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Postponement and recuperation: Recent fertility trends and forecasts in six Western European countries

R. Lesthaeghe
(rlestha@vub.ac.be)

INTERFACE DEMOGRAPHY (SOCO)
VRIJE UNIVERSITEIT BRUSSEL

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Interface Demography, Vrije Universiteit Brussel, Pleinlaan 2, B-1050 Brussels, Belgium
Tel: 32-2-629.20.40 Fax: 32-2-629.24.20 E-mail: esvbalck@vub.ac.be
Website: http://www.vub.ac.be/SOCO/
Vakgroep Bevolkingswetenschappen, Universiteit Gent, Korte Meer 3, B-9000 Gent, Belgium
Tel: 32-9-264.91.64 Fax: 32-9-264.91.98 E-mail: John.Lievens@rug.ac.be
Website: http://www.psw.rug.ac.be/popmeth

Postponement and recuperation:
Recent fertility trends and forecasts in six Western European countries.

(Austria, Belgium, France, Germany, Switzerland and the Netherlands)

R. Lesthaeghe
Interface Demography, VUB
rlestha@vub.ac.be

1. The general European picture

With the exception of Albania there was no other European country in 1999 - from Gibraltar to the Urals - in which the period total fertility rate (PTFR) was above the level of 2.0 children. The few countries that were still above this figure in 1995 (i.e. Iceland, Cyprus and the FYR Macedonia) have now joined the others. Furthermore, PTFRs as low as 1.00 to 1.20 are recorded in 1999 in no less than seven countries: Georgia (1.07), former East Germany (1.11), the Czech Republic (1.13), Latvia (1.16), the Russian Federation (1.17), Italy (1.19) and Spain (1.20). The list of countries with PTFRs between 1.21 and 1.40 is equally impressive: Slovenia (1.21), Bulgaria (1.23), Estonia (1.24), Hungary (1.29), Belarus (1.29), Greece (1.30), Romania (1.30), Austria (1.32), the Slovak Republic (1.33), Lithuania (1.35), Poland (1.37), Croatia (1.38) and former West-Germany (1.40). By comparison to these mostly Southern, Central and Eastern European countries, fertility in Western Europe and Scandinavia now looks "high", even if it is only in the range of 1.60 to 1.80.

Many of the countries with very low fertility have reached these levels as a result of massive postponement after 1990, occurring at all ages and marriage durations (Frejka and Calot, 2000; Lesthaeghe and Moors, 1999). As a consequence, completed cohort fertility levels that reflect the experience before the 1990s look very different. In table 1 we have reported the nearly completed fertility levels for the cohort born in 1960 which has now reached the age of 40. This cohort level has only dipped below 1.80 in six countries, all in Western and

Southern Europe, that have a much longer experience of sub-replacement fertility. Several Central and Eastern European countries still have such completed cohort levels above 2.0, but this no longer holds for the majority of them. The trend is very clear though: the cohorts born after 1960 will no longer reach the 2.0-children benchmark in most European countries. The same is likely to happen or is already occurring among the populations of European descent in the US, Canada, Australia and New Zealand.

Table 1: European countries according to the completed fertility level for the cohort born in 1960

A. Completed fertility below 1.70	
	Germany ex-FRG (1.59), Italy (1.65), Austria (1.69)
B. Completed fertility 1.70 - 1.79	
	Spain (1.75), Luxemburg (1.75), Switzerland (1.77)
C. Completed fertility 1.80 - 1.89	
	Russian Federation (1.83), Malta (1.84), Belgium (1.84), Netherlands (1.85) Belarus (1.86), Slovenia (1.87), Bosnia-Herzegovina (1.89), Denmark (1.89)
D. Completed fertility 1.90 - 1.99	
	Portugal (1.90), Germany ex-GDR (1.93), Greece (1.93), Finland (1.95), Bulgaria (1.95), UK (1.96), Estonia (1.99)
E. Completed fertility 2.00 - 2.09	
	Czech Republic (2.02), Hungary (2.02), Sweden (2.04), Norway (2.09)
F. Completed fertility 2.10 or above	
	France (2.10), Romania (2.16), Slovak Republic (2.17), Poland (2.18), FYR Macedonia (2.29), Ireland (2.41), Iceland (2.49)

Note: unknown: Albania, Croatia, Ukraine, Moldova, Lithuania, Latvia, Cyprus, Georgia.
Source: Council of Europe (2000): 82.

While cohort fertility patterns reflect the behaviour over a life time of real generations, period total fertility levels reflect to what extent each generation that reaches the mean age at childbearing (say at age 30) reproduces itself at the radix of the age pyramid. A PTFR of 1.40 means that the current cohort reaching the mean age at childbearing (MAC) has a deficit replacement of a full third (i.e. 1.40/2.07=0.676), and a PTFR of 1.20 corresponds to a replacement deficit of 42 percent. In the absence of migration, this means that in about 30 years time, the cohort reaching MAC will be reduced by these percentages. Stated differently, if such a reduction would need to be avoided, one would have to complement the birth stream by the same percentages of young immigrants (Calot, 2000). These percentages could be reduced later on only if immigrants bring higher fertility with them (Coale, 1972; Lesthaeghe et al., 1988).

2. The experience of six Western European countries

Our brief for this conference is limited to a more detailed analysis of the fertility trends in six countries only, i.e. Austria, Belgium, France, Germany, Switzerland and the Netherlands. Also, we shall present a separate analysis for the former Western (ex-FRG) and Eastern (ex GDR) parts of Germany given their very distinct histories.

Table 2 gives a basic summary of trends in PTFRs, along with two other indicators: (i) the share of the PTFR due to teenage fertility (%F15), and (ii) the share of the PTFR realised after age 30 (%F30+). In 1960, all six countries had PTFRs above 2.3 and there was still a sizeable contribution of women older than 30 in this "pre-pill" period. In fact, the Dutch PTFR was 3.12 children at that time and 44% of this was contributed by older women. The smallest contribution by women over 30 then occurred in the GDR with only 25%. At that time, female labour force participation was a good predictor of this percentage in tandem with the availability of abortion. The arrival of hormonal contraception and of the IUDs in Western Europe had a pronounced and lasting effect: pregnancies at older ages could be avoided, and in tandem with still declining ages at first marriage, fertility schedules shifted toward the younger ages, and proportions of the PTFR realised after age 30 declined quite dramatically. At the same time, the sexual revolution of the 1960s was emerging as an element in the overall ideational overhaul directed against all expressions of normative regulation and authority. During a period of about 10 years (1965-75), there was a rise in teenage fertility and in shotgun marriages stemming from the fact that a segment of the incoming young generation had learned sex faster than contraception. By 1975, however, better contraception, better sex education (also at home) and also liberalisations of abortion in most countries (not yet in Belgium) reversed the trend.

Equally around 1975 all six countries reached PTFR-levels of 2.0 or below. The dip was particularly fast in West-Germany (PTFR=1.45 in 1980) and in Switzerland (1.55), but also quite steep in the Netherlands (1.60), Austria (1.65) and Belgium (1.68). France (1.95) and East-Germany (1.94) were then exceptions. Hence, from 1975 onward it became clear that a new general pattern of fertility was fully unfolding: it is characterised by increasing postponement at younger ages, and strongly depending on country, by varying degrees of catching up at later ages. This resulted in a steady rise of the share of the PTFR being realised after the age of 30 during the 1980s. In all six countries this has continued during the 1990s as well. So far, none experienced an end to postponement by the year 2000.

Table 2: Period total fertility rate (PTFR) and percentages of PTFR due to teenage fertility (%F15) and realized after age 30 (%F30+) in selected Western European countries, 1960-1999

	Austria			Belgium			France			Netherlands		
	PTFR	%F15	%F30+	PTFR	%F15	%F30	PTFR	%F15	%F30+	PTFR	%F15	%F30+
1960	2.70	8	32	2.56	5	33	2.73	6	31	3.12	3	44
1970	2.29	13	28	2.25	7	28	2.47	7	29	2.57	4	33
1980	1.65	11	23	1.68	6	22	1.95	6	24	1.60	3	27
1990	1.45	7	28	1.62	3	30	1.78	3	34	1.62	2	43
1995	1.40	6	32	1.56	3	35	1.70	3	40	1.53	2	51
1996	1.42	6	33	1.59	..	..	1.72	3	41	1.53	2	52
1997	1.37	6	33	1.60	..	..	1.71	3	42	1.56	1	53
1998	1.34	5	34	1.62*	..	..	1.75	..	..	1.63	2	53
1999	1.33*	5	35	1.63*	..	..	1.77	..	..	1.65*	2	54

	Germany (ex FRG)			Germany (ex GDR)			Switzerland		
	+PTFR	%F15	%F30+	PTFR	%F15	%F30+	PTFR	%F15	%F30+
1960	2.37	6	33	2.35	11	25	2.44	3	38
1970	1.99	12	29	2.19	14	20	2.10	5	32
1980	1.45	7	27	1.94	14	12	1.55	3	31
1990	1.45	5	36	1.50	10	14	1.59	2	40
1995	1.34	5	39	0.84	6	21	1.48	2	44
1996	1.40	5	40	0.95	6	23	1.50	2	45
1997	1.44	5	41	1.04	5	25	1.48	2	46
1998	1.41	..	..	1.06	..	..	1.47	2	47
1999	1.40	..	..	1.11	..	..	1.48	2	48

Note: * = estimated by Deboosere et al. (2000) for Belgium, by Kytir & Münz (1999) for Austria, by Steenhof & de Jong (2000) for the Netherlands.
Source: Council of Europe (1999 & 2000) and latest national estimates.

At present, more than half of the PTFR in the Netherlands stems from fertility of women above age 30. This share is considerably larger than in 1960 when the Dutch housewives typically continued to have higher parity births after age 30. In France, Switzerland, West-Germany and Belgium older age fertility now accounts for 40% or more of the PTFR, and only in the ex-GDR and Austria has there been less catching up after age 30. In these two countries, this relative failure of compensation for postponement is directly linked to their current low levels of the PTFR (Austria: 1.33; ex-GDR: 1.11).

Another typical "second demographic transition" feature of the six countries is the "deregulation" of the traditional succession of events. At first, premarital cohabitation had started to push up the mean ages at marriage during the 1970s, but since the 1980s it became also evident that couples proceeded to have their first births prior to marriage. This, of course, resulted in rising proportions of births outside wedlock. However, large national variations appeared, and several patterns are detectable in the present set of six countries.

First, there is the overall conservative pattern, best exemplified by the Flemish part of Belgium. Home leaving is late, cohabitation modest (13% of women 20-24 in 1992), couples move into marriage, there is low teenage fertility, there are few unwed mothers, and parenthood is postponed within marriage (see table 3 and 4 for relevant indicators). The francophone part of Belgium, however, has more premarital cohabitation and higher out of wedlock fertility too. The West-German pattern (presumably with equally marked subnational variations) comes closest to the Belgian one: the proportions cohabiting are low (12% of women 20-24 in 1992), and so are the proportions of single mothers, teenage fertility and the proportions of births out of wedlock. By 1999, the latter figure had presumably not yet reached 20% of all births in either Belgium or West Germany. Only, the German home leaving pattern is different from the Belgian one with more young persons living alone rather than with their parents.

