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## CHAPTER 5 / THE CURRENT FERTILITY DECLINE AND PROJECTED FERTILITY CHANGES

The postwar peak of fertility was reached in 1957. Since that date, the total fertility rate has declined, at first only gradually, but in the past few years quite substantially. At the same time, per capita real disposable income, a commonly used index of economic conditions in correlations with fertility, has continued to rise at an average rate only slightly lower than previously. Does this mean that economic factors have had little to do with the recent fertility decline? Does it raise doubts about the explanation offered in Chapter 4 for the baby boom? While a thorough investigation of these questions is not attempted here, it is possible to determine whether in recent years economic factors have changed in at least a direction conducive to fertility decline, and to consider the implications for recent fertility projections. As in Chapter 4, the focus is on those in the earlier childbearing ages. No attempt is made to subdivide the population further into color-nativity or other component groups, a decision partly justified by increasing homogeneity of the population [124], but chiefly by expediency. The more limited time span under study makes it possible to base the present analysis largely on the invaluable population and labor force surveys of the past two decades, which provide fairly continuous data heretofore unavailable on the economic experience and demographic behavior of component groups in the population. In keeping with our interest in the longer-term movement rather than year-to-year fluctuations, these data have been smoothed, where possible, by a three-year moving average. For the most part, attention will center on comparisons between the period of the baby boom and that of the current fertility decline. Since it is only after World War II that most of the series become available annually, I have linked them with a

prewar observation, usually for 1940, to fill out the picture for the earlier period.

In one respect, this analysis develops further the framework of Chapter 4. The analytical focus there was on the rate of change in fertility, thus making it possible to largely set aside considerations regarding the secular trend. This chapter, however, deals directly with the level of fertility; and, while not attempting a study of the long-term primary trend itself, does introduce one factor believed relevant to it, namely, the desired consumption level of those in early child-bearing ages.

## FERTILITY AND YOUNG ADULTS' CIRCUMSTANCES SINCE 1940

### *Fertility*

The fertility pattern since 1940 will be lightly touched on only, since it is more than adequately treated elsewhere [201]. Figure 30 presents three-year moving averages of the total fertility rate and age-specific birth rates for females over the period 1940-63. Only a few observations require mention.

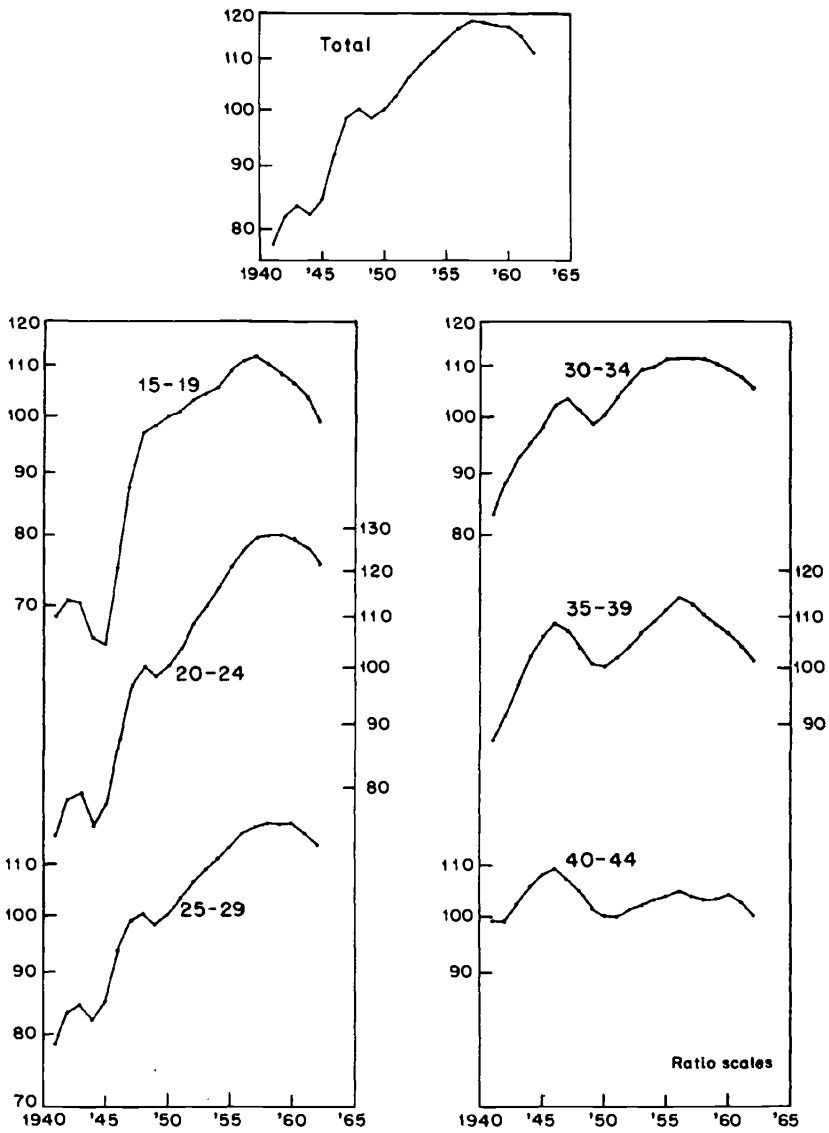
1. The increase from 1940-42 to the peak in the late 1950's is much greater for the age groups 15-19 through 25-29 than for the older ones. Indeed, together the three youngest age groups account for most of the rise in the total. If the rates for no other groups had changed, the rise to the 1957-59 peak in the total fertility rate would have been 44 per cent. This compares with an actual increase of 53 per cent.

