PARITY STRUCTURE OF LOW-FERTILITY POPULATIONS[1]

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Parity dynamics vary among low-fertility populations. Births of different parities may acquire a leading role in the fertility decline. Different distributions of women by number of children may lead to similar completed cohort fertility; similar levels of period fertility sometimes result from their different structures by birth order. Reducing the real parity distributions to three categories (none, one or two, and three or more) is consistent with the prevailing perceptions of the types of families and may clarify the demographics of reproductive behaviour in the low-fertility populations.

At the beginning of the 20th century, the proportions of childless and high-parity women varied considerably among the presently low-fertility populations. That variation was partly, but not entirely, determined by the timing of the first demographic transition. In the countries that pioneered the transition completed fertility of the cohorts born at the beginning of the 20th century was already close to replacement (e.g. 2.1 children per woman in Germany, 2.3 children per woman in France and 2.3-2.5 children per woman in the United States) and only about one-third of women had three live births or more (figure 1), while more than 20 per cent remained childless (figure 2). Where the transition started later, higher completed fertility was associated with higher prevalence of high-parity women and lower childlessness. For instance, women who had three children or more represented 60 per cent of the cohorts born at the beginning of the 20th century in Russia and almost 75 per cent in Japan (figure 1), while the proportion childless was around 10 per cent in both countries (figure 2).

The parity structure of the cohorts born in the first third of the 20th century evolved in the opposite directions in the two groups of countries. In Japan and Russia the fertility decline accelerated and brought completed fertility of the cohorts born in the early 1930s to or even below replacement level. In Japan that decline was achieved almost exclusively by the decrease of high-parity births (the proportion of women with more than two births fell by 40 percentage points) – in spite of slightly decreasing childlessness. In the Russian Federation the proportion of high-parity women also went down steeply (by 30 percentage points). While the overall long-term trend in childlessness in Russia was similar to that in Japan, there was a transient increase of the proportion childless among the cohorts born in the 1920s, which was caused by wide sex imbalances created by the Second World War.

In France and the United States fertility decline was reversed, partly as a result of the baby boom, for the cohorts born during the first three decades of the century. The temporary increase of completed fertility was achieved through increasing prevalence of high-parity women (figure 1) and decreasing childlessness (figure 2). In Germany the decrease of childlessness was particularly pronounced as the proportion childless declined by 12 percentage points, but the proportion of high-parity women changed marginally. Among the cohorts born after 1950, the decreasing share of large families did not play a discernible role in the decrease of the average family size.

In France, Germany and the United States, the proportion of high-parity women resumed its decrease in the cohorts born in the early 1930s and later (figure 1). For those cohorts, childlessness increased steeply in Germany and the United States, while it stabilized in France

[1] Based on United Nations (2004) *Partnership and Reproductive Behaviour in Low-Fertility Countries*. Sales No. E.03.XIII.5

(figure 2). In the Russian Federation, the proportion of high-parity women, but not childlessness, was also decreasing rapidly (figures 1 and 2). In Spain, the Republic of Korea and Singapore decreasing number of large families also played the decisive role in fertility decline above as well as below the replacement level.

The parity structures of cohorts born in the 1950s (the youngest cohorts for which uncensored data is available) vary largely. Even identical cohort fertility levels often resulted from quite different parity progression ratios (table 1). Many women remained childless in the United Kingdom (21 per cent) and the United States (15 per cent), but childlessness was compensated by higher propensity of women who already had one child to bear a second, and of those with two children to have more. On the contrary, in Italy, Spain and the Russian Federation only 7 to 11 per cent of women remained childless, but much fewer women who had one child had a second, and of those with two children a much smaller number proceeded to higher parities.

Decreasing inclination of women at parity two to have more children and increasing childlessness lead to growing proportions of women with one or two children. Between the cohorts born in the early 1930s and the cohorts born in the early 1960s the proportion of women with one or two children rose by 50 percentage points in Japan, 30 percentage points in Spain, 35 percentage points in the Russian Federation, 20 percentage points in the United States and 15 percentage points in the Netherlands. The percentage of women with small families (1 to 2 children) varies across countries with below-replacement fertility. In the cohorts born in the early 1960s, the combined share of one- and two-children families varies from around 50 per cent in Northern and Western Europe and the United States to more than 70 per cent in Southern Europe, the Russian Federation and Eastern Asia.