The second group of countries is made up of Switzerland and the Netherlands. In both instances premarital cohabitation has grown beyond the 20% mark for young women 20-24, and this is also combined with relatively high proportions of young adults living independently as singles. However, both countries have remained quite conservative with respect to teenage fertility (both have the lowest levels of the six countries) and with respect to fertility outside wedlock (very low in Switzerland) (see tables 3 and 4). Hence, parenthood and marriage have remained strongly connected.

In the third group, made up of France, Austria and East Germany, this no longer holds. In these three countries extra-marital fertility rose in tandem with premarital cohabitation, to the point that 30 to 45% of all births now occur to non-married women. Moreover, despite the fact that teenage fertility continued to drop, these three countries now also have between 4 and 6 percent of all women 20-24 living as single mothers. By "Anglosaxon" standards, this is still very low, but by continental ones (compare with 1 percent in the Low Countries or Switzerland) this is rather high (see table 4).

Subnational variations in the latter countries are equally in evidence. In Austria, for instance, Carinthia has more than 40 percent of all births occurring out of wedlock, against Vienna only

Table 3: Percentage of non-marital births (NMB) and teenage fertility (F15-19) in selected Western European countries, 1960-199.

	Austria		Belgium		France		Netherlands	
	NMB	F15-19	NMB	F15-19	NMB	F15-19	NMB	F15-19
1960	13	225	2	140	6	169	1	86
1970	13	293	3	159	7	183	2	113
1980	18	174	4	102	11	124	4	46
1990	24	101	12	55	30	61	11	38
1995	27	86	17	46	38	48	16	29
1996	28	79	17	..	39	48	17	28
1997	29	76	..	..	40	47	19	30
1998	30	72	..	..	..	..	21	31
1999	31	67	..	..	..	..	23	33

	Germany (ex FDR)		Germany (ex GDR)		Switzerland	
	NMB	F15-19	NMB	F15-19	NMB	F15-19
1960	6	149	12	254	4	83
1970	6	229	13	299	4	112
1980	8	102	23	267	5	51
1990	11	73	35	150	6	32
1995	13	66	42	54	7	28
1996	14	67	42	55	7	28
1997	14	67	44	57	8	33
1998	..	..	..	..	9	27
1999	..	..	..	..	10	30

Note: F15-19 is the sum of the age-specific fertility rates from ages 15 to 19 per 1000 women.
Source: Council of Europe (1999 & 2000)

Table 4: Percentage distribution of women 20-24 according to household position; FFS-surveys of 1991-96

	Residing with parents	Living alone	Cohabiting no child	Cohabiting + children	Single mother	Married no child	Married + children
Belgium (Flanders)	52	3	10	2	1	23	9
Germany (ex-FRG)	45	22	11	1	2	7	12
Switzerland	42	17	24	1	1	8	7
Netherlands	47	15	20	1	1	10	6
France	41	17	19	5	4	6	8
Austria	43	12	20	7	6	4	8
Germany (ex-GDR)	31	15	8	8	6	5	27

Note: for the results of the other FFS-countries, see Lesthaeghe and Moors, 2000: 159; the percentages residing with parents are calculated as the residual percentage.

26 percent. Carinthia has now regained its leading position in this respect since it had very high extramarital fertility in 1900 as well (Coale's index Ih=0.219). The Austrian pattern becomes even crisper when only first births are considered, and there is a large cluster of Alpine areas (= Bezirke) in which more than 60 percent of first births are extra-marital (in Bezirk Murau: 76%) (Kytir and Münz, 1999: 146). In these areas, a couple's life really starts with parenthood rather than with marriage, and the present pattern is largely a revival of an older one.

Also in France, there are 25 départements with non-marital fertility accounting for 45% or more of all births in 1997, and the top three, with more than half, are all largely rural (Ariège, Lot, Pyrénées Orientales) (Beaumel et al., 1999: 168-169). Also in France current regional patterns of cohabitation and extra-marital fertility reflect historical sociological features (for details on this "revenge of history", see Lebras and Todd, 1981; Kytir and Münz, 1986; Kytir, 1993; Lesthaeghe and Neels, 2000).

3. Postponement and recuperation: cohort fertility profiles

The classic way of comparing cohort fertility profiles consist of calculating the cumulated difference (here: deficit) at each age between various cohorts relative to a benchmark cohort. For the comparison presented here we have chosen the birth cohort born in the early 1940s as the benchmark. In several countries this benchmark cohort still reached a CTFR of about 2 children (France: 2.23; Belgium: 2.06; Netherlands: 1.96 and Austria 1.95), but in others the benchmark CTFR had already fallen below 1.90 (Switzerland: 1.87; East Germany 1.83 and West Germany 1.80). These differences in benchmark CTFRs have of course to be taken into account when comparing the outcomes across countries. Furthermore, we have ordered the country profiles starting with those that have less postponement and more catching up at later ages, and ending with those that have the opposite pattern. The East German pattern is discussed separately given its very ideosyncratic features.

France has been able to maintain fairly high PTFRs throughout the 1980s and 1990s with only a short dip below the 1.70 level in 1993 and 1994. The main reason for this is that the cohorts born in the 1950s exhibited (i) only a modest degree of postponement, and (ii) a high degree of catching up beyond age 30 (see figure 1). As a result, these cohorts still reached a final offspring of 2 children (CTFR = 2.12 for the 1957-61 cohort). The cohorts born in the 1960s,

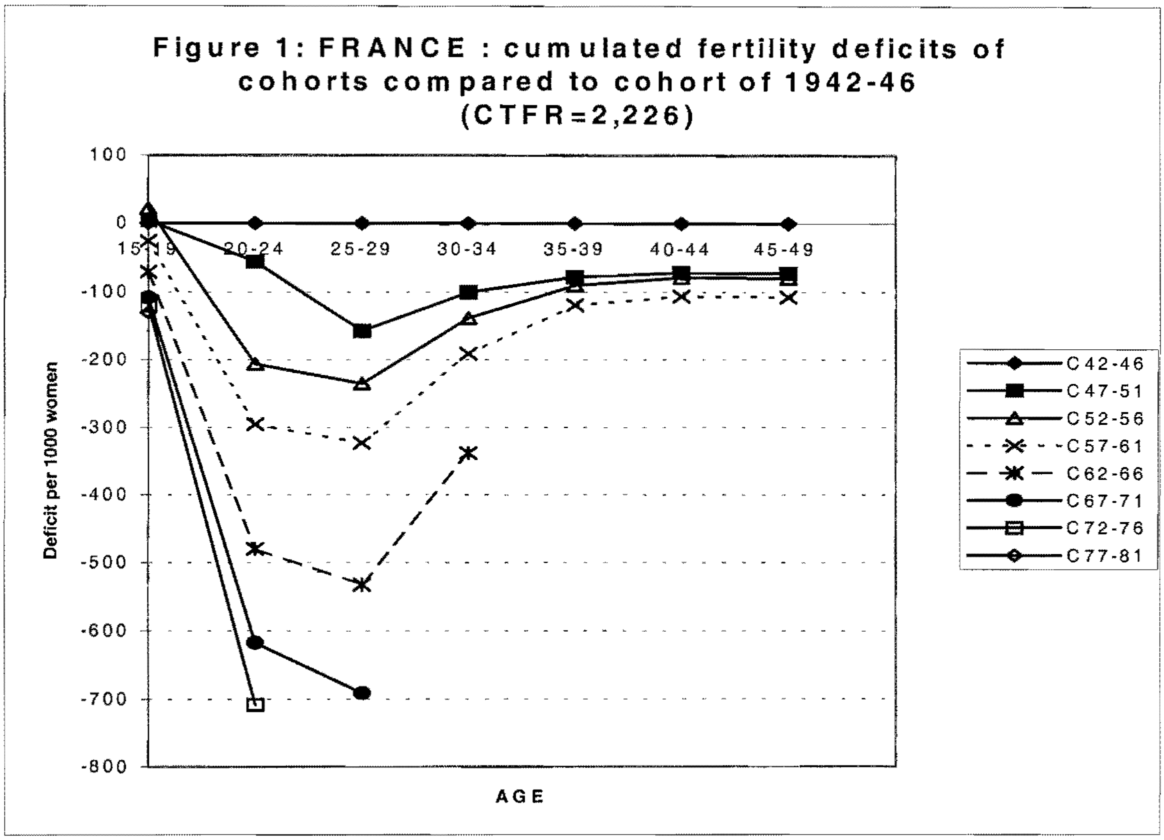


Figure 1: FRANCE : cumulated fertility deficits of cohorts compared to cohort of 1942-46 (CTFR=2,226)
Deficit per 1000 women
AGE
15-19
20-24
25-29
30-34
35-39
40-44
45-49
C42-46
C47-51
C52-56
C57-61
C62-66
C67-71
C72-76
C77-81