2. Although there is no systematic difference between the younger and older age groups in the decline since 1957-59, the younger groups again account for most of the movement in the total (-4.3 versus -5.7 per cent, actual).

3. Within the younger age groups, there is a systematic difference by age in the recent decline. It occurs first and is greatest for those aged 15-19, followed by the 20-24, and finally, the 25-29. The peak for the 15-19 group occurs in 1956-58, ahead of that in the total, and the decline to 1961-63 is 12 per cent; for those aged 25-29, the peak is stretched out over 1957-61, and the decline to 1961-63 totals 3 per cent.

FIGURE 30

TOTAL FERTILITY RATE AND BIRTH RATE, BY AGE OF MOTHER, 1940-63<sup>a</sup>  
(INDEX: 1949-51 = 100)

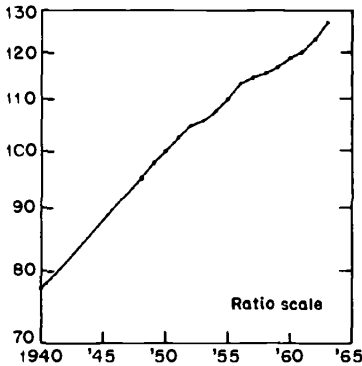


SOURCE: Table D-1.

<sup>a</sup> Three-year moving average.

FIGURE 31

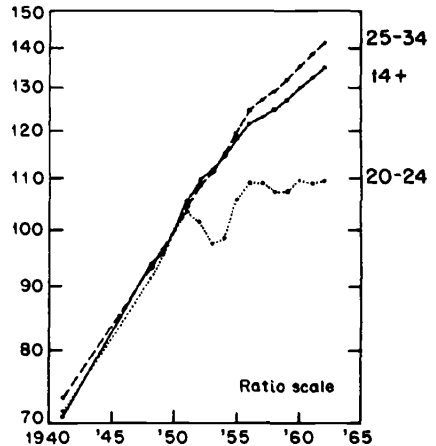
PER CAPITA DISPOSABLE INCOME IN 1964 DOLLARS: TOTAL POPULATION, 1940 AND 1947-64<sup>a</sup>  
(INDEX: 1949-51 = 100)



SOURCE: Table D-2.  
<sup>a</sup> Three-year moving average.

FIGURE 32

MEDIAN TOTAL MONEY INCOME IN 1959 DOLLARS: MALE INCOME RECIPIENTS, BY AGE, 1941 AND 1947-63<sup>a</sup>  
(INDEX: 1949-51 = 100)



SOURCE: Table D-3.  
<sup>a</sup> Three-year moving average.

**Economic Condition**

The income data assembled here are chiefly from the Current Population Survey and accordingly follow the concepts used therein.<sup>1</sup> Since nonmonetary income is omitted from the Survey, the position of farmers is somewhat understated. Use is made here of the figures both for income of persons, i.e., income recipients alone, and for families, including individuals both with and without income. The figures have been adjusted to a constant price level by the consumer price index.

These are the principal impressions which emerge from inspection of the charts:

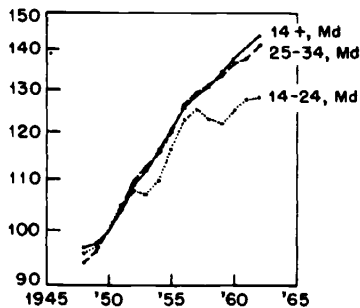
1. As previously noted, per capita disposable income, a commonly used index of economic conditions in correlations with fertility, continues to grow throughout the last decade or so, though at a somewhat lower rate than in the 1940's (Figure 31). If one considers all age

<sup>1</sup> Dorothy S. Brady and F. Gerard Adams have recently prepared comparable estimates by age for 1941 [22], thus providing an invaluable prewar bench mark. I am grateful for the opportunity to use a prepublication version of these estimates.