The period perspective sheds additional light on the role of changing parity structure in fertility decline. Table 2 shows, for selected countries, the share of the decline of the total fertility rate contributed by the decrease of first, second and third- and higher-order births during two periods. The first period starts from the earliest date with available data on order-specific fertility rates and ends when the total fertility rates reaches replacement level. The latest available estimate closes the second period. The data shows that the parity structure of fertility decline varies largely across countries and between periods. The decreases in births of order three or higher accounted from one half of the fertility decline to replacement level in Spain to almost all the decline in Hong Kong. The decreases of first- order births contributed from zero per cent of TFR decline in Hong Kong to 25 per cent in the Netherlands.

In the second period, the parity structure of fertility decline changed in all countries except Spain and became more "balanced": the contribution of high-parity births decreased everywhere while the role of first and second-order births increased. This shift was particularly pronounced in Poland. However, there is considerable variation of parity 'inputs' in the fertility decline. For instance, the inputs of first-order births versus second-order births differ enormously. In Hong Kong, Poland and Spain first- and second-order births contributed equally to fertility decline; in the Netherlands, decreasing second births contributed to 42 per cent of TFR decline while the first births, only 17 per cent; in Finland these indicators are 4 per cent and 52 per cent respectively.

Increasing levels of childlessness may be inferred from the dynamics of first-order period total fertility rates (figure 3). While in most countries (Netherlands is a notable exception), the first order period fertility rates 30 to 40 years ago used to fluctuate around one child per woman, now they are in the range of 0.5 (Hong Kong) to 0.8 (United States) children per woman. Such low rates may partly result from large-scale postponement of first births, but they should then be transitory and increase as deferred births are recuperated. In reality, the periods when first-order

total fertility rates remain much below unity longer than warranted by postponement-recuperation effect.

TABLE 1. PARITY PROGRESSION RATIOS IN COHORTS WITH IDENTICAL [a] COMPLETED FERTILITY: SELECTED COUNTRIES

Country	Cohort	Parity progression ratios			
		0-1	1-2	2-3	3-4
United Kingdom	1960	0.79	0.85	0.48	0.34
Netherlands	1955	0.82	0.80	0.38	0.32
United States	1960	0.85	0.79	0.48	..
Spain	1955	0.89	0.75	0.34	0.30
Russian Federation	1955	0.93	0.71	0.27	0.28
Italy	1950	0.89	0.74	0.36	0.00

Sources: Eurostat, Goskomstat Russia, United States Bureau of the Census
NOTE: [a] 1.9 children per woman

