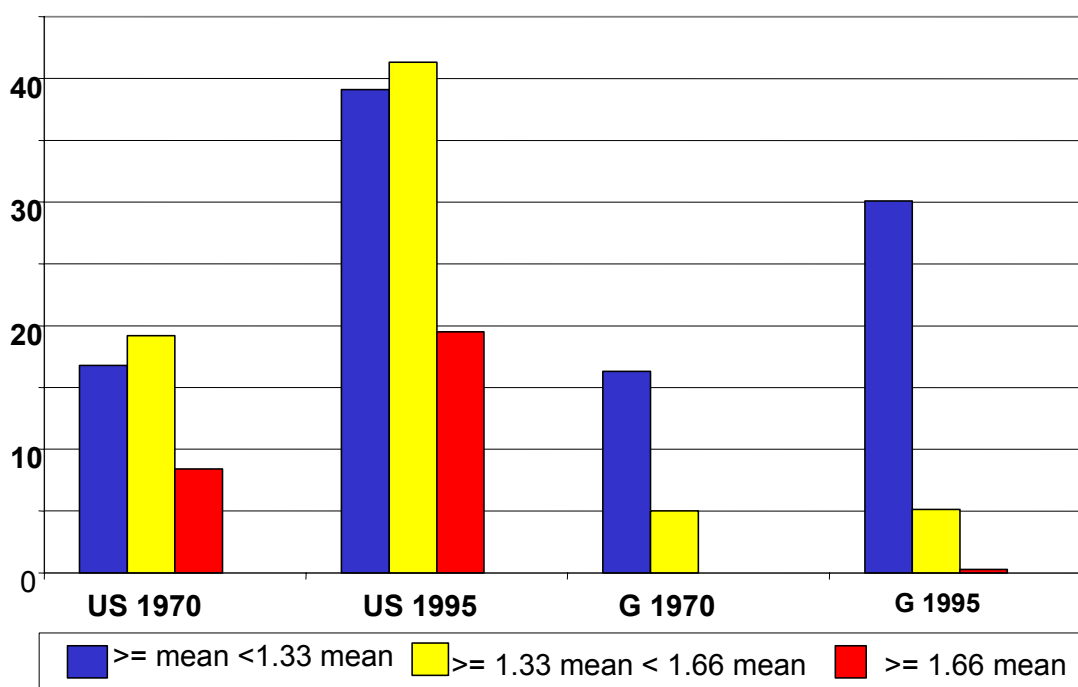
In principle high relative wages of the household provider and high relative productivity of the professional provider favor market provision. Since the wedge is less than 1, household production requires that the worker in the market have a higher wage than the household and/or higher productivity. Subsidies for market production shift the odds in favor of the market and subsidies for non-employment shift it in the other direction. Institutional arrangements that affect relative wages, such as collective bargaining or minimum wages, rates and modes of taxation, and programs that reduce the cost of market substitutes for household production, such as child care subsidies or supported day care or schooling, will influence the decisions. So too will programs that improve opportunities for the women who do traditionally most household work, such as affirmative action and equal opportunity programs.

In some cases the market wage of an individual provider may be relevant, for example for a cleaner, but in many other cases the average wages of the industry are relevant. In Freeman/ Schettkat (1999) we found an astonishing similarity of average wages in industries relative to the mean wage for the US and Germany (West). In other words, trade, restaurants/ hotels are low-wage industries in the US and in Germany. The spread of wages within each industry is wider in the US than in Germany reflecting the wider spread of skills in the US. But the averages of the wider US within-industry wage distribution and the narrower German within-industry wage distribution relative to the country's overall mean wage are similar. In other words, US companies combine a wider range of skills in their production processes whereas German firms have a more homogeneous skill structure.

Although relative direct wage costs are similar for identical industries in both countries, gross wage costs are not. The advanced US companies provide non-wage benefits comparable to German standards but some companies do not. Applying only the legal minimum raises wage costs by only marginally in the US but in Germany the standard substantially because social security is basically universal in Germany. Not the direct wage costs but the indirect wage costs cause the difference especially at the low-skill end. These are supply side factors but markets have to sides, a supply and a demand side. For the latter the differences are more dramatic especially in a dynamic perspective.