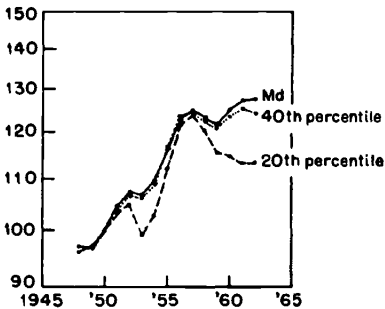
FIGURE 33

TOTAL MONEY INCOME IN 1959 DOLLARS: FAMILIES, BY AGE OF HEAD AND RANK WITHIN AGE GROUP, 1947-63<sup>a</sup>  
(INDEX: 1949-51 = 100)

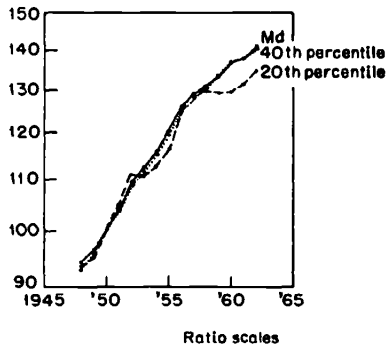
A. By Age of Head



B. By Rank for Families with Head Aged 14-24



C. By Rank for Families with Head Aged 25-34



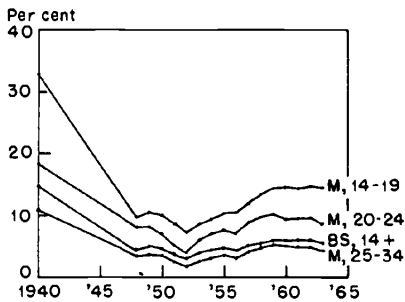
SOURCE: Table D-4.

<sup>a</sup> Three-year moving average.

groups 14 and over combined, the same is true of the median income of male income recipients (Figure 32) and, for the somewhat shorter span for which data are available, the median income of all families (Figure 33, Part A).

2. Investigation of income experience by age makes clear that the aggregative movement in recent years is not representative of the experience of the younger age groups. This has typically been less favorable. Moreover, the differences between the younger age groups

FIGURE 34  
UNEMPLOYMENT RATE, BY SEX AND  
AGE, 1940 AND 1947-63<sup>a</sup>



SOURCE: Table D-5.

<sup>a</sup> Three-year moving average.

in the timing and extent of departure from the general movement are reminiscent of the pattern for fertility—the adverse departure is earlier and greater for the younger group. Thus Part A of Figure 33 (the figure presenting income information most immediately relevant to fertility behavior) shows that the median income of families with head aged 14–24 declined for several years after 1956–58, and by 1961–63 had recovered only to a slightly higher level than the 1956–58 peak. For those with head aged 25–34, median family income in this period continued to grow, but a gradual divergence from the aggregate movement becomes apparent after 1958–60.

3. As shown in Figure 34, the movement in unemployment rates by age supports the impression that in recent years the experience of younger groups has increasingly diverged in an unfavorable direction from the average.

4. *Within* the younger age groups, disparate movements are apparent in recent years between the lower and higher income segments. The poorest fifth of each younger age group has had less favorable income experience than the group average (Figure 33, Parts B and C). Indeed, for the lowest fifth of the households with head aged 14–24, income has actually declined noticeably since 1956–58.

5. In the 1940's, in contrast, the age pattern of income and unemployment changes was the opposite of that which has recently developed. Income of younger age groups grew substantially more rapidly than for others. This was because, relative to the average, the

proportion receiving income in these groups rose sharply, while relative income per recipient remained virtually constant (Figures 32 and 35).

Similarly unemployment rates of younger persons converged sharply toward the average (Figure 34). Finally, within the younger groups the lowest income segments experienced more rapid growth [22].

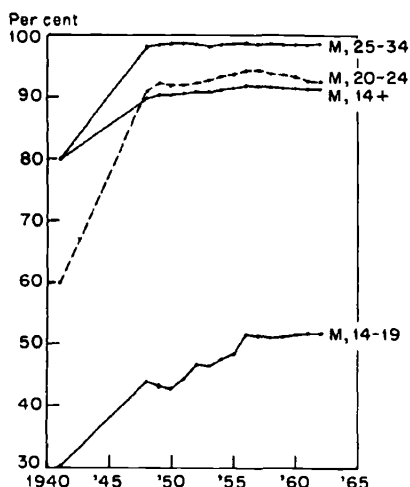
6. Since the economic situation of a family depends on more than its current income, other pertinent measures may be noted, though the information is more fragmentary and (for the measures noted in the second and third paragraphs below) of lower reliability.