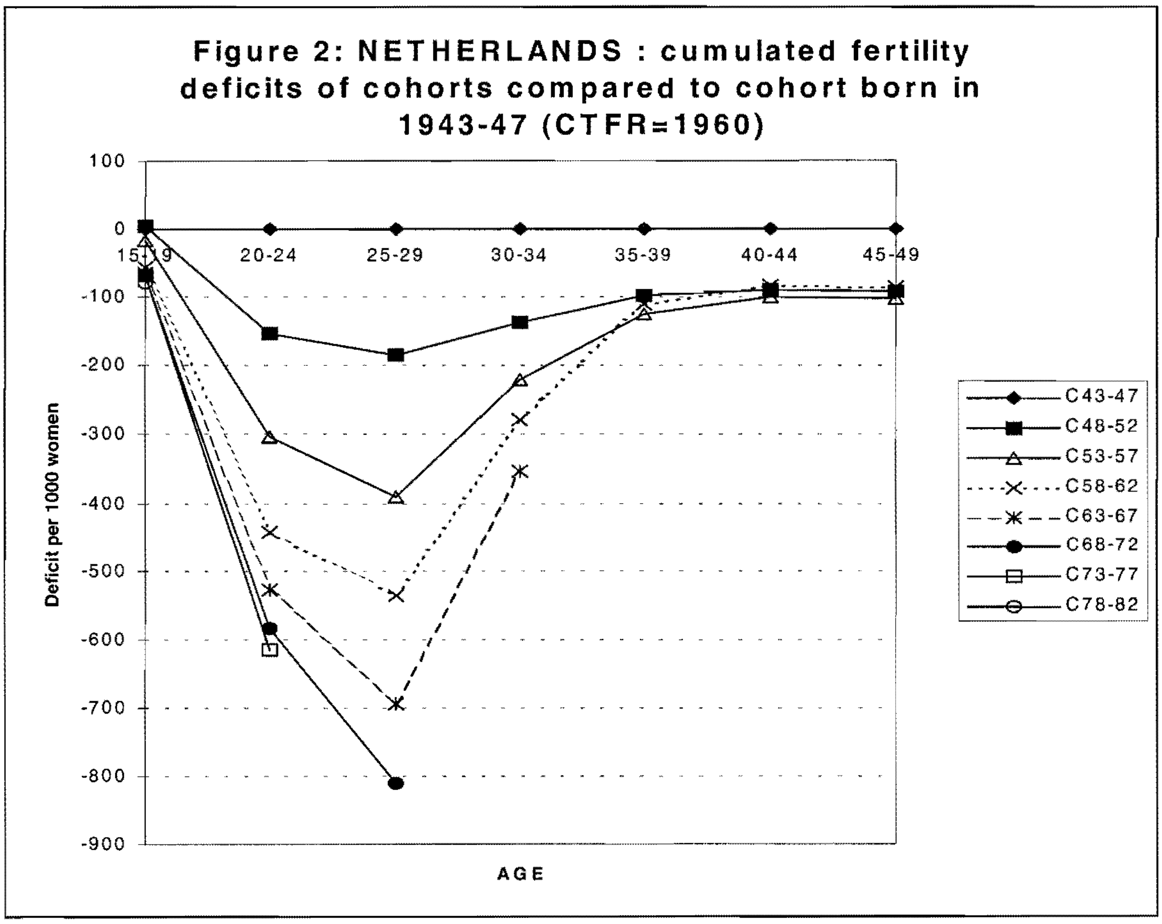


Figure 2: NETHERLANDS : cumulated fertility deficits of cohorts compared to cohort born in 1943-47 (CTFR=1960)
Deficit per 1000 women
AGE
15-19
20-24
25-29
30-34
35-39
40-44
45-49
C43-47
C48-52
C53-57
C58-62
C63-67
C68-72
C73-77
C78-82

however, exhibit a considerably more pronounced postponement effect, and this was responsible for the drop in the PTFRs during the middle of the 1990s. To get back to the two children level, fertility after age 30 and particularly after age 35 needs to increase much more for the later cohorts, and there is a distinct possibility that the CTFRs for cohorts born in the 1970s will not reach the replacement level any longer. Nevertheless, French CTFRs are likely to remain among the highest in Europe for the later cohorts as well, and this can prevent French period fertility from falling below 1.70.

The Netherlands and Belgium have had very similar PTFRs since 1975 and their values have not diverged by more than 0.1 children. In fact, both countries have occupied the Western European middle ground with PTFRs oscillating between 1.50 and 1.65 over two decades. Yet, they have different cohort profiles. The Netherlands have had a pronounced postponement effect already starting with the cohorts born in the 1950s, and this postponement has steadily continued at an almost constant pace until the cohort born in the middle of the 1970s (see figure 2). As indicated before, this produced the latest fertility schedule witnessed so far in the whole of Europe. However, Dutch PTFRs did not drop below the 1.50 level because of this postponement being matched by a high degree of recuperation after age 30. In fact, the cohorts born before 1962 still reach a CTFR of the order of 1.85, and there is a distinct possibility that the CTFR for the next cohort, i.e. born between 1963 and 1967, will not fall short by much. Also, the cohorts born during the 1970s seem to exhibit a slowing down in the postponement rate, and given the strong shifts that have already occurred, the Netherlands may be closer to "the end of postponement". In itself, this feature would exert an upward pressure on the period rates, provided, of course, that the earlier cohorts born in the 1960s and early 1970s are managing to catch up as well as their predecessors did. If that is not the case, the period boost associated with "an end to postponement" would be more modest.

The Belgian pattern, by contrast, is characterised by much less postponement, but also by much less recuperation subsequently. As in the Netherlands, postponement started early and already with the cohorts born before 1950 (see figure 3). The next cohorts born in the first half of the 1950s continued along the same pattern. But in contrast to the Dutch experience, these cohorts exhibited no recuperation at later ages whatsoever, and their CTFRs dropped from 2.06 children in the benchmark cohort to levels between 1.75 and 1.85. Cohorts born between 1955 and 1964 progressed further with postponement, but now they showed also a

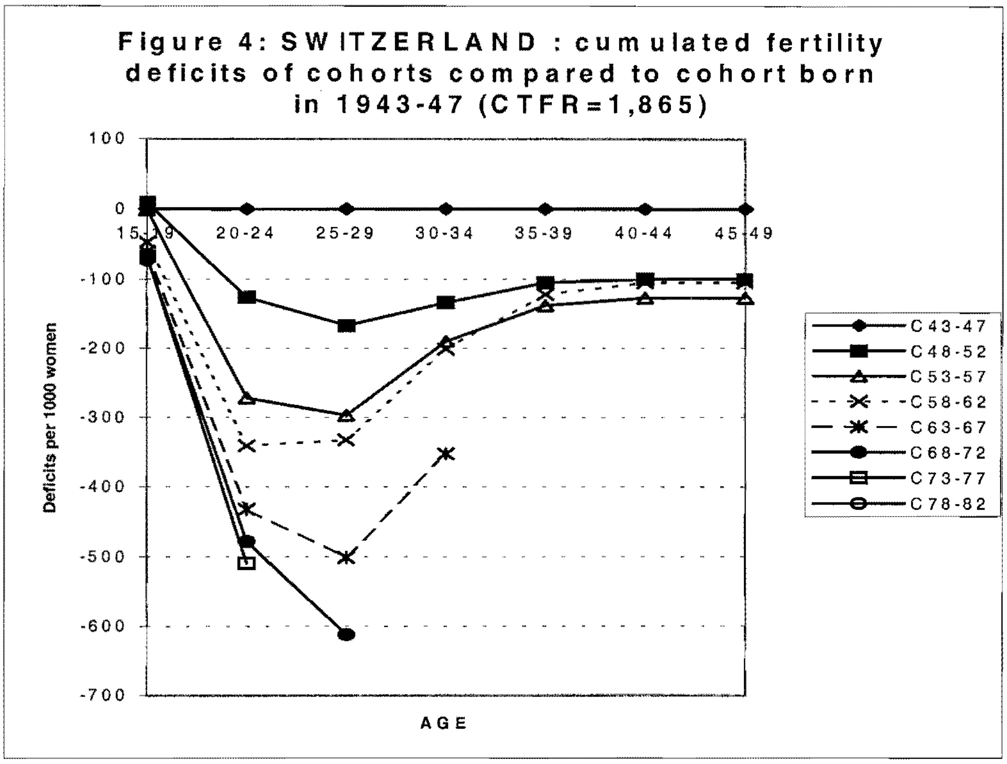


Figure 4: SWITZERLAND : cumulated fertility deficits of cohorts compared to cohort born in 1943-47 (CTFR=1,865)
100
0
-100
-200
-300
-400
-500
-600
-700
Deficits per 1000 women
15-19
20-24
25-29
30-34
35-39
40-44
45-49
AGE
C43-47
C48-52
C53-57
C58-62
C63-67
C68-72
C73-77
C78-82

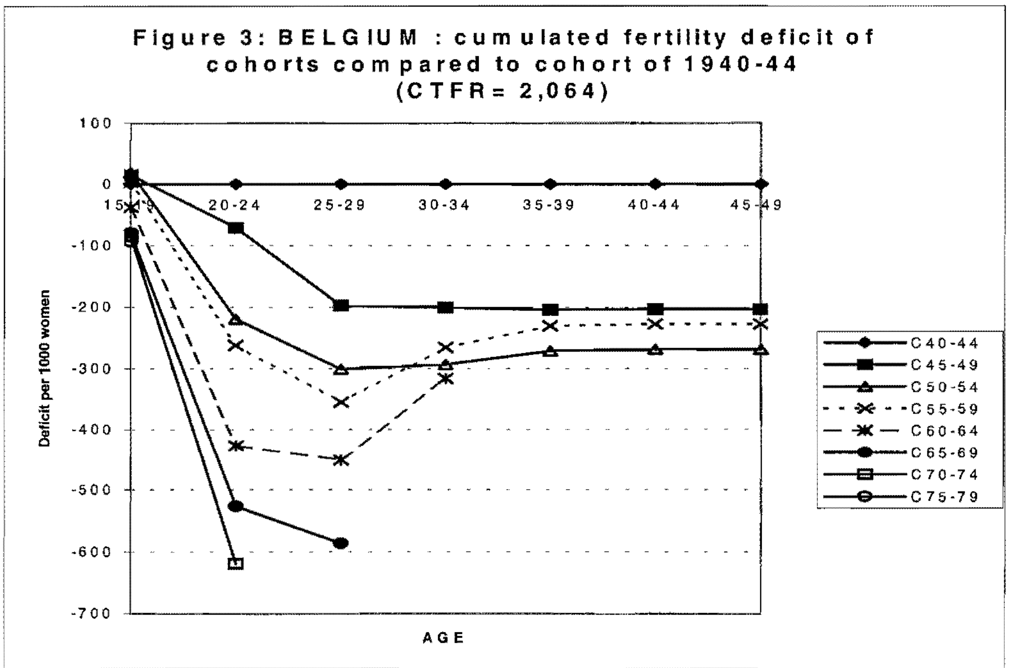


Figure 3: BELGIUM : cumulated fertility deficit of cohorts compared to cohort of 1940-44 (CTFR= 2,064)
100
0
-100
-200
-300
-400
-500
-600
-700
Deficit per 1000 women
15-19
20-24
25-29
30-34
35-39
40-44
45-49
AGE
C40-44
C45-49
C50-54
C55-59
C60-64
C65-69
C70-74
C75-79

higher degree of catching up. In the end, these cohorts will equally reach CTFRs in the vicinity of 1.80. Cohorts born after 1965 have so far kept up the pace of postponement, and for Belgium the "end of postponement" may be further away in time. Yet, recent modest rises in the PTFR suggest that the 1960s cohorts are catching up more than their predecessors did.

To sum up the Low Countries experience, the Dutch pattern is the textbook example of fast and steady postponement, followed by strong catching up after age 30. The Belgian pattern is one of more temperance in both respects. It is, however, remarkable that on such a small scale as that of the Low Countries historical records of both weak and strong catching up can be found for cohorts born in the same period and with similar degrees of earlier fertility postponement.