The share of women in the wage groups above the mean increased substantially in the US but much less in West-Germany. In 1970 about 19% of employees earning between one third and two thirds above the mean were women in the US but in Germany this share was only 5% (see Figure 3). By the mid 1990s the female share in this wage group was more than 40% in the US but still 5% in Germany. For the next highest wage group of those who earn more than two thirds above the mean the trends are even more dramatic. In the US the female share rose from 8% in 1970 to roughly 20% in 1995 but in Germany the female share remained close to zero.

Figure 3: The share of women in higher wage groups



Source: computations based on the CGAS, Freeman/ Schettkat

In part these trends may be explained by the share of women with tertiary education, which rose earlier and is still substantially higher in the US than in Germany. In the US 45% of women in the older cohorts (those born between 1935 and 1944) already had a tertiary education, a share which is only reached in the youngest cohort (those born between 1965 and 1974) in Germany. Thus, the female shares in tertiary education are higher in the US, which has supported the rise of women in the income

hierarchy. Better education leads to higher labor force participation and to higher relative wages shifting also the odds of economic reasoning to market work and market provision. In addition the supply of labor with comparatively low skills (mainly but not exclusively through migration) eased the substitution of household production by market provision.

Table 6: Women with tertiary education by cohorts (in % of population)

	Tertiary Education			Total
	25-34	35-54	55-64	
Born	1965-74	1945-64	1935-1944	
United States	53.4	50.0	45.0	50.3
Germany	45.8	39.1	29.3	38.7
Netherlands	50.5	41.8	37.5	43.9
Sweden	53.1	53.8	51.3	53.2
United Kingdom	46.8	47.0	36.2	45.6

Source: OECD

Appendix-Tables

Table A1: Definition of market work (M), household production (H), leisure (L) and personal time (P)

Code	Label	broad category
AV1	Time in paid work	market work
AV2	Time in paid work at home	"
AV3	Time in paid work, second job	"
AV4	Time in school, classes	"
AV5	Time in travel to/from work	"
AV6	Time cooking, washing up	household production
AV7	Time spent doing housework	"
AV8	Time spent doing odd jobs	"
AV9	Time spent gardening	"
AV10	Time spent shopping	"
AV11	Time spent in childcare	"
AV12	Time spent during domestic travel	"
AV13	Time for dressing/toilet	personal
AV14	Time spent receiving personal services	"
AV15	Time spent eating meals and snacks	"
AV16	Time spent sleeping	"
AV17	Time spent during travel for leisure	leisure
AV18	Time spent on excursions	"
AV19	Time spent actively participating in sports	"
AV20	Time spent passively participating in sports	"
AV21	Time spent walking	"
AV22	Time in religious activities	"
AV23	Time doing civic duties	"
AV24	Time at the cinema or theatre	"
AV25	Time at dances or parties	"
AV26	Time at social clubs	personal*
AV27	Time at pubs	personal*
AV28	Time at restaurants	personal*
AV29	Time visiting friends	"
AV30	Time listening to radio	"
AV31	Time watching the television or video	"
AV32	Time listening to records, tapes, cds	"
AV33	Time in study	"
AV34	Time reading books	"
AV35	Time reading papers, magazines	"
AV36	Time relaxing	"
AV37	Time in conversation	"
AV38	Time entertaining friends	"
AV39	Time knitting, sewing, etc	"
AV40	Time in other hobbies or past-times	"
AV41	Time in unclassifiable ac	"

* we classified these categories as personal time because not all survey distinguish AV15 and AV26 to AV28. The original MTU classification allocated meals in cantina to AV28 but in other survey meals at work are included in AV1, we reclassified the German categories in accordance with the other surveys.

Table A2: Changes in household production, 2003 – 1992.

