

# **Fertility tempo and quantum:**

## **An empirical test of major theories with data from four FFS-countries**

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### **1. Purpose**

The aim of the study is to confront predictions derived from a set of fertility theories with empirical outcomes stemming from the "Fertility and Family Survey" (FFS) conducted in four European countries. These countries are Belgium, Germany (former FRG), Italy and Hungary, and the survey dates were respectively 1991, 1992, 1995-96 and 1993. In 1995 these nations had period fertility rates that were substantially below the replacement level: 1.55 in Belgium, 1.34 in the former FRG, 1.22 in Italy and 1.57 in Hungary. The estimated levels of completed cohort total fertility for the generations born in 1962-65 were equally low: 1.76 in Belgium, 1.45 in the former FRG, 1.59 in Italy and 1.56 in Hungary (Council of Europe, 1997: 53-54). These low fertility levels are the outcomes of both timing and quantum related fertility decisions. Hence, this study uses two types of dependent variables: (i) two indicators related to the timing of first parenthood and (ii) an indicator of overall fertility.

On the explanatory side we have used a set of fertility theories as a source of inspiration. We shall refer to these theories as follows:

- (i) the theory of female economic autonomy;
- (ii) the theory of relative economic deprivation;
- (iii) the theory of ideational change;
- (iv) the extra effect of (intergenerational) union instability.

A more detailed description of these theories is presented in the next section. But, already at this point, we would like to stress that we do not consider these theories as mutually exclusive (cf. Lesthaeghe, 1998). Rather, we would like to find out how, in four different national contexts, the various mechanisms contribute to the explanation of the timing and quantum differentials in fertility. We should also bear in mind that the operationalisations via the FFS-

variables are not optimal so that only a partial empirical testing can be provided. This aspect will be taken up in detail in section 3.

## **2. Theoretical foundations**

As just indicated, four major theories have been chosen as a starting point. The theory of female economic autonomy is particularly, but not exclusively, advanced by neo-classic economists (e.g. Becker, 1981), and it proposes a chain of causality running from increased female education to increased female labour force participation, and therefore highly enhanced opportunity costs to women associated with domestic inputs and childbearing/rearing. Fertility is postponed and lowered as a response to this increase in opportunity costs. Moreover, increased female economic autonomy would also lead to less dependence on a partner or on marriage, and it would, furthermore, induce greater union instability and less remarriage. A change in value orientations would equally occur, and those immediately affected would deal with the articulation of female careers, female anticipation and symmetrical gender roles.

The theory of relative economic deprivation is primarily due to R. Easterlin and colleagues (1976, 1990, 1991), and the causal chain starts with the juxtaposition of (i) consumption aspirations and (ii) employment, career and income opportunities of successive male cohorts. Generations socialized in periods of economic expansion derive high consumption aspirations during their socialization period, and if these would be frustrated as a result of scarcer opportunities - whatever the cause - such cohorts would delay all major family formation events. Moreover, there would be an extra impulse for increased female labour force participation at all levels of schooling as well since the satisfaction of high consumption aspirations requires a supplement to the household income. This has an extra effect in delaying and lowering fertility, also for women without strong career orientation. In this theory, materialistic preoccupations play a major role, and enhanced competition in the labour market fosters the utilitarian or materialist form of individualism. By the same token, it also weakens values associated with community integration (e.g. solidarity; community involvement).

The ideational theory, which is more typical for sociologists and social psychologists, starts with the long term trend in western societies toward expressive individualism and the articulation of Maslow's "higher order needs", such as self-fulfilment, freedom of choice, secularism, emancipation, and the refusal of institutional morality and patronage. At the

macro level these ideational changes are driven by increasing standards of living during the 20th Century but also by earlier cultural developments. A high degree of path dependency and context specificity is therefore expected. Also the cohort approach, with its inherent articulation of the importance of the socialization period, is typical for this line of thinking. The growth of expressive individualism - with secularization as a long term ingredient in the West - not only reduces the impact of pronatalist religious doctrines, but it promotes even more the legitimacy of individual utility calculus in all domains. By replacing asymmetrical gender roles, male authority and gender-specific divisions of labour by more egalitarian relations, the growth of expressive individualism has turned households into units characterized by the continuous evaluation of the internal patterns of exchange. All these elements weaken the traditional forms of household formation and foster greater union instability. A life fulfilment for women is simply no longer synonymous with motherhood and childrearing, but can be constructed on the basis of many other legitimate alternatives.

As already indicated, we do not consider these theories as mutually exclusive. Rather, they stress different aspects of socio-economic and cultural change in western nations, and they identify different mechanisms in a plurality of possibilities through which these changes affect fertility. Very often, the mechanisms in these theories are interwoven, several intermediate variables are shared, and many effects can be seen as mutually reinforcing (interactions). All three also predict similar outcomes: later parenthood, lower fertility, greater union instability, less marriage and above all an unfolding of household types.