In the next three countries, i.e. Switzerland, West Germany and Austria, the CTFR of the benchmark cohort is lower than 2.0 children to start with. The three countries have also in common that the rate of postponement is fairly steady (and in Austria remarkably so) for all subsequent cohorts until those born in the 1970s (see figures 4, 5 and 6). Moreover, by age 30 the cumulated deficits are of very similar orders of magnitude as well. However, the three countries again differ with respect to the degree of recuperation after age 30. So far, the Swiss cohorts have the highest degrees of recuperation and the Austrian ones the lowest. As a result, CTFRs for the Swiss cohorts born in the 1950s are very similar and close to 1.75. The West German cohorts lose more ground, but the Austrian ones are successively falling further behind. During the 1990s the PTFRs of the three countries are ranked in the same way. For a similar degree and pace of postponement, Swiss cohorts have the larger catching up, and PTFRs have been oscillating between 1.45 and 1.55. German cohorts exhibit less recuperation, and PTFRs commonly vary between 1.40 and 1.45. Austrian cohorts recuperate very little and Austrian PTFRs have been dropping steadily from 1.45 in 1990 to almost 1.30 in 1999. The other feature contributing to this outcome is that the cohorts born in the late 1970s in Switzerland and especially in West Germany have not increased their relative deficit prior to age 25, whereas these younger cohorts in Austria continue to follow the pattern of a nearly constant stepwise progression of postponement.

In terms of prospective CTFRs, it will be difficult for the cohorts born after 1965 in these three countries to reach an offspring of 1.70. In Switzerland there is still a chance for this le vel to be reached, but for the West-German and especially Austrian cohorts CTFRs are likely

Figure 5: GERMANY ex-FRG: cumulated fertility deficits of cohorts compared to cohort born in 1942-46 (CTFR=1,798)

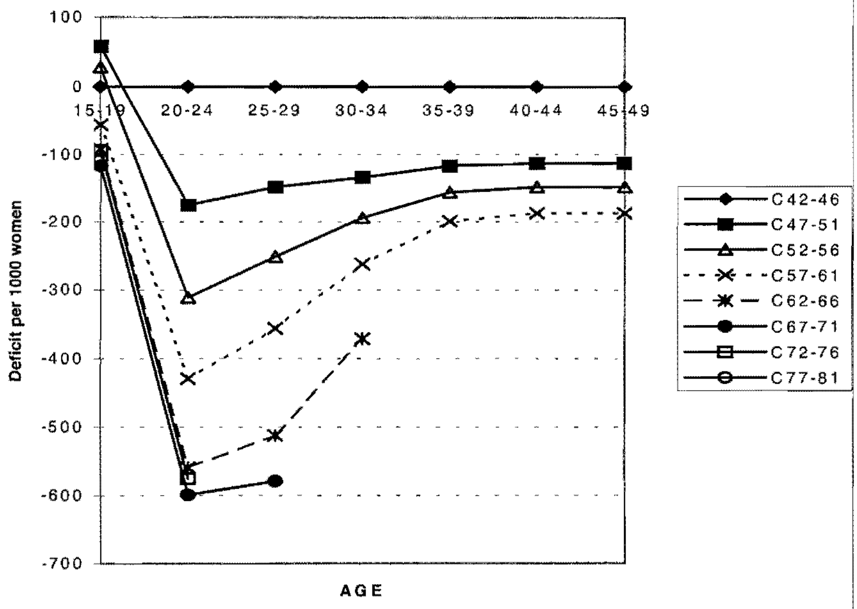


Figure 6: AUSTRIA: cumulated fertility deficits of cohorts compared to cohort born in 1943-47 (CTFR=1,954)

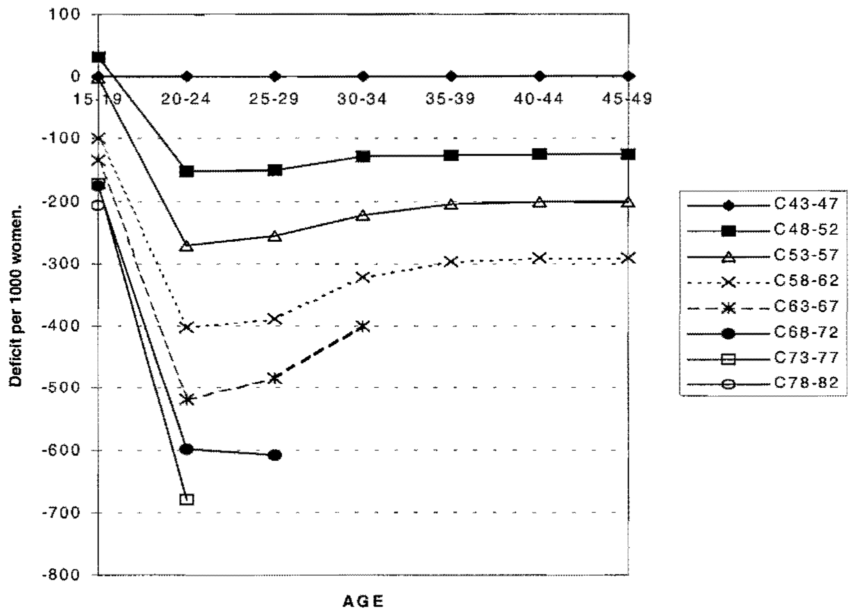
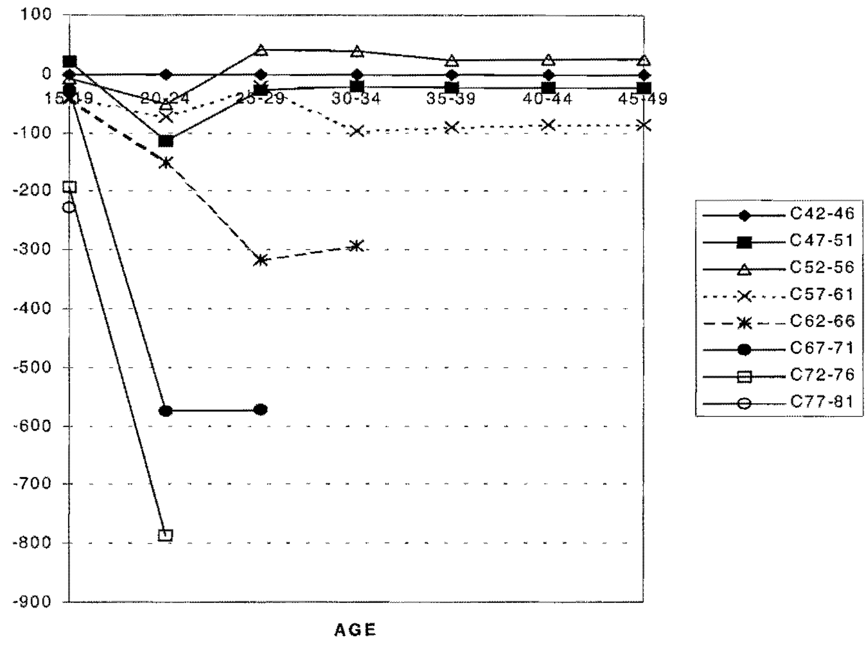


Figure 7: GERMANY ex-GDR : cumulated fertility deficits of cohorts compared to cohort born in 1942-46 (CTFR=1,833)



to fall further to levels between 1.50 and 1.60. For this to be avoided the latter two populations would need a reversal of their consistent historical pattern of weaker recuperation.

The East-German experience is totally different from the previous ones (see figure 7) since we have to make a clearcut distinction between the cohorts that had most of their procreation respectively before and after 1989 or the German reunification. For the pre-unification cohorts, the CTFRs are remarkably stable with a level of about 1.85 to 1.90. Their cohort profiles had been disrupted though by specific period effects, but these did not produce a lasting effect over the cohorts' life time. For instance, the older pre-unification cohorts exhibit a dip in age-specific fertility rates corresponding with the abortion legalisation of 1972; but then the reverse happened shortly thereafter in 1976 as a consequence of a pro-natalist policy providing a prolongation of maternity leaves and more substantial payments for working others with at least two children (Büttner and Lutz, 1990). The cohorts born after 1960, however, experienced the "Wende" at younger ages, and all reacted by massively postponing fertility in the face of equally massive uncertainty. This extremely rapid and profound postponement caused the East German period rates to fall precipitously, i.e. from a PTFR of 1.74 in 1987 to barely 0.77 in 1993 and 1994. Of course, some recuperation is likely to take place after such shock-postponement and this would drive the PTFR above unity again, as indeed witnessed since 1997. The speed of convergence to the West German PTFR now depends on the end of postponement and on the degree of recuperation. The present German forecasts (see section 5) expect this convergence to happen before 2010. However, if East German couples prove to be better in catching up than their Western counterparts have been in the past, the PTFR for the Neue Länder may again exceed that of the former FRG in the future.

4. A model for postponement and recuperation

The commentary attached to figures 1 through 7 have been merely in qualitative terms, i.e. referring to weak and strong postponement or recuperation. A more formal model would be better. The one proposed here is a first try.

We wish to model the deviations (mostly deficits) in cumulative fertility by age over time. The deviations are expressed relative to a benchmark cohort, as in the previous figures. A good benchmark cohort would be one that has not yet experienced much postponement nor catching up (i.e. a cohort at the end of the "first fertility transition"). A very simple model would consist of a national standard of age specific values of the deviations in cumulated fertility by age, i.e. $d_n(a)$ and a time dependent scalar k_t so that $d_t(a) = d_n(a)*k_t$. The scalar k_t would be measured at age 30, since this is the place of the "trough" in most deviation schedules. This scalar can be obtained as:

$$k_t = cumfert_t(30) - cumfert_n(30) / cumfert_n(30) - cumfert_b(30)$$

in which "cumfert" is cumulated fertility till age 30 in the observed schedule (subscript t), the national standard schedule of deviations (subscript n) and in the benchmark schedule (subscript b) respectively. In such a model the national standard has a particular age shape, and these deviations would be scaled up or down with the "trough" scalar k_t at all ages. Such a simple model would for instance not function to badly for the Austrian experience (fig. 6) starting with the 1947-51 cohort. But for the other countries, something more involved is obviously necessary. In developing this we can make a distinction between the postponement half and the catching up half of the schedules. Up to age 30 we can retain this simple model:

for $a \leq 30$: $d_t(a) = d_t^0(a) = d_n(a)*k_t$

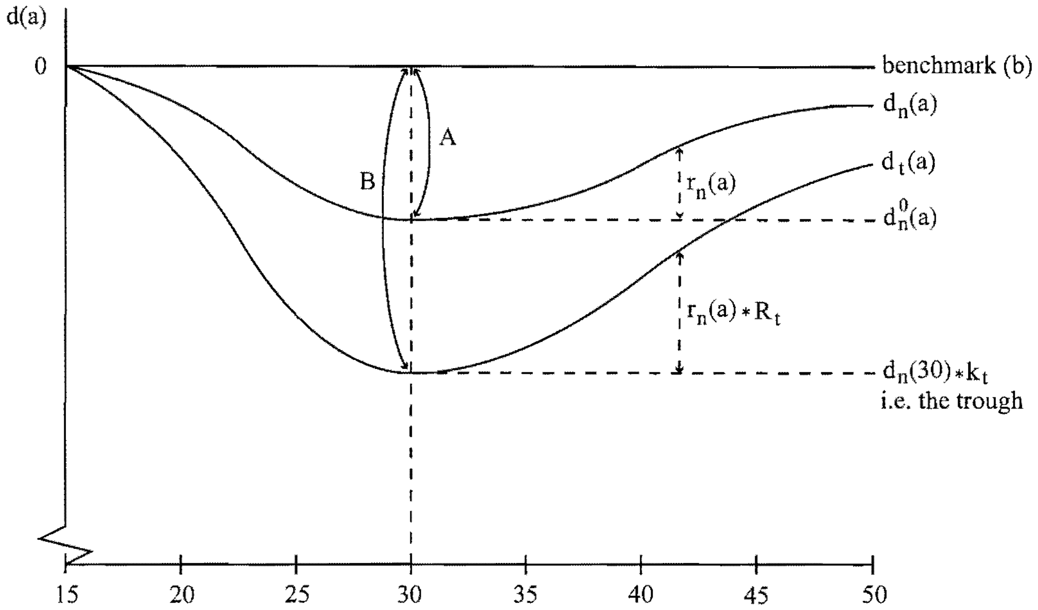
We have added a superscript ^{0} to $d_t^0(a)$ to indicate that this is a national standard of deviations in cumulated fertility without recuperation. After age 30 the equation becomes:

for $a > 30$: $d_t(a) = [d_n(30)*k_t] + [r_n(a)*R_t]$

The first term in brackets defines the trough and the second one determines the recuperation part. The latter is made up of a national standard schedule of recuperation by age, i.e. $r_n(a)$, inflated by a relative recuperation scalar R_t for all ages beyond 30. R_t varies of course over time from cohort to cohort. R_t is measured as the ratio of the amount of fertility finally recuperated in any cohort (i.e. $d_t(30)$ - $d_t(50)$) over the amount recuperated in the standard (i.e. $d_n(30)$ - $d_n(50)$). In many countries d(50) can already be measured at age 45 given that fertility beyond age 45 is often only 1 birth or even less per 1000 women. This model is presented in Figure 8, and a fully worked out example for the Netherlands is given in the appendix to illustrate its use.

At present, we return to the six country comparison. Each time the cohort born around 1942-46 is used as a benchmark to calculate $d_t(a)$ (see also figures 1-7). The national standards $d_n(a)$ are all obtained as the áverage values of $d_t(a)$ for the next three cohorts (labeled 1 through 3). Also, the ex-GDR data are omitted from the comparison because we have no idea as yet of what the younger "postponement" cohorts will do in terms of catching up. Hence, such an analysis can also not be performed for most other formerly Communist countries whose cohorts have not arrived in the catching up phase.

Table 5 presents a synoptic view of postponement using k_t and table 6 gives a comparison of the recuperation phase using R_t. At the top of both tables (series A) we give the values based on each of the national standards $d_n(a)$. These cannot be used for international comparisons, but they are to be used for inspecting the national time paths of k_t and R_t. As shown in the appendix for the Netherlands, the Dutch k_t series shows a distinct tendency of tapering off, meaning that the latest cohorts are reaching a trough (maximal value of $d_t(30)$) which is still deeper than before, but that the rate of "deepening" is slowing down. This is not so surprising given that the Dutch have been the champions of postponement. The series B in both tables are of greater interest to us at present since they do permit international comparisons.



for $a \leq 30$	for $a > 30$
$d_t(a) = d_n(a)*k_t$	$d_t(a) = d_n(30)*k_t + r_n(a)*R_t$

$d_n(a)$: national standard age schedule of deviations in cumulated fertility compared to those of benchmark cohort

$d_n^o(a)$: idem, if no recuperation after age 30

$d_t(a)$: age schedule of deviations from benchmark at any time t

$d_t^o(a)$: idem, if no recuperation after age 30 (= $d_n(30)*k_t$)

k_t: "trough scalar" at time t

$k_t = B/A = cumfert_t(30) - cumfert_b(30) / cumfert_n(30) - cumfert_b(30)$

R_t: "relative recuperation scalar"

$R_t = d_t(30) - d_t(50) / d_n(30) - d_n(50)$

Figure 8: Model for cohort patterns of cumulated age specific fertility deficits $d_t(a)$ relative to a benchmark cohort.

We now turn to table 5 for more details. The values of $d_n(30)$ in series A give the size of the trough at age 30, measured as an average in each country of the trough for cohorts 1 to 3. In Austria, this value of $d_n(30)$ was a deficit of 265 children per 100 women compared to the benchmark cohort, but for the Netherlands this relative deficit was already 370 children, i.e. 40% larger. For the six countries together the average deficit was 279 children. If we take this figure as a common reference for all countries, the time path of postponement can be compared across countries in series B for all five cohorts up till the one born around 1967-71.

Table 5: Evolution of the speed of postponement k_t in the cumulated fertility deficits of cohorts in six Western European countries.
Series A: relative to national standards $d_n(a)$
Series B: relative to common standard for the six countries

		k_t				
	$d_n(30)$	coh1	2	3	4	5
Series A						
Netherlands	-370	0.500	1.054	1.449	1.876	2.192
Belgium	-284	0.694	1.060	1.250	1.588	2.063
Switzerland	-266	0.632	1.117	1.252	1.883	2.301
Austria	-265	0.562	0.966	1.468	1.823	2.294
Germany ex FRG	-252	0.587	0.996	1.413	2.032	2.298
France	-238	0.660	0.987	1.357	2.235	2.903
mean =	*-279*					
Series B						
Netherlands	(-279)	0.663	1.398	1.921	2.487	2.907
Belgium	(-279)	0.706	1.079	1.272	1.616	2.100
Switzerland	(-279)	0.602	1.065	1.194	1.796	2.194
Austria	(-279)	0.534	0.918	1.394	1.731	2.179
Germany ex FRG	(-279)	0.530	0.900	1.276	1.835	2.075
France	(-279)	0.563	0.842	1.158	1.906	2.477
mean k_t =		*0.600*	*1.034*	*1.369*	*1.895*	*2.322*
ratio: k_t / mean k_t						
Netherlands		1.105	1.352	1.403	1.312	1.252
Belgium		1.177	1.044	.929	.853	.904
Switzerland		1.003	1.030	.872	.948	.945
Austria		.890	.888	1.018	.913	.938
Germany ex FRG		.883	.870	.932	.968	.894
France		.938	.814	.846	1.005	1.067

Note 1: cohort 1 born around 1947-51 with small national variations; cohort 5 born around 1967-71.
Note 2: only the k_t-scalars of series A are the ones to be applied to $d_n(a)$ in estimating $d_t(a)$ ($a \leq 30$)

The series B figures illustrate that the Netherlands were already well ahead of the others in terms of postponement by cohort 3, and they have maintained this lead until the latest available cohort. Belgium and Switzerland also had a fairly rapid start, but by cohort 3 the others caught up. Austria, West Germany and France had a slower start with respect to the degree of postponement, but the pace of France quickens for cohorts 4 and 5, so that France becomes second after the Netherlands for the cohort born around 67-71. If we average the k_t-values in series B per cohort over the six countries, and use these averages as a reference time path, then the ratios at the bottom of table 5 are obtained. These illustrate even better how far out the Netherlands have been over the entire period and how the younger French cohorts have been speeding up their rates of postponement.

Table 6 gives the recuperation scalars R_t, first using the national standard of recuperation (i.e. $d_n(30)$ - $d_n(50)$) in series A, then relative to the average of these six standards in series B, and lastly relative to the Dutch standard with large recuperation in series C. On average, the three cohorts with full $d_t(a)$ schedules have reduced the deficit at the trough by 126 children per 1000 women after age 30, which is only 45% of the Dutch performance (+277). This is of course to no small degree caused by the rapid Dutch postponement in the first place, but the Dutch example still illustrates that cohorts can reach quite high fertility levels after age 30.

The R_t-scalars of series A are the proportions in each countries of actual recuperation in each cohort relative to $d_n(30)$ - $d_n(50)$. For instance, the three older Belgian cohorts reduced their deficit only by 51 children on average, and Belgian cohort 1 <u>increased</u> rather than decreased this deficit by 11.8% (see also figure 3). Only Belgian cohort 3 "invents" stronger recuperation.

Belgium and Austria have the smallest national standards of deficit reduction for these three older cohorts of only +51 and +60 children per 1000 women, but by cohort 3, Austrian relative recuperation has become slower than the Belgian degree. The middle group is composed of West Germany and Switzerland with a deficit reduction of +103 and +111 children respectively. The proportions of these amounts recuperated are first higher in Switzerland, but for cohort 3 higher in West Germany. France and the Netherlands have the highest average deficit reduction of +151 and +277 children per 1000 women, and the Netherlands have a <u>proportional</u> deficit reduction (1.632) that is of a similar magnitude as that of West Germany or Austria, but amounts in absolute numbers to 2.7 times (277/103) and to 4.6 (277/60) times as many births per 1000 women.

Table 6: Evolution of the relative recuperation scalar R_t in the cumulated fertility deficits of cohorts in six Western European countries
Series A: relative to national standard $d_n(30)$ - $d_n(50)$
Series B: relative to common average standard
Series C: relative to Dutch standard

	$d_n(30)$ - $d_n(50)$	$R_t = d_t(30) - d_t(50) / d_n(30) - d_n(50)$		
		coh 1	2	3
Series A				
Belgium	+51	-.118	.647	2.510
Austria	+60	.417	.917	1.633
Germany ex FRG	+103	.340	1.000	1.641
Switzerland	+111	.432	1.097	1.471
France	+151	.556	1.026	1.430
Netherlands	+277	.339	1.040	1.632
Mean =	*+126*			
Series B				
Austria	(+126)	.198	.437	.778
Belgium	(+126)	-.047	.262	1.016
Germany ex FRG	(+126)	.278	.817	1.341
France	(+126)	.667	1.230	1.714
Switzerland	(+126)	.532	1.349	1.809
Netherlands	(+126)	.746	2.286	3.587
Series C				
Austria	(+277)	.090	.199	.354
Belgium	(+277)	-.022	.119	.462
Germany ex FRG	(+277)	.126	.372	.610
France	(+277)	.303	.560	.780
Switzerland	(+277)	.242	.614	.823
Netherlands	(+277)	.339	1.040	1.632

Note 1: only the R_t values of series A are the national scalars for $r_n(a)$
Note 2: cohort 1 born around 1947-51, coh. 2 born around 1952-56, coh. 3 born around 1957-61.

The scalars of series B are related to a standard deficit reduction of 126 children which is the average of the national standards. This permits the ranking of countries from weak to strong recuperation witnessed in the cohorts born prior to 1963. Belgian cohorts 1 and 2 show very weak (or no) recuperation, and Austria lags by cohort 3. The Dutch stand out by very strong recuperation, right from the start. The scalars of series C obviously tell the same story, but one can now better appreciate the proportions of deficit reduction relative to the record of the "best performer".