		Men 25-54					diff 03-1992		% of dH	
		1966	1975	1985	1992	2003	min/day	hours/wee	hours/year	
H		108.5	135.7	168.8	141.9	174.7	32.8	3.8	199.5	100.0
AV6	Time cooking, washing up	10.6	11.3	26.7	15.9	16.8	0.8	0.1	5.0	2.5
AV7	Time spent doing housework	10.6	18.0	26.1	27.1	20.9	-6.2	-0.7	-37.6	-18.8
AV8	Time spent doing odd jobs	25.2	36.3	35.6	33.4	35.2	1.8	0.2	11.1	5.5
AV9	Time spent gardening	1.7	3.4	4.0	2.4	12.7	10.3	1.2	62.8	31.5
AV10	Time spent shopping	14.5	16.3	23.2	18.2	21.5	3.3	0.4	20.2	10.1
AV11	Time spent in childcare	12.8	12.0	16.0	8.4	26.3	17.9	2.1	108.9	54.6
AV12	Time spent during domestic trav	33.2	38.4	37.3	36.5	41.3	4.8	0.6	29.2	14.6
men 25-54 kid<5										
H			151.5		150.0	221.2	71.2	8.3	433.1	100.0
AV6	Time cooking, washing up		10.1		15.0	17.7	2.7	0.3	16.4	3.8
AV7	Time spent doing housework		14.4		24.5	21.6	-2.9	-0.3	-17.8	-4.1
AV8	Time spent doing odd jobs		34.3		32.9	32.2	-0.8	-0.1	-4.6	-1.1
AV9	Time spent gardening		3.4		0.2	11.4	11.2	1.3	68.3	15.8
AV10	Time spent shopping		19.9		17.5	23.3	5.8	0.7	35.2	8.1
AV11	Time spent in childcare		31.4		32.1	75.4	43.3	5.0	263.3	60.8
AV12	Time spent during domestic travel		38.1		27.7	39.6	11.9	1.4	72.3	16.7
women 25-54										
H		363.2	311.4	258.1	238.0	283.9	45.9	5.4	279.4	100.0
AV6	Time cooking, washing up	112.9	89.5	59.2	44.8	46.8	2.0	0.2	11.9	4.3
AV7	Time spent doing housework	106.5	76.7	54.5	61.4	57.0	-4.4	-0.5	-26.6	-9.5
AV8	Time spent doing odd jobs	26.2	23.0	31.6	26.4	33.7	7.2	0.8	44.1	15.8
AV9	Time spent gardening	2.9	4.1	4.6	2.3	7.0	4.7	0.6	28.8	10.3
AV10	Time spent shopping	25.0	32.0	32.0	33.8	32.9	-0.9	-0.1	-5.4	-1.9
AV11	Time spent in childcare	50.4	40.7	33.7	25.9	57.5	31.6	3.7	192.3	68.8
AV12	Time spent during domestic trav	39.3	45.4	42.5	43.4	49.1	5.7	0.7	34.4	12.3
women 25-54 kid<5										
H			409.4		333.0	400.3	67.3	7.9	409.4	100.0
AV6	Time cooking, washing up		106.6		57.8	62.7	4.9	0.6	30.1	7.3
AV7	Time spent doing housework		92.8		71.4	63.7	-7.6	-0.9	-46.5	-11.4
AV8	Time spent doing odd jobs		23.7		28.0	20.7	-7.3	-0.9	-44.5	-10.9
AV9	Time spent gardening		4.7		0.7	6.4	5.7	0.7	34.7	8.5
AV10	Time spent shopping		33.2		33.0	34.4	1.4	0.2	8.7	2.1
AV11	Time spent in childcare		102.3		89.5	159.8	70.4	8.2	428.2	104.6
AV12	Time spent during domestic travel		46.1		52.7	52.5	-0.2	0.0	-1.2	-0.3
women no kid below5										
H					225.3	252.2	26.9	3.1	163.9	100.0
AV6	Time cooking, washing up				43.1	42.4	-0.7	-0.1	-4.0	-2.4
AV7	Time spent doing housework				60.0	55.2	-4.9	-0.6	-29.6	-18.1
AV8	Time spent doing odd jobs				26.2	37.2	11.0	1.3	66.9	40.8
AV9	Time spent gardening				2.5	7.2	4.7	0.5	28.5	17.4
AV10	Time spent shopping				33.9	32.5	-1.4	-0.2	-8.6	-5.2
AV11	Time spent in childcare				17.3	29.6	12.2	1.4	74.4	45.4
AV12	Time spent during domestic travel				42.2	48.1	6.0	0.7	36.3	22.2

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