To these three theories we would like to add one major extra effect to the analysis, i.e. that of greater union instability. This variable can be considered as an intermediate one since the three theories mentioned above also predict this outcome. The effect is not only a purely mechanistic one in the sense that union instability leads to a loss of exposure and therefore to delays and lower fertility. A psychological effect can be added: earlier experience of separation (of cohabitants) or divorce could cause a greater reluctance to make new firm commitments such as a second marriage or continued childbearing. Also reconstituted couples, either through cohabitation or remarriage, may bring together the children of both partners into the household so that no need is felt to start procreation all over again within the new partnership. The enhanced reluctance in making firm commitments subsequent to union instability is also central to the thesis of intergenerational transmission of weaker family orientations. Children with an experience of parental separation or divorce or stemming from reconstituted households would be more likely to leave home earlier and/or to opt for cohabitation rather than marriage (e.g. Kiernan, 1992; Kiernan and Hobcraft, 1997). They

could therefore have a higher risk of becoming a single parent (if women) or of experiencing instability themselves. The components "loss of exposure" and "reluctance" need to be added to the model, not only because of the substantial fertility lowering potential in a given society, but also because the future trends in separation and divorce may be different among societies.

### **3. Operationalization in the FFS**

The FFS data permit the measurement of the three dependent variables without any problems. These variables are:

- (i) "early start", defined as a 1-0 variable, taking the value of unity if the age at first motherhood is earlier than 23 years. The analyses with this variable are performed on all women aged 23 and over who have ever been in a union, i.e. either cohabitation or marriage. The age of 23 is also chosen to minimize the number of respondents who would still be students.
- (ii) "late start" (or "no start"), also defined as a 1-0 outcome, taking the value of unity if the age at first motherhood is not before age 30. The analyses pertain to all women ever in a union aged 30 and over.
- (iii) "children ever born" (CEB) or parity as a measure of overall fertility. Analyses are performed for all women ever in a union, but separately for the cohorts aged 20-29 and 30-39 at the time of the survey.

The independent variables require more explanation. An overview is given in Chart 1.

#### **3.1. Female economic autonomy indicators**

The theory of female economic autonomy expects the largest negative effect on fertility among the subgroups of women with the greatest financial independence and the highest opportunity costs. These should be the better educated women with greater access to professional careers and a stronger job commitment. These three aspects can be operationalised with the FFS-variables. In each case a dichotomy was constructed, and the first variable "female career development and orientation" is made up of the eight combinations of these three dichotomies:

- (i) education beyond the secondary level (= 1) vs. others (= 0);
- (ii) the first main job is white collar and at the professional level (= 1) vs. others (= 0);

Chart 1: Overview of variables used in the logistic regressions and multiple classification analysis (MCA)

Dependent variable & subsample selection	1. Early start (= first birth prior to age 23; women aged 23+ ever in a union)	2. Late start (= first birth not before age 30; women aged 30+ ever in a union)	3. Overall fertility (children ever born, women aged 20-29 and 30-39 ever in a union)
Method	logistic regression	logistic regression	MCA
Independent variables			
I. Female career development and orientation	8 categories: combination of 3 dichotomies *female education beyond secondary *first job at professional level *willingness to sacrifice for job:		
II. SES & deprivation	4 categories: combination of 2 dichotomies: *female education not beyond lower secondary *female ever employed		11 categories: combination of 4 dichotomies: *female educ. not beyond secondary *female ever employed *partner blue collar job *female spells of unemployment/housewife
III. Union instability	4 categories: combinations of 2 dichotomies *early home leaving (before 18) and/or parental divorce *own divorce/separation and/or multiple partnerships		
IV. Religiosity	5 categories of Sunday service attendance or of importance of God (Belgium)		
V. Urbanity	2 categories of current residence in towns (10.000+) or villages (<10.000)		
VI. Continuous covariates	None	None	Age, age squared Duration since first union, duration squared

- (iii) in the attitudinal job commitment battery, a willingness to make sacrifices to advance careers is indicated (= 1) vs. others (= 0) (V707D)

The eight classes in the first variable will then range from 0-0-0 (none of the characteristics) to 1-1-1 (all three jointly). The combinations not only permit comparisons between combinations that are different with respect to one characteristic only, but also the identification of specific interaction effects between components. On the whole, it is clear that this first variable contrasts women with higher human capital to all others and furthermore refines distinctions among those with higher education. Via these eight combinations we should be able to pick up the "Becker-effects" rather well.

### 3.2. Relative economic deprivation indicators

This theory focuses on relative income deprivation among men. However, the FFS did not record male incomes, nor is there any indicator of consumption orientation in the attitudinal batteries. Hence, the operationalization of this type of effect will be quite inadequate.

The measurements are based on the use of more remote proxies:

- (i) male partner in blue collar occupation (= 1) vs others (= 0);
- (ii) female education not beyond lower secondary (= 1) vs others (= 0);
- (iii) woman has ever been employed (= 1) vs never employed (= 0);
- (iv) woman has had spells of unemployment or as a housewife (if ever employed) (= 1) vs all other (= 0).

On the basis of these dichotomies, eleven original combinations were made. These eleven classes for variable 2 "SES & deprivation" were used in the analysis of overall fertility (CEB), but were further reduced to four categories only in the analysis of the timing of fertility. In the latter instance we have only retained ever versus never employment of women combined with female education below or above lower secondary.

Many problems with the operationalization of the Easterlin theory stem from the lack of information concerning the male partner. Not only is his income not known, but also his level of education is missing. Furthermore male occupations are not reported or coded as carefully as female occupations in the FFS-data used here.

In contrast to the previous variable, this set of combinations contrasts the households with lower socio-economic status (SES) to the middle and upper groups, since we expect the relative economic deprivation effect to be strongest among the former. Furthermore, some

additional refining within the lower SES-group is made via the presence or absence of unemployment spells for women.

To sum up, the explanatory variables in the FFS do not permit the construction of an adequate operationalization of the key ingredients of the Easterlin theory mainly because of a lack of information on the male partner. The current operationalization is far from satisfactory and we should keep this in mind when interpreting the statistical results.