In Appendix A1 we have made a full application of the model with the Dutch data, not only with the aim of checking the model fit, but also to find out what kind of fertility level would be needed by Dutch women after age 30 to maintain the CTFR = 1876 realised by cohort 3. In doing so, we projected the k_t-values for cohorts 6 and 7 by adding curvature to the k_t-time path as to simulate a fast slowing down of postponement. Despite this, cohorts 4 to 7 would have deficits by age 30 relative to the Dutch benchmark cohort of respectively 694, 742, 895 and 958 children. The cumulated offspring at age 30 would then be 1553 (benchmark) minus these numbers. To get back to a CTFR of 1876, these cohorts need to add 1017, 1134, 1218 and 1281 children per 1000 women after age 30, which means that no less than 54.2, 60.4, 64.9 and 68.3% of the CTFR needs to be realised after age 30. Dutch women simply need to have on average more than 1 child after that age to maintain a CTFR in the vicinity of 1.80, even after taking the slowing down of postponement into account. Dutch cohort 4 (born 1963-67), for which we have cumulated fertility till age 35, is just on track to meet this target. The Dutch strong recuperation record apparently still holds for cohort 4 as well.

If we return to figures 1-7 for the deficits in the other countries by ages 25 for cohorts born around 1972-76, then also France and Austria have already deficits of about 700 children at that age relative to their benchmarks. Hence also French and Austrian women equally need to get about 1 child on average after age 30 to maintain their latest observed CTFRs. For France this seems possible given the strong recuperation record of the past, but this is much more problematic for Austria with the weakest recuperation record of all. For the remaining countries, fertility after age 30 could be slightly smaller than 1 child on average to prevent further declines in their CTFRs, provided, however, that they display a slowing down of the rate of postponement.

5. The national views for the future

In this section we shall discuss the fertility forecasts as they are produced by the official national institutions. Only the Swiss materials are missing as a result of non-response by its national statistical office. For the other countries, a summary is given in tables 7 and 8.

For Austria and Germany the fertility forecasts are simply based on the distribution of period age specific fertility rates (ASFRs), and on an overall evolution of the PTFR. There is no checking against complete and partial cohort records, nor are there checks with respect to parity progression ratios. The Austrian authors (Fassmann et al.) produce a tempo shift till 2011 with mean ages at maternity (MAC) increasing by another 1.2 years. There are, furthermore, three "official" German projections and all are based on simple scaling of period ASFRs. Only in one of these is there a mention of further postponement. By contrast, much of the German discussion focuses on the speed of the anticipated rise in PTFR for the "neue Länder". The latest German forecasts have also abandoned any alternative scenarios for the West German PTFR: all three are quite confident that it will stay between 1.35 and 1.40. This level is quite low, especially if used for the next half century. Judging from the West German cohort profiles (see fig. 5), older cohorts have a deficit at age 45 of about 190 children compared to the benchmark (CTFR = 1.798), which implies that they have recuperated to a cohort level of 1.60 children. Even if younger cohorts end up with a larger final deficit of 250 to 300 children per 1000 women, the CTFR would still be between 1.50 and 1.55. Long term PTFRs would hence converge to this level rather than to 1.35 or 1.40. Consequently, all three West German fertility forecasts are on the pessimistic side. The pace of convergence of East German fertility to the West German level is very fast in two of the three projections which expect convergence to happen by 2005. This is a highly speculative matter given that we do not have any idea of the recuperation pattern after age 30 for the GDR post-reunification cohorts. The Austrian projections, which are quite old by now, still maintained a large fork for the PTFRs over a relatively short time horizon (till 2021). In fact, Austria is firmly following the low fertility variant between 1990 and 2000 since the PTFR has dropped to 1.33. Judging from figure 6 and the weak recuperation record, CTFRs may indeed fall to 1.40 - 1.50 for the cohorts born between 1963-67 and 1968-72. Hence, the low fertility variant in the Austrian projections is still a feasible one till about 2015.

Table 7: Overview of fertility hypotheses in Austrian and German national population projections

	Austria: Fassmann et al.	Germany: 9th coordinated projections of statistical offices of Länder	Germany: Ministry of Interior (BMI) projections	Germany: BBR-projections (Agency Regional Planning)
Base year:	1991	2000	2000	1997
End year:	2021	2050	2050	2015
Method:	Shifts in period ASFR schedules till 2011 with MAC rising from 26.7 yrs to 27.9 yrs	All German projections are based on simple scaling of period ASFR-distributions; alternative scenarios used in previous projections were abandonned, only speed of convergence of ex-GDR fertility to ct. FRG level varies		
Scenarios:	(i) PTFR ct. at 1.50	(i) ex FRG: PTFR ct. at 1.40	(i) ex FRG: PTFR: ct. at 1.35	(i) ex FRG: PTFR ct. at 1.37 and MAC rises (no values given)
	(ii) PTFR declining from 1.47 to 1.20 in 2011	(ii) ex GDR: PTFR rises to 1.40 by 2005 (fast convergence)	(ii) ex GDR: PTFR rises to 1.35 by 2005 (fast convergence)	(ii) ex GDR: PTFR rises to 1.37 by 2015 (slower convergence)
	(iii) PTFR rising from 1.47 to 1.80 in 2011			

Sources: H. Bucher & M. Kocks (1999); E. Grünheid (2000); H. Fassmann, J. Kytir, R. Münz (1996)

Notes: BMI = Bundesministerium des Innern
BBR = Bundesamt für Bauwesen und Raumordnung

Table 8: Overview of fertility in hypotheses in French, Belgian and Dutch national population projections

	France: INSEE-projections	Belgium: projections Natl. Institute of Statistics & Federal Planning Office	Netherlands: Central Bureau of Statistics (CBS)
Base year:	1990	1995	2000
End year:	2050	2050	2050
Method:	Projection of cohort completed fertility at various ages up till cohort born in 1980; subsequent translation in period ASFRs and PTFRs	Projection of cohort ASFR-schedules up till cohort born in 1970; subsequent translation in period ASFRs and PTFRs; explicit hypotheses re postponement and catching up at later ages (past age 30)	Projection of cohort parity-specific $PTFR_i$-values and of cohort parity specific MAC_i-values up till cohort born in 1980; subsequent translation in parity-specific period measures; explicit hypotheses re postponement and catching up at later ages
Scenarios:	(i) CTFR declines from 2.08 for cohort born in 1960 to 1.80 for cohort born in 1980 and MAC rises from 27.2 yrs to 28.6 yrs for the same cohorts (ii) CTFR remains stable at 2.09 for all cohorts, but MAC rises from 27.2 yrs to 28.8 yrs for cohort born in 1980 (iii) CTFR declines from 2.08 for cohort born in 1960 to 1.50 for cohort born in 1980, and MAC rises concomitantly from 27.0 to 28.2 years	(i) Cohort ASFRs shift to later ages, with estimated CTFR of 1.78 for cohort born in 1965; for 1970 cohort the high fertility scenario corresponds to a 100% catching up of fertility compared to the 1960 cohort (CTFR=1.83 for coh. 1960, CTFR=1.80 for coh. 1975) (ii) Cohort born in 1965: see above; cohort born in 1970: low fertility scenario corresponds to a 50% catching up compared to the 1960 cohort (CTFR=1.70 for coh. 1975)	Single scenario: coh. 1980 compared to coh. 1965 with $CTFR_1$=0.80, $CTFR_2$=0.65; $CTFR_3$=0.20 and $CTFR_4$=0.10, with minimal rises in MAC_i of no more than 0.2 years. This translates into rises of $PTFR_1$ from 0.68 in 1990 to 0.80 in 2020 and of $PTFR_2$ from 0.54 in 1995 to 0.65 in 2020, so that the PTFR and CTFR converge to 1.75 after 2020. This is a scenario of almost complete recuperation of fertility at later ages
	These three scenarios translate into PTFRs of 1.80, 2.09 and 1.50 from approximately 2015 onward	These scenarios largely determine PTFRs till 2010; long term scenarios foresee no further postponement after 2010 and evolve to three alternatives by 2050: low: to PTFR=1.60 high: to PRFR=1.90 middle: to PTFR=1.75 Simple scaling of period ASFRs of 2010 is then used	

Sources: Quang-Chi Dinh (1995); R. Lesthaeghe & P. Willems (1999); L. Steenhof & A. de Jong (2000)
Note: INSEE = Institut National de la Statistique et des Etudes Economiques

The French, Belgian and Dutch forecasts are based on changes in cohort fertility. The first two countries also adopted a very similar approach since they focus on CTFRs to be expected for the cohorts born in 1975 and 1980, using alternative postponement and recuperation scenarios. Hence, the procedure they used was akin to the one proposed in the model of the previous section. The longer term projections, i.e. after 2010, then use simple scaling of period ASFRs to alternative levels of PTFRs by 2050. For the shorter term, the French low variant is clearly too low given the strong recuperation record of French cohorts. In fact, a CTFR of 2 children is still a good possibility for the cohort born in 1963-67 (see figure 1), and later cohorts may still get to 1.9 despite their acceleration of postponement. Ten years after the starting point of the INSEE projections, French cohort fertility nicely holds the middle between the medium and the high variant.

The Belgian short term projections offer an alternative of more versus less recuperation superimposed on advancing postponement, with two outcomes for the cohort born in 1975: either a CTFR of 1.80 or a CTFR of 1.70, down from a CTFR of 1.83 for the 1960 cohort. At the time of the production of these scenarios both the rate of postponement and of recuperation were slightly underestimated. It seems that recent cohorts postpone more, but also catch up more than their predecessors. But in terms of expected CTFRs for the 1975 cohort, the results are similar, with a lower boundary of 1.75 instead of 1.70. In terms of PTFRs, the Belgian hypotheses translated into a rise after 1995 resulting from the hypothesis of weakening postponement (Willems, 1997). In reality, a small rise of the PTFR did indeed materialize (from 1.56 in 1995 to 1.63 in 1999), but it is smaller than anticipated and probably caused more by slightly better recuperation than by slowing down of postponement.

The Dutch fertility projections are the most involved since cohort fertility is also being followed on a parity specific basis. In tandem with this finer work (Steenhof and de Jong, 2000), the latest projection also abandoned the traditional triple scenarios which were maintained in the previous round of forecasts dating from 1996 (cf. Beets and van Nimwegen, 2000). This older series used CTFRs for the longer term (targets for the 1990 cohort!) of 1.4, 1.7 and 2.0 children respectively. The latest unique scenario assumes a minimal rise for the parity-specific mean ages at childbearing of no more than 0.2 years, which is almost a complete end of postponement. The authors also noted the strong recuperation record of Dutch cohorts so that the CTFR would stop its decline at 1.75 children. In the meantime, the "end of postponement" translates into rises of PTFR1 from 0.68 in 1990 to 0.80 in 2020, and of PTFR2 from 0.54 to 0.65. After 2020 the PTFR and CTFR converge at the 1.75 level. Judging from our model application to the Dutch cohort behaviour (see appendix A1), the 1963-67 cohort is still on track to reach a CTFR of 1.87, so that levels close to 1.80 remain distinct possibilities for the later cohorts as well, despite a slightly higher rate of postponement. Hence, judging from the Dutch cohort data up till now, the 1996 low variant could indeed be abandoned. This equally holds for the high variant since a CTFR return to 2 children looks excessive. For the latter level to be reached, more than 70% of all fertility would have to occur to women after age 30.