TABLE 2. DECLINE OF TOTAL FERTILITY RATE DURING TWO PERIODS: SELECTED COUNTRIES

A. Total fertility rate (children per woman)

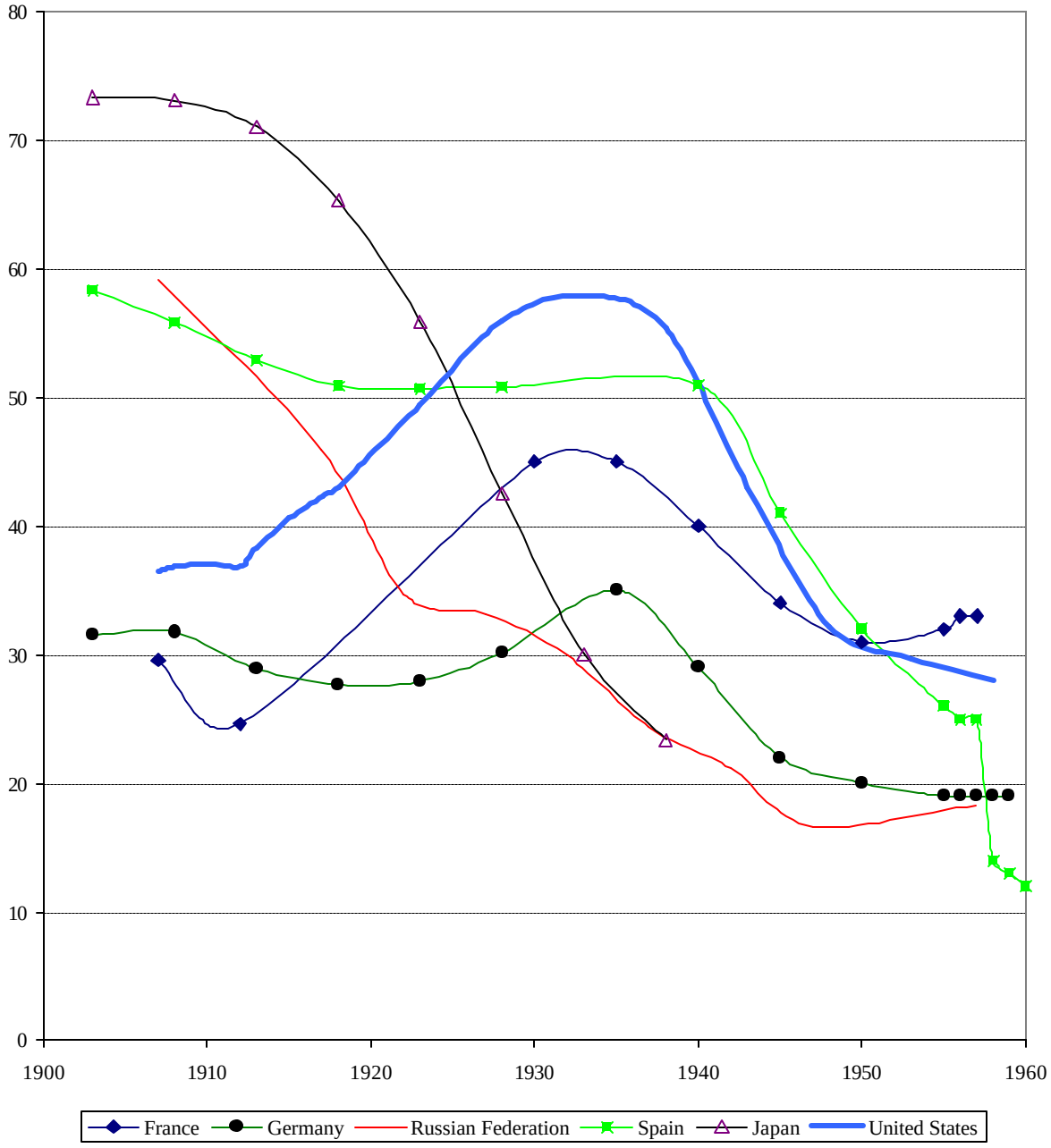
Country	Beginning of observation		Replacement level		Late 1990s	
	Year	Value	Year	Value	Year	Value
Finland	1949	3.32	1968	2.06	1998	1.70
Hong Kong	1969	3.41	1979	2.13	1998	0.87
Netherlands	1961	2.60	1971	2.13	1996	1.51
Poland	1964	2.57	1989	2.08	1997	1.51
Spain	1975	2.75	1982	1.94	1998	1.17

B. Structure of fertility decline[a] by birth order (per cent)

Country	Decline to replacement level (per cent)			Decline below replacement level (per cent)		
	First order	Second order	Third order and higher	First order	Second order	Third order and hig
Finland	13	23	63	52	4	44
Hong Kong	0	3	97	24	29	47
Netherlands	25	12	64	17	42	41
Poland	12	8	80	33	39	28
Spain	23	26	51	26	24	50