### 3.3. Ideational factors

The FFS originally set out with the intention of incorporating several attitudinal batteries that should capture the various dimensions of ideational heterogeneity.

Unfortunately not many of these found their way in the questionnaires or FFS-recode files, or countries chose to use different batteries so that cross-national comparability is lost. The battery present in most FFS national data files pertain to the degree of religiosity or secularization, but also here different operationalizations prevail in the questionnaires. The only variables that could be used in this four country comparison pertain to the frequency of Sunday service attendance (5 categories) in Germany, Italy and Hungary, and the importance of God (5 categories) in Belgium.

Obviously this meagre harvest means that the measurement of the ideational factor is going to be far from satisfactory, the sole source of solace being the fact that religiosity-secularization is often a core (but more and more dépassé) ingredient of the dimension of expressive individualism. For a more adequate treatment of this factor we have to refer to analyses performed with the data of the European Values Surveys (EVS) of 1990 (e.g. Lesthaeghe and Moors, 1995).

### 3.4. Union instability

The FFS has ample information on the respondents' union histories and also on the parental households. This has permitted the construction of a variable consisting of four combinations using the following dichotomies:

- (i) early home leaving (before age 18) and/or parental divorce (= 1) versus absence of these events (= 0);
- (ii) experience of divorce or partnership disruption and/or presence of multiple partnerships (= 1) versus no such experience (= 0).

### 3.5. Urban-rural contrast

It was also decided to include this simple dichotomy in the analysis in order to see whether or not the traditional urban-rural contrast would still prevail once allowance has been made for the statistical effects of the previous variables. The dichotomy is based on current residence in municipalities with fewer or more than 10.000 population.

## **4. Empirical results**

### 4.1. Methodology

Since the variables measuring an early or a late start of childbearing are dichotomous, a straightforward logistic regression has been performed on them. These regressions introduce all variables simultaneously and they are executed separately for each of the four countries. The results presented in the tables are all net effects, i.e. the effects of each predictor given that all other independent variables are present in the equation as well. The analysis of overall fertility (CEB) takes the form of a classic Multiple Classification Analysis (MCA) since the dependent variable is a continuous one. In addition to the independent variables described in the previous section, the equation also incorporates the continuous predictors age, age squared, duration since first union and duration squared. The latter two capture the effect of length of exposure and the former add the biological effect of reduced fertility with age. The results given in the tables are again net effects of each predictor with all other predictors in the equation.

### 4.2. Who are the early and the later starters?

Of the four countries considered Italy has the latest mean age at first birth (27.5 in 1994), and Hungary by far the earliest (22.9 in 1996). Belgium (26.8 in 1992) and the former FRG (26.6 in 1994) occupy the intermediate positions (Council of Europe, 1997: 48). These differences are reflected in the variables "early start" and "late" or "no start" used here, with Italy having 39.1% of women aged 23+ ever in a union starting procreation before age 23 and Hungary having no less than 65.3%. Similarly, among women aged 30+ ever in a union, Italy has by far the highest percentage not having started procreation before age 30, i.e. 15.1%,



Table 1: Net effect of female career development and orientation on the proportions starting childbearing before age 23 among women 23+ ever in a union - relative risks (exp B) from logistic regressions in four FFS countries

			<u>Belgium</u>	<u>Germany</u>	<u>Italy</u>	<u>Hungary</u>
			N=1896	N= 3189	N=1462	N= 2271
			<u>%= 38.8</u>	<u>%=37.3</u>	<u>%=39.1</u>	<u>%=65.3</u>
<u>Female career developmen &amp; orientation</u>						
<u>Educ.</u>	<u>First job</u>	<u>Willingness</u>	[***]	[***]	[***]	[***]
<u>beyond</u>	<u>professional</u>	<u>to sacrifice</u>				
<u>secondary</u>		<u>for job</u>				
0	0	0(ref)	1.00	1.00	1.00	1.00
1	0	0	.14***	.60*	(.01ns)	.32***
0	1	0	.65ns	.60***	.64ns	.84ns
1	1	0	.09***	.63*	(.14**)	.25***
0	0	1	1.08ns	1.59**	1.11ns	1.04ns
1	0	1	.25***	.94ns	(.10ns)	(.78ns)
0	1	1	(1.18ns)	.72ns	.60ns	.49*
1	1	1	(.23**)	.61ns	.08**	(.29**)

Note: ( ) = less than 50 cases

\*\*\* =  $p \leq .001$     \*\* =  $p \leq .01$     \* =  $p \leq .05$     ns = not significant

Table 2: Net effect of female career development and orientation on the proportions not starting childbearing before age 30 among women 30+ ever in a union - Relative risks (exp B) from logistic regressions in four FFS countries

			<u>Belgium</u>	<u>Germany</u>	<u>Italy</u>	<u>Hungary</u>
			N=1367	N= 2213	N=1134	N= 1569
			<u>%= 6.1</u>	<u>%=8.0</u>	<u>%=15.1</u>	<u>%=4.5</u>
<u>Female career developmen &amp; orientation</u>						
<u>Educ.</u>	<u>First job</u>	<u>Willingness</u>				
<u>beyond</u>	<u>professional</u>	<u>to sacrifice</u>	[***]	[ns]	[***]	[ns]
<u>secondary</u>		<u>for job</u>				
0	0	0(ref)	1.00	1.00	1.00	1.00
1	0	0	3.90***	1.27ns	(1.76ns)	(2.70ns)
0	1	0	(8.68***)	1.10ns	1.36ns	1.58ns
1	1	0	2.26ns	1.42ns	(2.74*)	2.44*
0	0	1	2.06*	.41*	1.25ns	.80ns
1	0	1	3.10*	(.70ns)	(8.19***)	(6.78ns)
0	1	1	(2.60ns)	1.79ns	1.91*	(.97ns)
1	1	1	(.01ns)	1.06ns	4.55***	(1.66ns)