Veteran status entails access to certain benefits and credit resources. For males aged 20-24, the proportion of veterans in civilian life rose to almost two-fifths in 1950; by the mid-1950's it had dropped to somewhat over one-fifth; and, by 1961-63, to almost zero (Figure 36). Roughly similar movements are apparent for those aged 25-29 and 30-34, but at a higher level and with a lag.

Housing conditions are sometimes considered relevant to fertility behavior. For nonfarm families in which the head was aged 18-24 or

FIGURE 35

MALE MONEY INCOME RECIPIENTS AS A PERCENTAGE OF MALE POPULATION, BY AGE, 1941 AND 1947-63<sup>a</sup>

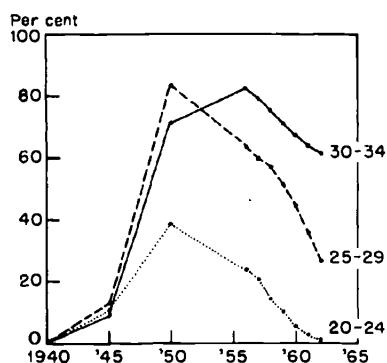


SOURCE: Table D-6.

<sup>a</sup> Three-year moving average.

FIGURE 36

VETERANS AS A PERCENTAGE OF MALE POPULATION, BY AGE, 1940, 1945, 1950, AND 1955-63<sup>a</sup>



SOURCE: Table D-7.

<sup>a</sup> Three-year moving average.

TABLE 3. PERCENTAGE OF NONFARM FAMILIES OWNING HOMES, BY AGE, 1930-63

Age	1930	1940	1949	1954	1959	1960	1962		1963
							Jan-Feb	Dec <sup>a</sup>	
18 and over	46	41	51	56	58	58	56	59	61
18-24	11	12	21	17	16	14	7	12	15
25-34	26	22	35	42	42	44	44	42	47
35-44	44	37	53	57	63	64	66	60	71
45-54	55	48	59	63	64	69	67	71	72
55-64	64	56	62	66	69	62	67	69	63
65 and over	73	65	59	63	66	65	58	64	72

SOURCE: Through 1940, from census reports; 1949-59, from *Federal Reserve Bulletin*, September 1959, p. 1107, Supplementary Table 1; December 1962, from *Ibid.*, March 1964, p. 292; 1960, January-February 1962, and 1963, from George Katona et al, *Survey of Consumer Finances*, 1960, pp. 60-61, 1962, p. 89, 1963, p. 90.

<sup>a</sup> Includes farm families.

25-34, the percentage owning their own homes rose markedly between 1940 and 1949 (Table 3). Since that date, for those with head aged 18-24 the proportion has tended to drop off;<sup>2</sup> for those with head aged 25-34, it continued to rise noticeably through 1954, but thereafter edged up only slightly.

Between 1953 and 1962, the median net worth (in current dollars) of all spending units rose, but for those with head aged 18-24 or 25-34, it declined (Table 4). As a percentage of income, the adverse movement in the net worth position of younger persons is even more marked. Among all spending units, the proportion with net worth equal to or greater than one-half annual income decreases from 63 to 59 per cent; for those with head aged 18-24, the decrease is from 21 to 15 per cent, and with head aged 25-34, from 52 to 37 per cent.

### *Marriage, Household Formation, and Wives'*

#### *Labor Force Participation*

In the interpretation of the baby boom in Chapter 4, fertility was but one of several demographic variables markedly affected by the

<sup>2</sup> The low value for January-February 1962 is not supported by two subsequent surveys taken within twelve months of that date, and is most likely due to sampling variability.

exceptional economic situation. It is pertinent, therefore, to see whether these other variables have changed recently in a direction consistent with the earlier interpretation.

To turn, first, to marriage behavior, for the age groups under 25, the proportion ever-married rose sharply in the 1940's, leveled off in the 1950's, and, in recent years, shows evidence of a decline (Figure 37). As would be expected, for females this pattern is more pronounced at somewhat lower ages than for males. For the age groups over 25, following an initial rise, a leveling off is apparent but as yet there is no indication of a decline.