On the whole, the last Dutch forecast uses the present state of the art technology and could serve as a model for countries still operating with schedules of period ASFRs. Such simple scaling and curve fitting techniques applied to period data can be abandoned for national forecasts in favour of cohort-based approaches. They are only justifiable if projections need to be produced for many subnational units for which the cohort data are not readily available. Finally, probalistic forecasts equally based on period measures (and often just crude aggregate ones!) are a step backward rather than forward: they totally ignore the intricacies of cohort behaviour with respect to postponement and recuperation. Probabilistic "forecasting" is like throwing dice with PTFRs for the lack of anything better.

6. The quest for explanations

At present we have a plethora of contributing explanatory factors that account for the new patterns of family formation and for concomitant postponement. The most general ones are:

(i) increased female education and female economic autonomy;

(ii) rising and high consumption aspirations that created a need for a second income in households and equally fostered increased female labour force participation;

(iii) increased investments in career developments by both sexes, in tandem with increased competition in the workplace;

(iv) rising "post-materialist" traits such as self-actualisation, ethical autonomy, freedom of choice and tolerance for the non-conventional;

(v) a greater stress on the quality of life with a rising taste for leasure as well;

(vi) a retreat from irreversable commitments and a desire for maintaining an "open future";

(vii) rising probabilities of separation and divorce, and hence a more cautious "investment in identity".

To these, we undoubtedly need to add country specific parameters, such as:

(i) the geographical mobility of young adults in tertiary education;

(ii) lack or availability of state subsidies for students in the forms of fellowships, housing facilities and transportation subsidies;

(iii) the flexibility of the labour market, including the possibilities for part-time work;

(iv) youth unemployment;

(v) minimum income guarantees;

(vi) costs and availability of housing, both for "starters" and for households in further stages of family formation (often linked to the structure of the housing market and its regulations)

(vii) contraceptive availability and method mix; access to abortion.

Obviously, this list is by no means limitative. The challenge for the present paper would be to link the differential degrees of fertility postponement and recuperation in the six selected countries to such factors. But, we have more explanatory factors than observations. Also, we need to get the record strait with respect to the strict demographic parameters of postponement and recuperation, and there is no lack of variation with respect to either in our small collection of cases. This variation exists both between countries and between generations within a single country. With respect to the first type of variation, there is a large difference between the two extreme countries, i.e. Austria and the Netherlands. Austria has a modest degree of postponement and weak recuperation in all cohorts, combined with a low benchmark fertility to start with. The Netherlands, by contrast, have record postponement, but coupled to almost complete recuperation. The second type of variation can be found in the Belgian experience: the two earlier cohorts were postponing but not catching up subsequently, whereas the next cohorts are recuperating to a much higher degree. Belgium and Switzerland also had a time track of postponement with a rapid start and a slower ending, whereas France provides an example of the opposite. Such intricacies must have a reason, but these are not readily detectable. Hence, what follows is highly speculative.

We would attribute the Austrian pattern of relatively high fertility at younger ages and modest postponement to early couple formation and to earlier transitions into the labour force. This shows up in the low progression of both sexes to advanced education: from age 18 onward education enrolment rates drop well below these of the other countries (cf. Eurostat, 2000: 120, 126). Similarly, activity and employment rates are much higher in the age group 15-24 for both sexes (Ibidem: 132, 138, 142), and this is not due to excessively high part-time employment as in the Netherlands. These features are translated into a fairly early mean age at marriage combined with high proportions cohabiting at younger ages, and further with high fertility among cohabitants. This Austrian pattern is not new and just the continuation of a historical pattern of early fertility by Western European standards. Fertility after age 30 was not "fashionable", and this has remained so even in the face of declining fertility prior to that age.

Belgium has also a fairly "early start" pattern, but it is linked to the predominance of the direct transition from residence in the parental home to marriage. Belgians are relatively late home leavers: they have high enrolment in advanced education, but study close to home and cannot benefit from adequate fellowshops to start living on their own or to move into cohabitation. The labour market for part-time jobs only started growing in the 1990s as well, which equally accounts for the late independence of young adults.There is no housing shortage and a completely open housing market, and Belgian cohorts quickly acquire a first dwelling during the starting phase of their career development. The first birth within marriage is postponed until this minimum standard of material comfort and financial security is reached. Only more recently is there a catching up of premarital cohabitation, but most first births still occur within marriage. Also the recuperation phase of fertility came quite late, but at present, fertility at later ages is regarded as the "finishing touch". This is also facilitated by the fact that real estate prices have been low by EU standards, and by the open housing market permitting a move to a larger dwelling in anticipation of family enlargement. Hence, the Belgian pattern is conservative in the sense that material and financial parameters need to be under control before the family extension phase is allowed to start.

France and Switzerland have initially similar patterns of household formation corresponding to similar education enrolment rates, but the French starting pattern of procreation is much earlier than the traditionally late Swiss one. The proportions of young adults residing with parents in France and Switzerland are similar and about 10 percentage points lower than in Belgium. Home leavers also move about equally into single living and into premarital cohabitation in both countries, but then the similarity stops. In France cohabitants start procreation without marriage, whereas the Swiss do not. This already accounts for a first part of the difference in the timing of fertility. But the Swiss have also maintained a very high age at first marriage by Western European standards ever since the cohort born in 1930 (see Council of Europe, 2000: 65). This pattern has obviously historical roots, but high housing costs and real estate prices may also have been a contributing factor. Hence, with comparable enrolment and activity rates, the French pattern of fertility has remained earlier, whereas the Swiss have been accustomed to a late start, again at least since the 1930 cohort (Ibidem: 85). Finally, one will not fail to notice the strong contrast in this respect between the two Alpine countries, Switzerland and Austria.

The contrast between the two parts of Germany is of course the most striking of all. The West German pattern is typically western, but until recently with somewhat lower education enrolment rates than in France or the Low Countries, and hence slightly higher activity rates prior to age 25. At present this distinction is disappearing and West German enrolment rates between ages 21 and 24 are the highest of the six countries considered (Eurostat, 2000: 120, 126). West German ages at first marriage have also risen rapidly after 1950 and are at par with the French figures, but still lower than the Swiss ones. Pre-marital cohabitation and out of wedlock fertility, however, are at par with the Belgian figures, meaning that the West Germans also fit the conservative end of the spectrum in this respect. However, prior to age 25 single living in West Germany constitutes the dominant pattern of home leaving, and it is from this state that most transitions are made into marriage and subsequently into parenthood. East Germany came in with the diametrically opposite pattern. East Germans had very early marriage and early parenthood, even in cohabitation, as a result of both secure housing for young couples and an earlier entry into the labour force. Hence, it is not al all astonishing that the pre-unification cohorts had no postponement and very stable cohort profiles of fertility. These had only been temporarily disrupted by much earlier policies, which then operated shortly after each other in mutually canceling directions. Housing and job security ended with the "Wende", and the reaction has been postponement on a massive scale. This experiment in the sudden alteration of material living conditions clearly illustrates that such conditions matter a great deal in producing demographic outcomes.

The Dutch pattern of strong postponement, finally, is also connected to specific elements of Dutch living conditions and social organization. First, home leaving in the Netherlands is facilitated by high subsidies in the form of scholarships, student housing and free transportation for students. The Netherlands have also high enrolment rates till age 20, but also the highest rate of students not finishing in time (i.e. by age 24) (Eurostat, 2000: 120, 126). Prolonged education is furthermore facilitated by a large market -- and also a high demand -- for part time work. Hence, when Belgian students still depend on their parents for much of their income, their Dutch counterparts move out to live on their own or with a partner. Also non-students have followed this pattern of earlier home leaving, and the low overall unemployment in tandem with the large part-time labour market has helped them in doing so. But after these opportunities, constraints hit in the next phase, and particularly with respect to housing. The Netherlands have had a long standing housing shortage, and the planned response to it has been the construction of small flats that are mostly rented in the public sector. In the meantime, Dutch tastes for something larger and for home ownership have steadily increased, with a shift of the shortage toward the sector of larger homes that are for sale. Real estate prices have of course risen accordingly. Furthermore, since procreation is still largely confined to marriage (see also Belgium, Switzerland, West Germany), married couples postpone childbearing to satisfy material aspiration and particularly the one for larger housing. Home ownership is within reach for double income earners, but not for single income households anymore. Hence, the Dutch housing squeeze may not be the sole reason for record fertility postponement, but it certainly is one of the major ones. The prolonged experience of living a life without firm commitments prior to marriage may be another factor, and also the high tolerance for anything unconventional would equally operate in the same direction.

So far, we have mainly directed attention to the reasons for differing degrees of postponement, but we still have not offered any explanation for differential recuperation. Furthermore, as indicated before (Lesthaeghe and Moors, 2000), the literature is remarkably mute on this subject. This is an anomaly since it is quite evident by now that the degree of catching up is essential in determining PTFR-levels and future cohort sizes. In short, it is high time for demographers to address this topic.

In this vacuum we can think of two factors that may be of importance. The first one is that high separation and divorce rates lead to many interrupted life courses, and these may curtail subsequent fertility. From this, one could expect that high divorce countries would have reduced fertility recuperation. A glance at the time series of national total divorce rates (TDR) indicates that this effect must be overshadowed by much stronger ones. In our set of six countries only, the Netherlands still have the lowest TDR, which fits the expectation, but the TDRs for the other five countries are too similar to explain any variation in fertility recuperation after age 30 (see table A2 in appendix). We also expect the correlation to reverse if a wider European sample is considered: Scandinavian countries have relatively high TDRs but strong recuperation, whereas the Southern European countries exhibit the reverse combination. Hence, family disruption may be a negative factor for subsequent fertility at the individual level, but the extrapolation to the macro level is not promising.