Note: ( ) = less than 50 cases

\*\*\* =  $p \leq .001$     \*\* =  $p \leq .01$     \* =  $p \leq .05$     ns = not significant

Table 3: Net effect of female employment and lower education on the proportions starting childbearing before age 23 among women 23+ ever in a union - Relative risks (exp B) from logistic regressions in four FFS countries

		<u>Belgium</u>	<u>Germany</u>	<u>Italy</u>	<u>Hungary</u>
		N=1896	N= 3189	N=1462	N= 2271
		<u>%=38.8</u>	<u>%=37.3</u>	<u>%=39.1</u>	<u>%=65.3</u>
<u>Female employment &amp; lower education</u>					
<u>Ever</u>	<u>Educ. not beyond lower</u>	[***]	[***]	[***]	[***]
<u>employed</u>	<u>secondary</u>				
1	0 (ref)	1.00	1.00	1.00	1.00
1	1	2.20***	1.55***	2.47***	2.24***
0	0	(4.47***)	2.84***	1.37ns	(1.45ns)
0	1	(3.09***)	4.26***	5.20***	-

Note: ( ) = less than 50 cases

\*\*\* =  $p \leq .001$     \*\* =  $p \leq .01$     \* =  $p \leq .05$     ns = not significant

Table 4: Net effect of female employment and lower education on the proportions not starting childbearing before age 30 among women 30+ ever in a union - Relative risks (exp B) from logistic regressions in four FFS countries

		<u>Belgium</u>	<u>Germany</u>	<u>Italy</u>	<u>Hungary</u>
		N=1367	N= 2213	N=1134	N= 1569
		%=6.1	%=8.0	%=15.1	%=4.5
<u>Female employment &amp; lower education</u>					
<u>Ever employed</u>	<u>Educ. not beyond lower secondary</u>	[ns]	[ns]	[***]	[ns]
1	0 (ref)	1.00	1.00	1.00	1.00
1	1	.53ns	.69ns	.34***	.61ns
0	0	(.01ns)	(.60ns)	.64ns	(.02ns)
0	1	(1.32ns)	.66ns	.11***	(.02ns)

Note: ( ) = less than 50 cases

\*\*\* =  $p \leq .001$     \*\* =  $p \leq .01$     \* =  $p \leq .05$     ns = not significant

while this is the rarest condition in Hungary with merely 4.5%. In this respect, the FFS data fit the national registration data.

The net effects (all other variables being present in the logistic regressions) of the 8 categories of the independent variable "Female career development and orientation" are given in tables 1 and 2 for early and late starting respectively. The outcomes are strongly consistent with the theoretical expectations. Women with either higher education (beyond secondary) and/or a professional career are systematically less likely to start childbearing before age 23 and considerably more likely to postpone this event until after age 30. These effects are visible in all four countries. The attitudinal attribute "willingness to sacrifice for career" produces no extra effect with respect to early starting, but increases the relative risk of late starting among women with higher education. Hence, the female economic autonomy thesis draws ample support from these results: women with higher education postpone their procreation to a considerably greater degree than women with lower and middle levels of schooling. This tends to be enhanced further if higher education is combined with a professional career start and/or a stronger attitude toward career orientation. Similarly, among women with less than higher education, a professional career start also leads to more postponement than witnessed in the reference category (i.e. women without higher education, no professional career start, not willing to sacrifice).

The net effects at the other end of the spectrum, i.e. for lower female education (not beyond lower secondary) are given in tables 3 and 4 in combination with the ever/never employed dichotomy. The latter distinction also allows for the identification of women who opted from the start for the role of housewife. A choice for the role of housewife systematically increases the relative risks for an early start in the four countries, and if this role is combined with higher education than lower secondary, this likelihood is enhanced even further. Clearly, better educated women who opt from the start for a career as housewife have the earliest schedule of procreation of all. The Easterlin-effect should be most noticeable among women with lower education and who have taken up employment in order to supplement the household income. Compared to housewives in Germany and Belgium, their likelihood for an early start is lower, but the pattern is less clear in Italy and Hungary. Compared to women who have equally been employed but who have better education beyond the lower secondary level, their procreation is systematically earlier in all four countries.

From these tables an overall ranking seems to emerge: the earliest procreation is found among better educated women who chose to be housewives from the start, then among other housewives, followed by ever employed women with lower education. Later procreation is

Table 5: Net effects of family or union disruptions on the proportions starting childbearing before age 23 among women 23+ ever in a union - Relative risks (exp B) from logistic regressions in four FFS-countries

			<u>Belgium</u>	<u>Germany</u>	<u>Italy</u>	<u>Hungary</u>
			N=1896	N= 3189	N=1462	N= 2271
			<u>%=38.8</u>	<u>%=37.3</u>	<u>%=39.1</u>	<u>%=65.3</u>
<u>Indicators of family or union disruption</u>						
<u>Parental div/sep. and/or early home leaving</u>	<u>Own divorce/sep. and/or multiple partnerships</u>		[***]	[***]	[***]	[***]
0	0 (ref)		1.00	1.00	1.00	1.00
1	0		2.60***	2.33***	5.53***	1.87***
0	1		2.00**	2.25***	(4.75***)	1.18ns
1	1		5.67***	5.34***	(9.50***)	2.22***