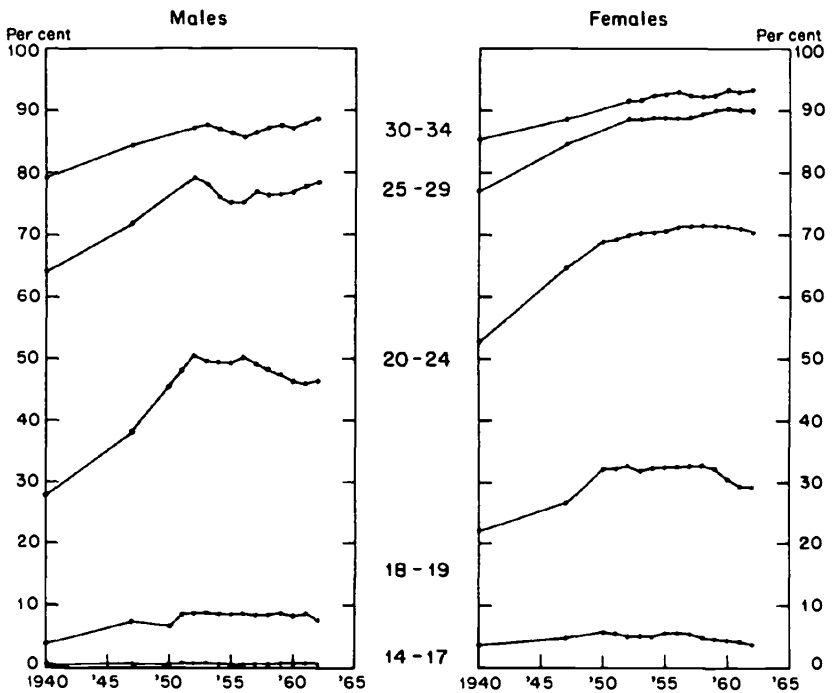
TABLE 4. PERCENTAGE DISTRIBUTION OF SPENDING UNITS BY AGE, BY NET WORTH, 1953 AND 1962

Net Worth (current dollars)	Age of Head						
	14 and Over		18-24		25-34		
	1953	1962	1953	1962	1953	1962	
Negative	}	11	20	22	15	20	
0-999		31	19	53	50	20	20
1,000-4,999		23	21	22	23	33	34
5,000-9,999		17	15	3	3	16	11
10,000-24,999		18	20	1	1	12	10
25,000 and over	11	14	1	1	4	5	
Total	100	100	100	100	100	100	
Median (dollars)	4,100	4,700	300	250	2,110	1,800	
Net worth as percentage of pre-tax money income in previous year							
Zero or negative	16	17	25	33	19	25	
1-49	21	24	54	52	29	38	
50-99	11	13	13	9	16	16	
100-199	15	15	6	3	17	12	
200-499	20	17	1	1	15	6	
500 and over	17	14	1	2	4	3	
Total	100	100	100	100	100	100	

SOURCE: George Katona et al, 1962, *Survey of Consumer Finances*, 1963, pp. 128-29, 133.

FIGURE 37

EVER-MARRIED PERSONS AS PERCENTAGE OF POPULATION, BY SEX AND AGE, 1940, 1947, and 1949-63<sup>a</sup>



SOURCE: Table D-8.

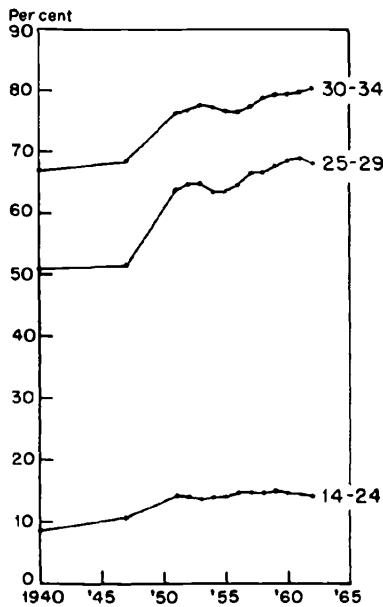
<sup>a</sup> Three-year moving average.

The movement in household formation, shown in Figure 38, tends to lag behind that in marital status. For males aged 14-24 and 25-29, while there is no indication in recent years of a continuation of the earlier upsurge in the proportion heading husband-wife households, neither is there evidence as yet of a marked decline, although a slight downturn is perhaps indicated.

After increasing in the 1940's, the labor force participation rates of young wives tended to level off in the first half of the 1950's (Figure 39, Part B). More recently, however, they have started to climb again, so noticeably that the latest labor force projections embody a significant revision for this group. Two considerations suggest

that the circumstances responsible for the recent rise differ from those underlying the earlier. In the 1940's unemployment rates for young females were declining; in the recent period, the increase in labor force participation has occurred in the face of rising unemployment rates (Part A). Second, in the earlier period the rates for wives with young children grew somewhat less than those for married women as a whole; in the recent period the rates for wives with young children are chiefly responsible for the upward movement for the group as a whole (Parts C and D). These observations suggest that, while the rise in labor force participation of young wives in the 1940's was induced by the increasing tightness of the labor market as a whole—both for younger men and women—in the 1950's it arose from a deterioration in the labor market for young men relative to that of young women,

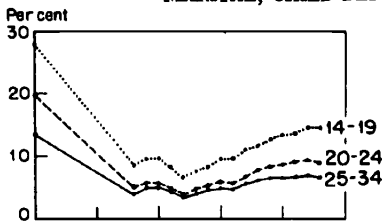
FIGURE 38  
 PERCENTAGE OF MALE POPULATION  
 IN HUSBAND-WIFE HOUSEHOLDS, BY  
 AGE, 1940, 1947, AND 1950-63<sup>a</sup>



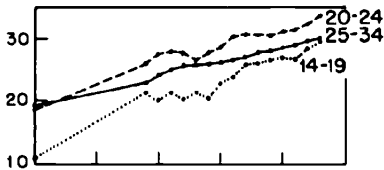
SOURCE: Table D-9.  
<sup>a</sup> Three-year moving average.