Our second hypothesis is that historical patterns are of relevance: catching up would be stronger in countries that have had a tradition of later starting of family formation and hence also a tradition of fertility concentration in later ages. To check this, we have prepared table 9 in which we relate the patterns in mean ages at first marriage (MAFM) and of mean ages at childbearing (MAC) to the relative recuperation scalar R_t from table 6 (series B). For this purpose we also use MAFM and MAC-values for the older cohort born in 1935. It turns out that there is a consistent ranking of the countries across time with respect to these cohort indicators of initiation of family formation, with the GDR having by far the overall earliest pattern, and Switzerland and the Netherlands the latest. This means that we are facing robust national differences and traditions with historical roots. The R_t-values for the three cohorts with completed fertility now appear to follow this ranking quite closely: the countries with a tradition of late starting and of fertility concentration at later ages have at present also the strongest recuperation record in cohort fertility (i.e. Switzerland and the Netherlands), whereas those with much earlier historical patterns of family formation and less concentration of fertility at older ages (i.e. Austria and Belgium) have been weak recuperators or slow starters in this respect. The other two countries, West Germany and France hold the middle ground on all accounts. So far, this finding lends credence to the fact that historical national patterns have become cultural traits, and that these are equally operative in determining the degree of recuperation. Unfortunately, when checked against a data set with 12 countries, including three Scandinavian and three Southern European ones, the correspondence vanishes. Sweden, Norway and Denmark had values of MAFM and MAC for the cohort of 1935 that were as early as those for Belgium and Austria, but they have a strong recuperation pattern, whereas Spain, Italy and Portugal had MAFM and MAC values similar to the Swiss and Dutch levels, while being very weak recuperation countries at present.

The conclusion for this section is that we have a wide range of economic and ideational reasons to explain postponement, but are left empty handed when it comes to account for differential patterns with respect to recuperation. The search obviously continues.

Table 9: Relationship between the relative degree of fertility recuperation (R_t) in cohorts and historical cohort patterns of mean ages at first marriage (MAFM) and mean ages at childbearing (MAC)

	MAFM cohort born in			MAC cohort born in			R_t (B-series) cohort born in		
	1935	1950	1965	1935	1950	1960	47-51	52-56	57-62
A. Very early									
ex GDR	22.5	21.5	22.9	25.8	24.5	24.3	..	..	..
B. Early									
Austria	23.3	22.4	24.8	27.2	25.8	26.5	.198	.437	.778
Belgium	22.3	22.0	24.0	27.2	26.1	27.3	-.047	.262	1.016
C. Middle									
ex FRG	23.5	22.2	25.3	27.3	26.2	27.9	.278	.817	1.341
France	23.0	22.6	25.5	27.1	26.5	27.7	.667	1.230	1.714
D. Late									
Switzerland	24.5	24.4	26.9	28.0	27.3	28.7	.532	1.349	1.809
Netherlands	24.0	22.6	26.0	28.1	27.3	29.4	.746	2.286	3.587

Note: sources for MAFM and MAC: Council of Europe (2000): 65, 85

7. Conclusions

The small set of Western European countries studied here display a high degree of heterogeneity with respect to all "second demographic transition" variables. There are strong contrasts with respect to patterns of home leaving (Belgium versus France), moving into cohabitation (West Germany versus Austria), procreation before marriage (Switzerland versus Austria), slower fertility postponement versus very rapid (West Germany versus the Netherlands) and weak fertility recuperation after age 30 versus strong (Austria versus the

Netherlands). Of course, the "neue Länder" add a pattern of their own which is essentially common to most other formerly Communist countries.

To explain fertility postponement we can draw on an extensive series of contributing factors, both of a more general and of a more ideosyncratic nature, but we essentially remain empty handed when it comes to account for differential recuperation. In the six countries considered, it appears that countries with a strong recuperation record also had an earlier tradition of late starting and more fertility concentration in the later ages, whereas those with a weak or slow recuperation record had a tradition of earlier starting. However, this correspondence is not robust when checked against a wider European experience.
Better results can be reported on the technical side, and more particularly with respect to the modeling of national age patterns of cumulated fertility deficits relative to a benchmark cohort. The proposed model permits a succinct parametrisation in terms of two time specific scalars, one for postponement and one for recuperation. The replication of the whole age pattern of cumulated deficits remains, however, dependent on the use of a national standard age pattern of deviations. The use of the model indicates that further declines in the latest completed cohort fertility (CTFR) can be avoided if fertility after age 30 comes close to an average of 1 child in the countries with slower postponement and equals or exceeds 1 child in the countries with high levels of postponement. This means that more than half of the final cohort offspring needs to be realised after age 30. Reasonable CTFR estimates for the cohorts now reaching age 30 are 1.90 - 1.95 in France, 1.75 - 1.80 in Belgium and the Netherlands, 1.50 - 1.55 for West Germany, but only 1.40 - 1.50 in Austria. These levels are slightly higher than those used in the latest national fertility projections of the statistical offices of France, Belgium and the Netherlands, but quite a bit higher than in the three West German projections. For Austria this means a redirection toward the middle road between the low and the middle variant. Forecasts for the "neue Länder" are hazardous since we have no idea of what the recuperation part of the cohort schedule could look like, and the same is likely to hold for the other formerly Communist countries as well.

Possibly with the exception of France, CTFRs for cohorts with incomplete fertility are not likely to climb back to replacement level. Even if the pace of postponement tapers off, the amounts of recuperation needed are too large to achieve this goal. Also for West Germany or Austria, a return to CTFRs of 1.60 seems beyond reach given their inadequate recuperation records so far.

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Table A.1.: Model for cohort patterns of cumulated fertility deficits by age dt(a) applied to the data for the Netherlands.

1. Data

1.a.Cumulated fertility by age per 1000 women

	c43-47	c48-52	c53-57	c58-62	c63-67	c68-72	c73-77	c78-82
up to age:	benchm.	coh 1	coh 2	coh 3	coh 4	coh 5	coh 6	coh 7
20	103	107	87	48	38	34	35	25
25	821	668	517	379	293	237	205	
30	1553	1368	1163	1017	859	742		
35	1857	1719	1636	1578	1504			
40	1942	1845	1818	1833				
45	1958	1869	1858	1876				
50	1960	1869	1858	1876		CTFR per 1000 women.		

1.b. Deficits relative to benchmark cohort of '43-47. (=dt(a))

by age :	benchm.	coh 1	coh 2	coh 3	averag 1-3	coh 4	coh 5	coh 6
20	0	4	-16	-55	*-22*	-65	-69	-68
25	0	-153	-304	-442	*-300*	-523	-584	-616
30	0	-185	-390	-536	*-370*	-694	-811	
35	0	-138	-221	-279	*-213*	-353		
40	0	-97	-124	-109	*-110*			
45	0	-89	-100	-82	*-90*			coh 7
50	0	-91	-102	-84	*-92*			-78

average 1-3 = dn(a)

2. Time path kt for cohorts with completed fertility at age 30, dn(30)=-370

kt = dt(30)-dt(50) / -370

	kt
benchm	0
coh 1	0,5
coh 2	1,054
coh 3	1,449
coh 4	1,876
coh 5	2,192
coh 6 ?	*2,42*
coh 7 ?	*2,59*

extrapolations = assumed slowing down of postponement

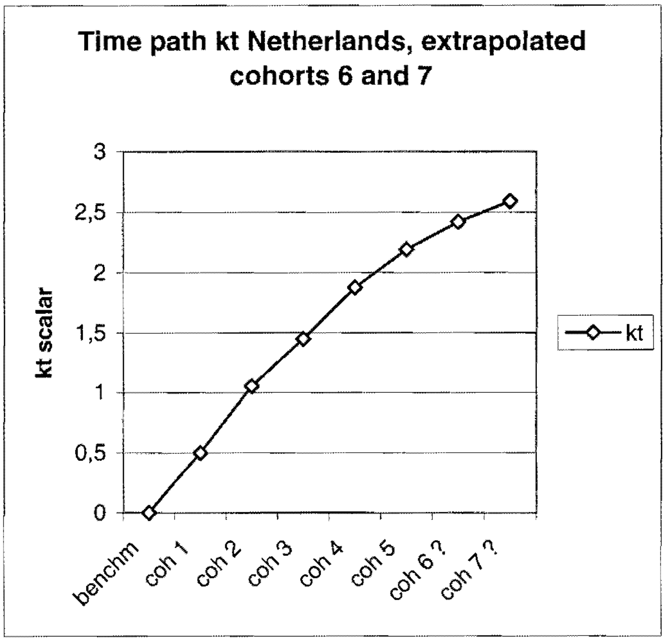

Table A.1. Continued -- example Netherlands

3. Choice of national dn(a) and rn(a) (see average dt(a) for cohorts 1 thru 3)

	dn(a)	dn°(a)	rn(a)	Rt-scalar	
by age		no recup	recup		
20	-22	-22	0	coh 1	94/278= 0.338
25	-300	-300	0	coh 2	288/278=1.036
30	-370	-370	0	coh 3	452/278=1.262
35	-213	-370	157		
40	-110	-370	260		
45	-90	-370	280		
50	-92	-370	278		

4. Checking fit (e.g. for cohort 3)

by age	dn(a) *	kt =		dt'(a)	dt(a) obs	ratio
20	-22	1,449		-32	-55	0,58
25	-300	1,449		-435	-442	0,98
30	-370	1,449		-536	-536	1
	dt(30) +	rn(a) *	Rt =			
35	-536	157	1,626	-281	-279	1,01
40	-536	260	1,626	-113	-109	1,04
45	-536	280	1,626	-81	-82	0,99
50	-536	278	1,626	-84	-84	1

Note : estimated dt(a) should equal observed dt(a) at ages 30 and 50 (by definition)

5.What can we expect for the INCOMPLETE cohorts if they follow the extrapolated trend in kt (see previous page) and if they were to reach the same CTFR of coh 3 (=1876 or d3(50)=-84)? Example for cohort 7. (kt set at 2.59)

by age	dn(a) *	kt =	d7'(a)
20	-22	2,59	-57
25	-300	2,59	-777
30	-370	2,59	-958

R7= -958 -(-84) / -278 = 3.144 (Rt needed to get back to final deficit of -84)

by age	d7(30) +	rn(a) *	R7 =	d7'(a)	
35	-958	157	3,144	-464	
40	-958	260	3,144	-141	
45	-958	280	3,144	-78	
50	-958	278	3,144	-84	ok !

cum.fert coh 7 at age 30 = 1553 (benchmark level) -958= 597 recup needed to get to CTFR of 1876 is 1876-958=1281 or 68.3 % of CTFR !

same exercise other cohorts
coh 4 54.2% of CTFR needed after age 30
coh 5 60,40%
coh 6 64,90%
coh 7 68,30%

estimated d4(35) with kt=1.876 and R4=2.194 (to reach CTFR of 1876) is -350 ;
observed deficit is -353. Hence cohort 4 was on track till age 35 to reach CTFR of cohort 3 or CTFR=1876

Table A2: Period total divorce rate (PTDR) per 100 married women in selected Western European countries, 1960-1999

	Austria	Belgium	France	Netherlands	Germany ex FRG	Germany ex GDR	Switzerland
1960	14	7	9	6	..	16	12
1970	18	10	12	10	15	21	15
1980	26	20	22	24	23	32	27
1990	33	31	32	28	31	24	33
1995	38	55	36	36	38	18	38
1996	38	45	36	37	39	20	39
1997	39	43	35	37	42	27	41
1998	39	44	..	36	..	..	43
1999	40	44	..	37	..	..	50

Note: the PTDR is the sum of the marriage duration specific divorce rates.
Source: Council of Europe (1999 & 2000)