Note: ( ) = less than 50 cases

\*\*\* =  $p \leq .001$     \*\* =  $p \leq .01$     \* =  $p \leq .05$     ns = not significant

Table 6: Net effects of family or union disruptions on the proportions not starting childbearing before age 30 among women 30+ ever in a union - Relative risks (exp B) from logistic regressions in four FFS-countries

		<u>Belgium</u>	<u>Germany</u>	<u>Italy</u>	<u>Hungary</u>
		N=1367	2213	1134	1569
		<u>%=6.1</u>	<u>8.0</u>	<u>15.1</u>	<u>4.5</u>
<u>Indicators of family or union disruption</u>					
<u>Early home leaving and/or parental divorce/separation</u>	<u>Own divorce/sep. and/or multiple partnerships</u>	[*]	[ns]	[*]	[ns]
0	0 (ref)	1.00	1.00	1.00	1.00
1	0	.81ns	.72ns	.69ns	.90ns
0	1	2.48*	.62ns	(.06*)	.99ns
1	1	2.16ns	.58ns	(.33ns)	2.04ns

Note: ( ) = less than 50 cases

\*\*\* =  $p \leq .001$

\*\* =  $p \leq .01$

\* =  $p \leq .05$

ns = not significant

found among better educated women who have/are being employed. Among them, women with a professional career start and/or a strong commitment are the latest. All this is very much in line with the female economic autonomy thesis, but we should recall that the relative economic deprivation effect is at a considerable disadvantage for a lack of variables concerning the male partners and indicators of material consumption orientation.

The net effects of problems in the family of origin or of the respondents' own union disruptions on early and late starting are presented in tables 5 and 6. Compared to respondents without any such experiences, problems in the parental family (parental divorce, home leaving before age 18) lead to a significantly enhanced risk of early motherhood in all four countries. A similar association is equally present with multiple partnerships and/or the respondents' own union disruption, but the direction of causality may be reversed in many cases, i.e. early childbearing being a cause of union disruption. The combination of both, i.e. problems in the parental household and own union instability, is the most likely one to be associated with an early start of procreation (table 5). With respect to a late start of procreation, the net effect of problems in or with the parental household is again straightforward in the four countries: such problems reduce the likelihood of a late start compared to the population of women without any such problems (reference category). For the other combinations the results are less clear. In Belgium, the respondents' union instability leads to an increased risk of not having started prior to age 30, whereas this is not the case in Italy or Germany. On the whole, the net effects of parental or own union instability are strongly significant for earlier starting, and the statistical outcomes are much weaker with respect to late starting. The clearest finding is that the thesis of intergenerational effects, proposed by Kiernan and Hobcraft and documented for the UK, is fully corroborated by the FFS in our four countries: problems in or with the parental household lead to an earlier start of procreation.

Tables 7 and 8 contain the relative risks for an earlier or later start of childbearing associated with religiosity and urbanity. On the whole, religiosity is not strongly related in the four countries to a first birth occurring prior to age 23. This likelihood (net effect) is only significantly higher in Germany for the most secularized group without any church attendance at all. The relative risk for not having started procreation prior to age 30 is lowest for the reference group in the four countries, i.e. for persons with a weekly church attendance or who attach most importance to God. This contrast, which singles out the most religious subgroup, is clearest in Italy. In short, the net effects of religiosity often fail to be significant, and if they



Table 7: Net effects of religiosity and urbanity on the proportions starting childbearing before age 23 among women 23+ ever in a union - Relative risks (exp B) from logistic regressions for four FFS countries

	Belgium	Germany	Italy	Hungary
	N = 1896	3189	1462	2271
	<u>% = 38.8</u>	<u>37.3</u>	<u>39.1</u>	<u>65.3</u>
<u>Religiosity (a)</u>	[ns]	[***]	[ns]	[ns]
Service attendance	1.00	1.00	1.00	1.00
1 x week	1.06 ns	1.11 ns	.83ns	1.06ns
1 x month	.98ns	1.22ns	.82ns	.98ns
major festiv.	1.01ns	1.34ns	1.07ns	1.14ns
1 x year	.75ns	1.69***	.72ns	1.27ns
never				
<u>Urbanity</u>	[ns]	[***]	[*]	[***]
<10.000 inhab (ref.)	1.00	1.00	1.00	1.00
10.000+ inhab.	.85ns	.59***	.72*	.61***

Notes:

(a) for Belgium the categories are respectively: belief in God very important (ref), rather important, neither, rather unimportant, totally unimportant

\*\*\* =  $p \leq .001$     \*\* =  $p \leq .01$     \* =  $p \leq .05$     ns = not significant

Table 8: Net effects of religiosity and urbanity on the proportion not starting childbearing before age 30 among women 30+ ever in a union - Relative risks (exp B) from logistic regressions for four FFS countries