FIGURE 39

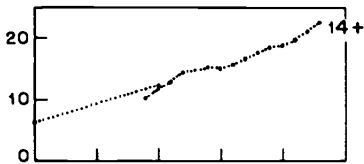
UNEMPLOYMENT AND LABOR FORCE PARTICIPATION RATES OF FEMALES, BY MARITAL, CHILD DEPENDENCY, AND AGE CLASSES



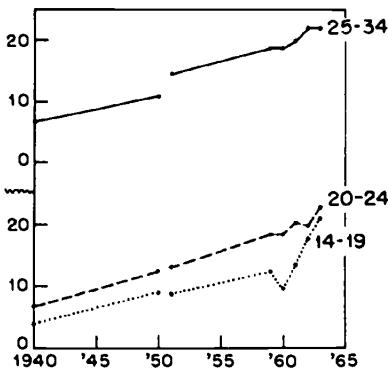
A. Unemployment Rate of Females, by Age, 1940, 1947-64 <sup>a</sup>



B. Labor Force Participation Rate, Married Females with Husband Present, by Age, 1940, 1948-64 <sup>a</sup>



C. Labor Force Participation Rate, Married Females with Husband Present, with Children under 6 and No Child 6-17, 1940, 1950, and 1948-64 <sup>a</sup>



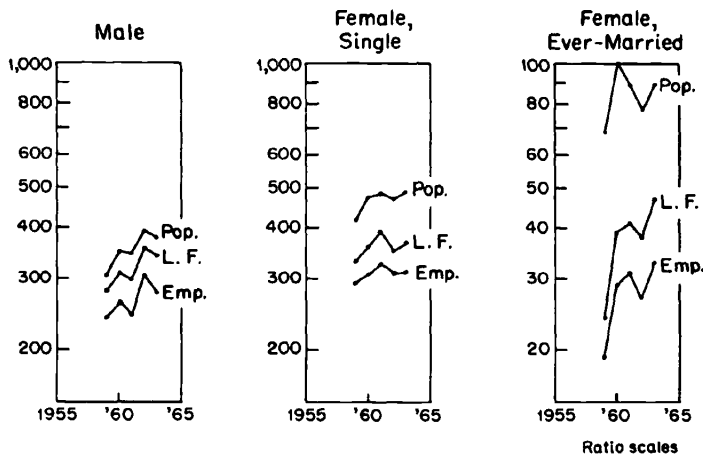
D. Labor Force Participation Rate, Married Females with Husband Present, with Child under 6, by Age, Selected Years, 1940-63

SOURCE: Tables D-10 through D-13.

<sup>a</sup> Three-year moving average.

FIGURE 40

NEW HIGH SCHOOL GRADUATES NOT ENROLLED IN COLLEGE,<sup>a</sup> BY SEX, MARITAL STATUS, AND EMPLOYMENT STATUS IN OCTOBER OF YEAR OF HIGH SCHOOL GRADUATION: ANNUALLY, 1959-63 (thousands)



SOURCE: Table D-14.

<sup>a</sup> Civilian noninstitutional population.

which made it increasingly difficult for husbands to support a family and correspondingly created pressures for increasing participation by their wives.

For the last few years, insight into the experience of a somewhat more homogeneous segment of the younger population—new high school graduates who did not go on to college—is provided by recent surveys of their employment status four months after graduation (Figure 40). Although the size of the group is small and sampling variability consequently greater, there is a striking rise in the employment and labor force figures for married females in this group; a finding at a more microscopic level consistent with the view just expressed.

#### *Desired Consumption Level*

In the discussion of income above, the concern was with the absolute level, and the implied hypothesis was that fertility varies directly with the absolute income level, other things being equal. One

of the considerations included in the *ceteris paribus* assumption is the consumption level *desired* by the husband and wife. It is generally recognized that in considering the potential uses of additional income, a rise in the per capita stock of consumer goods available to husband and wife is an alternative to expanding the size of the family [14, 45]. Holding income constant, one would expect that fertility would vary inversely with the desired consumption level.