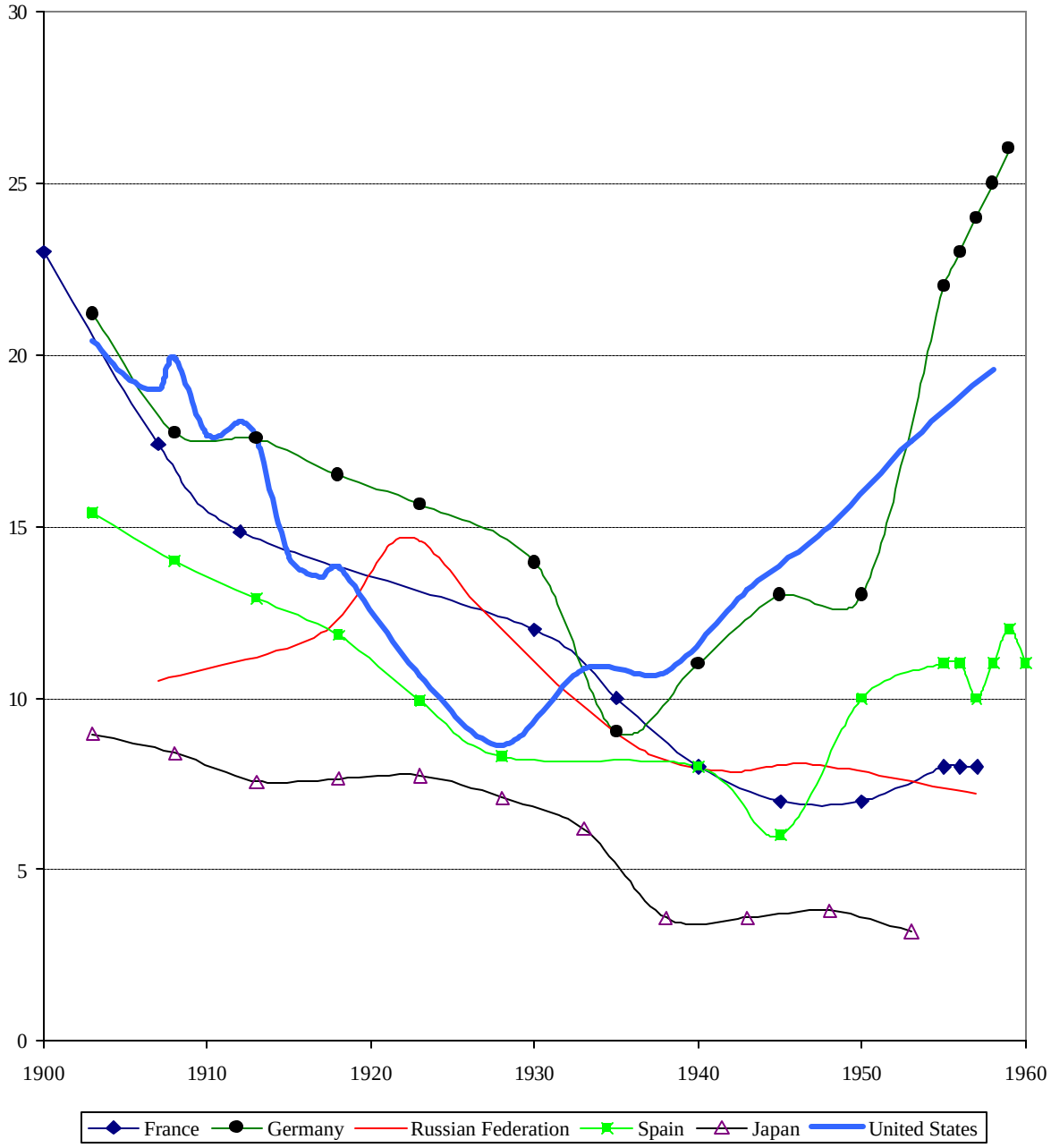
Source: United Nations Population Division
Note: [a] percentage contribution of order-specific total fertility decline to overall decline of total fertility rate.

FIGURE 1. PROPORTION OF WOMEN WITH THREE CHILDREN OR MORE BY GENERATION, 1903-1960
(PER CENT)



Sources: Eurostat, United Nations Statistics Division

FIGURE 2. PROPORTION OF CHILDLESS WOMEN BY GENERATION, 1900-1960
(PER CENT)



Sources: Eurostat, United Nations Statistics Division

Figure 3. Total fertility rates by birth order, adjusted for tempo effect: selected countries, 1996-1999

Sources: United Nations Population Division