	Belgium	Germany	Italy	Hungary
	N = 1367	2213	1134	1569
	<u>% = 6.1</u>	<u>8.0</u>	<u>15.1</u>	<u>4.5</u>
<u>Religiosity (a)</u>	[ns]	[ns]	[***]	[ns]
Service attendance 1 x week (ref)	1.00	1.00	1.00	1.00
1 x month	1.20 ns	1.87 ns	1.74*	1.27ns
major festiv.	1.18ns	1.72ns	2.23***	1.71ns
1 x year	1.60ns	1.30ns	1.33ns	1.81ns
never	1.60ns	1.82ns	3.82***	1.03ns
<u>Urbanity</u>	[ns]	[*]	[ns]	[ns]
<10.000 inhab (ref.)	1.00	1.00	1.00	1.00
10.000+ inhab.	2.56ns	1.52*	1.05ns	1.42ns

Notes:

(a) for Belgium the categories are respectively: belief in God very important (ref), rather important, neither, rather unimportant, totally unimportant

\*\*\* =  $p \leq 0.01$     \*\* =  $p \leq 0.01$     x =  $p \leq 0.05$     ns = not significant

are, they produce contrasts between either the most religious or the most secular versus the bulk of the population.

The urbanity dichotomy, finally, still seems to have retained some importance, even after controlling for all the other variables. Residence in a town or urban area (10.000+ pop.) lowers the relative risk of early starting and raises the risk of late starting (or no starting). This urbanity dichotomy produces the largest contrast in Germany and the smallest in Belgium, but the direction of the effect is uniform in all four countries. In short, even after controls for so many other relevant variables, urban living still fosters a later start of procreation. Factors other than the ones used here, but associated with urban living, are still at work.

#### 4.3. The quantum of fertility (CEB)

In 1994 or 1995, the partial period fertility rate up to age 30 ranged from 1.27 children in Hungary, to 1.01 in Belgium, 0.77 in the former GFR and only 0.66 in Italy (Council of Europe, 1997, tables I-4). Clearly, this quantum indicator is in agreement with the country ranking according to an earlier versus a later start of childbearing. These national differentials are only broadly reflected in the FFS, using the average number of children ever born (CEB) for women aged 20-29 at the time of the survey. The mean CEB for these women is highest in Hungary (1.23) as expected, but lowest in Belgium (0.83) which should not be the case. Apparently, the Belgian FFS pertains to Flanders only, but even after taking into consideration that this region has lower fertility, the average CEB for women 20-29 in the Belgian FFS still errs on the low side. For the generations aged 30-39 in the FFS the mean CEB values are again in accordance with the overall TFR ranking: Hungary has the highest average CEB (1.93) and Italy the lowest (1.65).

As already indicated in section 3 the CEB data are analyzed according to the same or similar covariates as used in the preceding logistic regressions (see chart 1). Since MCA is used at present, the net effects now take the form of deviations from the four respective grand means. It should also be noticed that durations since first union (cohabitation or marriage) and ages are introduced in the analysis together with their squares. These continuous covariates allow for the curvilinear evolution of average CEB with both length of exposure and age.

The net effects associated with female career development and commitment on CEB are given in table 9 for both age groups of ever married women. Positive deviations or higher

Table 9: Net effect of female career development and orientation on CEB (children ever born), women 20-29 and 30-39 who were ever in a union - MCA-results for four FFS countries

			Belgium		Germany		Italy		Hungary	
Age =			20-29	30-39	20-29	30-39	20-29	30-39	20-29	30-39
Mean CEB =			.83	1.82	1.01	1.66	.93	1.65	1.23	1.93
N =			<u>1059</u>	<u>1576</u>	<u>1494</u>	<u>2232</u>	<u>581</u>	<u>1425</u>	<u>1076</u>	<u>1659</u>
<u>Female career dev. &amp; orientation</u>										
<u>Educ. beyond secondary</u>	<u>First job professional</u>	<u>Willing to sacrifice for career</u>								
0	0	0	.16	.00	.00	.05	.05	.01	.02	-.03
1	0	0	.03	.32	(.08)	.12	x	x	(-.15)	(.16)
0	1	0	x	(-.42)	.02	-.06	.07	.11	.06	.10
1	1	0	-.03	.43	-.01	.03	x	.13	-.09	.14
0	0	1	-.23	-.25	-.02	-.16	-.02	-.04	-.05	-.05
1	0	1	-.03	.12	x	(.31)	x	x	x	x
0	1	1	x	(-.54)	-.14	-.17	-.05	-.09	(-.10)	(-.18)
1	1	1	-.08	(-.20)	x	-.34	x	.11	x	x
beta-coeff.			.17***	.21***	.04ns	.10**	.09ns	.09ns	.06ns	.08ns

Note: ( ) = 20-49 cases only; x = less than 20 cases

\*\*\* =  $p \leq .001$     \*\* =  $p \leq .01$     x =  $p \leq .05$     ns = not significant

Table 10: Net effect of lower SES and deprivation indicators on CEB, women 20-29 and 30-39 who were ever in a union - MCA-results for four FFS countries