But do desired consumption levels change, and if so, why? This question involves us in complex conceptual issues in the economics of consumer preferences. There is an understandable reluctance among economists to explain changes in behavior in terms of changes in "tastes," which are typically taken as given. There is, however, one generally accepted proposition of immediate relevance: If one of two families with equal current income previously received higher income than at present, that family would be expected to spend more on consumption [51, 130].<sup>3</sup> In other words, experience with previous higher income levels alters "tastes" and thereby consumption behavior.

This line of reasoning may be transferred with some modification to the present problem. Young persons currently in the childbearing ages a few years before were dependent members of their parents' households, and it seems plausible that the consumption levels experienced in the parents' households among other things served to shape their current preferences in much the same way a previous higher income level would affect those of a given household. Moreover, the situation in the parents' household when the children were in their teens would seem more relevant than when the children were quite young.

If this is so, an interesting implication follows. In a developing economy the second generation's income at age 20-24 is typically greater than the first generation's was at that age. The second generation could thus achieve the consumption level the first generation had at age 20-24 and have something left over for other purposes, such as saving or increased family size. But if the *desired* consumption level inherited by children from their parents relates to the parents' situation

<sup>3</sup> The pioneering contribution on the "relative income" hypothesis is Dorothy S. Brady and Rose D. Friedman [22a].

not at age 20-24 but at, say, 35-44, then it is less certain that the second generation's income at 20-24 will suffice to achieve the desired consumption level. In other words, there is an intergenerational effect tending to increase consumption at a given income level. Clearly by varying the parameters involved one could develop alternative models in which secular growth in absolute income was accompanied by increasing, decreasing, or constant fertility.

Given the purpose and scope of the present report, it is scarcely appropriate to pursue this suggestion regarding the secular trend at this point.<sup>4</sup> Two brief points may, however, be added. First, while the above clearly does not imply that such a model would suffice to explain the secular trend, it obviously bears on the oft-raised question of how to reconcile the apparent contradiction between the secular inverse (gross) association between income and fertility, on the one hand, and the shorter-term positive association, on the other. Second, it suggests that in an analysis of the secular trend the actual income of those in childbearing ages should be sharply distinguished from the factors behind the formation of their preference patterns. Under the latter heading would be included not only parents' income, but variables such as religion, nativity, and one currently the subject of increasing attention, farm-nonfarm origin.<sup>5</sup>

If sufficient historical data were available on income, tangible assets, and consumption expenditure by age, it would be possible to investigate various relations between parents' and children's incomes, and consider their bearing on fertility behavior. Unfortunately, the necessary information is scarce, and an attempt is made here only to present two largely illustrative analyses.

1. Column 2 of Table 5 shows the median income of families with head aged 14-24, the series plotted in index form in Figure 33. Column 4 gives the income five years earlier of families with head aged 35-44, presumably, the households in which most of those in column 2 were

<sup>4</sup> Note should be made, however, of recent major contributions on secular fertility trends by Kingsley Davis [46] and Ronald Freedman [67].

<sup>5</sup> See Otis Dudley Duncan [51a], and citations of earlier work by Goldberg and Freedman given therein. I have explored more fully these and other conceptual issues raised in this Part in a recent paper "Towards a Socio-Economic Theory of Fertility," which appeared in *Fertility and Family Planning: A World View*, a collection of papers prepared for the University of Michigan sesquicentennial celebration, November 15-17, 1967.

TABLE 5. TOTAL MONEY INCOME OF FAMILIES WITH HEAD AGED 14-24 COMPARED WITH THAT RECEIVED BY FAMILIES WITH HEAD AGED 35-44 FIVE YEARS EARLIER, 1953-62 (Income figures are in 1959 dollars and are three-year averages centered at indicated date.)

Head Aged 14-24		Head Aged 35-44		Col. 2 ÷ Col. 4
Year (1)	Income (2)	Year (3)	Income (4)	Per Cent (5)
1953	3,405	1948	4,199	81.1
1954	3,496	1949	4,221	82.8
1955	3,701	1950	4,343	85.2
1956	3,912	1951	4,570	85.6
1957	3,981	1952	4,787	83.2
1958	3,916	1953	4,950	79.1
1959	3,887	1954	5,152	75.4
1960	3,984	1955	5,389	73.9
1961	4,068	1956	5,627	72.3
1962	4,077	1957	5,762	70.8

SOURCE: Same as for Table D-4.

living at that time.<sup>6</sup> Thus, column 2 is the actual income of young families; column 4, an indicator of the desired consumption level inherited by them from their parents' households. (Clearly some adjustment in the level of column 4 would improve it as a consumption indicator, but our present interest is ultimately in the change rather than level of the series.) Column 5 of Table 5 presents the ratio of the two. In terms of the present framework this shows, e.g., that in 1953, on the average, young households were receiving incomes equal to about four-fifths of what their parents received five years ago. As was previously observed, and is shown here in column 2, absolute income leveled off for this age group around 1956-58. What is suggested by column 5, however, is that relative to desired consumption, income has been *falling* since about 1955-57 for this age group, a development which would clearly serve to create greater downward pressure on fertility.