				Belgium		Germany		Italy		Hungary	
Age =				20-29	30-39	20-29	30-39	20-29	30-39	20-29	30-39
Mean CEB =				.83	1.82	1.01	1.66	.93	1.65	1.23	1.93
N =				<u>1059</u>	<u>1576</u>	<u>1494</u>	<u>2232</u>	<u>581</u>	<u>1425</u>	<u>1076</u>	<u>1659</u>
<u>SES and deprivation indicators</u>											
<u>Women ever employed</u>	<u>Partner current job = blue collar</u>	<u>Women educ LE lower second.</u>	<u>Women spells of unempl./housewife</u>								
0	1	-	-	(.28)	x	.23	.39	.20	.22	x	x
0	0	-	-	x	x	-.04	.52	(.30)	.29	x	x
0	?	-	-	x	(.00)	.15	.52	(.22)	(.00)	x	x
1	1	1	0	.01	-.10	.28	-.14	-.03	-.02	.07	.13
1	1	1	1	(.25)	-.06	x	(-.11)	x	-.28	x	.22
1	1	0	0	.04	-.10	-.08	-.05	-.16	-.07	-.07	-.06
1	1	0	1	(-.25)	(.16)	(.34)	(.26)	x	-.20	x	x
1	0	1	-	(.19)	.17	.14	-.03	.21	.15	.12	.00
1	?	1	-	.06	-.04	-.08	-.08	(-.24)	.15	.11	.21
1	0	0	-	-.01	.09	-.08	.07	-.21	-.13	-.04	-.15
1	?	0	-	-.11	-.12	-.13	-.10	x	(-.15)	-.29	-.22
beta coefficient				.11*	.10ns	.16***	.15***	.23***	.17***	.16***	.17***

Note: ( ) = 20-49 cases only; x = less than 20 cases

\*\*\* = p≤.001    \*\* = p≤.01    \* = p≤.05    ns = not significant

fertility than average are typical for women (both age groups) who did not start their careers as professionals and who, combined with this, did not express a strong job commitment. For all other combinations, the direction of net deviations is more mixed. But, a firm job and career commitment, irrespective of length of schooling and type of career start, most typically produces negative net deviations and hence lower fertility than average. These effects are large in Belgium and among the older women (30-39) in Germany, but small and less structured in Italy and Hungary, as can also be seen from the size and significance of the beta-coefficient. On the whole, these findings are again in agreement with what could be expected from the female economic autonomy thesis, but they are less systematic than found in the analysis of the timing of first births (tables 1 and 2). The fact that women with a later start of childbearing also recuperate fertility at later ages helps explaining these diluted findings for average CEB.

In table 10 we have made a greater effort to test the relative income deprivation thesis by constructing combinations that also include the current job status of the male partner (blue vs white collar) and a measure of unemployment experience for ever employed women. Since the male occupation codes were often unavailable we have also constructed an explicit missing category indicated by a question mark in table 10.

Positive deviations from the national average CEB are typical for never employed women irrespective of the partners' job status. In other words, women who chose to be housewives from the start have considerably higher fertility than all the others. However, such women are scarce in Belgium and almost completely absent in the Hungarian FFS.

Among ever employed women, the presence of a partner in a blue collar job tends to lower fertility among women 30-39 in Belgium, Germany and Italy. This is consistent with the Easterlin hypothesis. For younger women, however, such a systematic negative effect fades away. Also the presence of spells of unemployment and/or temporary returns to the housewife position do not produce clear net effects in one direction or the other.

There are also a number of country specific features. First, the distinctions as defined in table 10 are the least pronounced in Belgium. In Germany, the never employed housewives have substantially higher fertility than ever employed women, whereas the lowest fertility is found among women 30-39 with employment but low education. In Italy, the lowest fertility is found among ever employed women 30-39 with partners in blue collar occupations. But in Hungary, lower fertility is more typical for ever employed women who have progressed beyond lower secondary education irrespective of the partners' type of job.

Table 11: Net effect of family or union disruptions on CEB, women 20-29 and 30-39 who were ever in a union - MCA-results for four FFS countries

		Belgium		Germany		Italy		Hungary	
Age =		20-29	30-39	20-29	30-39	20-29	30-39	20-29	30-39
Mean CEB =		.83	1.82	1.01	1.66	.93	1.65	1.23	1.93
N =		<u>1059</u>	<u>1576</u>	<u>1494</u>	<u>2232</u>	<u>581</u>	<u>1425</u>	<u>1076</u>	<u>1659</u>
<b>Indicators of family/union disruption</b>									
<u>Early home leaving and/or parental div./separation</u>	<u>Own divorce/sep. and/or multiple partnerships</u>								
0	0	.05	.05	-.02	-.04	-.02	-.01	.09	.08
1	0	-.06	-.02	.04	.16	.14	.15	-.01	.01
0	1	(-.68)	-.45	-.26	-.28	x	(-.55)	(-.13)	-.17
1	1	-.05	.00	.18	.13	x	(-.25)	-.47	-.14
				**					
beta-coëfficiënt		.13***	.12***	.08**	.13***	.13**	.13***	.15***	.08*

Note: ( ) = 20 to 49 cases only; X = less than 20 cases

\*\*\* =  $p \leq .001$     \*\* =  $p \leq .01$     \* =  $p \leq .05$     ns = not significant

Table 12: Net effects of religiosity and urbanity on CEB, women 20-29 and 30-39 who were ever in a union - MCA-results for four FFS countries

	Belgium		Germany		Italy		Hungary	
Age =	20-29	30-39	20-29	30-39	20-29	30-39	20-29	30-39
Mean CEB =	.83	1.82	1.01	1.66	.93	1.65	1.23	1.93
N =	<u>1059</u>	<u>1576</u>	<u>1494</u>	<u>2232</u>	<u>581</u>	<u>1425</u>	<u>1076</u>	<u>1659</u>
<u>Religiosity (a)</u>								
Service attendance								
1 x week	.05	.13	.20	.20	.01	-.03	-.08	.06
1 x month	.12	.08	.17	.21	.09	.12	.06	-.02
major festiv.	-.04	.02	-.07	-.11	-.07	-.09	-.04	-.08
1 x year	.01	-.03	-.12	-.09	(-.10)	.00	-.03	-.08
never	-.11	-.24	-.00	-.03	(-.16)	-.15	.01	.07
beta coeff.	.09**	.12***	-.10***	.12***	.08ns	.08*	.03ns	.08*
<u>Urbanity</u>								
<10.000 inhab	.10	.14	.10	.08	.02	.01	.09	.03
10.000+ inhab.	-.09	-.01	-.08	-.08	-.01	-.00	-.06	-.02
beta coeff.	.03ns	.08*	.10**	.08***	.02ns	.01ns	.08***	.03ns

Notes:

(a) categories for Belgium are respectively: belief in God very important, rather important, neither, rather unimportant, totally unimportant;

( ) = 20-49 cases only;

\*\*\* =  $p \leq .001$     \*\* =  $p \leq .01$     x =  $p \leq .05$     ns = not significant



To sum up, if we leave the higher fertility of never employed women out of the comparison, features in support of the relative economic deprivation theory are found only in Germany and Italy. In Belgium, the patterning is weak, and it is reversed in Hungary.

The net effects of problems in the parental family and of the respondents' own union disruptions are presented in table 11. Problems with the household of origin led to an earlier start of childbearing, but this is not systematically translated into higher overall fertility. Only in Germany and Italy do such women have above average CEB. By contrast, the effect of the respondents' own union disruptions are, as expected, translated in high negative deviations. These net effects are strongest in Belgium and Italy. Also the combination of problems with the parental family and of own divorce/separation produces considerably lower fertility than average in Italy and Hungary, but not in Germany. On the whole, a history of union disruption is clearly associated with a reduction in overall fertility for all women irrespective of age group, and the net negative effect of this characteristic tends to be the largest of all variables considered in this analysis.

The net deviations from the national grand means of CEB associated with religiosity and urbanity are given in table 12. In Belgium and Germany overall fertility is positively associated with higher religiosity, i.e. with a service attendance of at least once per month or a stronger importance being attached to the belief in God. This patterning in Italy is weaker and absent in Hungary. The urbanity factor, by contrast, has a systematic effect in all four countries: urban residence lowers fertility even if all other variables are in the equation. This negative effect is stronger in Germany and among the younger Hungarian cohorts.

Finally, the  $R^2$ -values for the regressions incorporating the union duration and age covariates as well range from .31 to .50 for the women 20-29 and from .13 to .29 for women 30-39.

## **5. Conclusions**

Bearing in mind the inadequacies of operationalizations of the dimensions necessary to test the relative economic deprivation and ideational theories, we can summarize the findings for the four FFS data sets as follows:

- (i) Women who opted from the start for a position as housewives start childbearing earlier, and have considerably higher fertility subsequently. However, this is a dwindling subgroup of women.

- (ii) Among ever employed women, the strongest negative effect on an early start of childbearing and on overall fertility is found for those who begin a professional career and/or maintain a strong degree of job commitment. This supports the female economic autonomy thesis.
- (iii) For all other ever employed women, childbearing starts earlier for those with lower education than for those progressing beyond lower or complete secondary education. This educational effect is, however, attenuated when overall fertility (CEB) is analyzed.
- (iv) The combinations for which the relative economic deprivation effect should be emerging yield rather mixed results. Ever employed women with lower education and partners in blue collar occupations do not systematically exhibit lower fertility than other ever employed women. The expected negative net effect of spells of unemployment is not clearly emerging either.
- (v) At this point, country specific effects should be considered. Mainly among women 30-39, lower fertility is noticed for less educated ever employed women with partners in blue collar occupations in Italy, Germany and to some extent also in Belgium. But in Hungary the opposite holds: less educated women still have higher fertility irrespective of the partners' type of job.
- (vi) Problems in or with the parental household situation are strongly associated with an earlier start of childbearing. This confirms the intergenerational effect as described by other authors focusing on cohabitation or union instability. Furthermore, the respondents' own union disruptions have a strongly negative net effect on overall fertility. Of all net effects considered in this analysis, those associated with family problems or union instability tend to be the largest in the four countries concerned.
- (vii) The religiosity factor is not clearly associated with an early start of childbearing, i.e. prior to age 23. However, secularism promotes a postponement until after age 30 and lowers overall fertility. As often found in other analyses, it is again noted that the contrast is mainly between the smaller group which could be qualified as highly religious versus all the others. Also, the religiosity factor is less pronounced in Hungary and most in Belgium and the former FRG.
- (viii) Urban residence (10.0000 pop.+) still contributes negative net effects throughout: it acts in favour of later starting of childbearing and it lowers overall fertility as

well. Evidently, factors associated with urbanity, but not with the other independent variables used here, continue to have a fertility lowering effect. Most of these results will hardly come as a surprise. They are also indicative of the maintenance of low to very low fertility in these four countries. The small categories of women opting for a vocation as houwewives or who have maintained a stronger religious conviction are declining further in absolute numbers. By contrast, the group of women pursuing higher education, preparing themselves for professional career starts, and developing a strong job commitment is still growing. Particularly this last feature seems to be responsible for further postponement of parenthood. But also among women with less education overall fertility is likely to remain low despite their earlier start of childbearing. For these women, who still constitute a large category, a career development may be less relevant, but their contribution to the household income remains a necessity in western consumption societies. This conflict between material aspirations and child rearing prohibits their progression to higher parities, i.e. of 3 children or more. As a result, an earlier starting of childbearing among less educated women does not lead to significantly higher overall fertility than among women with more advanced education.

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