<sup>6</sup> It would be desirable to experiment with lags of varying length as well as to identify more precisely the relevant parent cohort, but longer time series and greater age detail are needed for a thorough investigation.

TABLE 6. NET STOCK OF TANGIBLE ASSETS PER NONFARM HOUSEHOLD, 1929-58  
(1947-49 dollars)

Year	Assets Per Household	Year	Assets Per Household	Year	Assets Per Household
1929	12,210	1947	8,650	1953	9,210
1933	11,060	1948	8,690	1954	9,400
1939	9,580	1949	8,660	1955	9,780
1945	8,240	1950	8,840	1956	10,020
.....					
1945	8,410	1951	8,920	1957	10,110
1946	8,470	1952	9,040	1958	10,200

SOURCE: For net tangible assets of nonfarm households, Raymond W. Goldsmith, *The National Wealth of the United States in the Postwar Period*, Princeton, 1962, p. 203. For number of nonfarm households, Bureau of the Census, *Current Population Reports: Population Characteristics*, Series P-20, No. 92. The two entries for 1945 arise from differing estimates of net assets, the first comparable to the pre-1945 values; the second, to the post-1945 values.

2. Table 6 is an attempt to develop a rough impression of the longer-term movement in desired consumption levels since 1929. The table shows the value in constant dollars of tangible assets per nonfarm household after allowance for depreciation.<sup>7</sup> Ideally, it would be desirable to have such information by age of household head. If, failing this, one takes the movement in the average as likely to be broadly indicative of the changing situation of the age group 35-44, then the series can be used to infer differences among successive younger cohorts in inherited consumption desires. Thus from 1929 through the late 1940's assets per household for all age groups, and presumably for those with head aged 35-44, declined and then leveled off. This suggests that the cohorts reaching childbearing age and establishing separate households toward the end of this period had been raised in less materially prosperous home environments than those reaching childbearing age earlier in the period and consequently had lower desired consumption levels. Indeed, the cohorts reaching childbearing age, say 15-19, when asset levels were lowest, roughly

<sup>7</sup> The figures comprise largely homes and consumer durables, whether owned or rented. Particularly prior to the postwar period the former dominates the total, so that the series might be viewed as a crude index of housing conditions, with the depreciation adjustment providing an allowance for age of housing.

in the decade 1940-50, include those that figured most prominently in the baby boom. Since the late 1940's average assets per household have moved up noticeably, which would imply that the most recent cohorts are reaching childbearing age with desired consumption levels significantly above those of their predecessors.<sup>8</sup>

### *Summary and Qualifications*

Let us summarize the general impression emerging from this survey of the evidence, keeping in mind its preliminary nature. In recent years young persons' income has grown only hesitantly and their unemployment rates have risen. The situation has been most severe among the lowest-income segments of these groups. Home ownership has become less prevalent among households with head aged 18-24, although it has continued to edge up slightly for those 25-34. In both groups, however, net worth position has declined, suggesting heavier pressure of liabilities. Moreover, most of the special benefits associated with war veteran status are no longer available. The labor force participation of young wives with dependent children has risen noticeably, suggesting increasing economic stress on the family. Finally, the young cohorts of recent years have come from wealthier backgrounds than their predecessors in the 1940's, and in all likelihood are entering the childbearing ages with the more expensive tastes for consumer goods thereby acquired.

These developments contrast strikingly with the unusually favorable economic circumstances of young adults in the decade or so prior to the mid-1950's. They are consistent with the hypothesis that economic factors have been, at least in part, responsible, first, in the early postwar period for the abrupt declines in age at marriage and house-

<sup>8</sup> While the U-shaped movement in assets per household seems plausible (and it is this which provides the basis in the text for inferences about the movement in desired consumption levels), the noticeably lower level of the series in 1958 than in 1929 is puzzling. Differences between the two dates in the age distribution of households might account for a part of this. Also the fact that the present figures are mean rather than median values may be relevant. There is a great difference between the two (e.g., with regard to net worth, the mean value in 1962 was \$14,600 compared to a median of \$4,700). Since inequality declined between 1929 and the more recent period, the median figure for net assets would presumably show a smaller decline. Nevertheless, one has the impression that the present series is biased downward at later relative to earlier dates.

Subsequent to the preparation of this analysis, I discovered that in 1956 Victor R. Fuchs [72] predicted a decline in the U.S. birth rate, partly on the basis of reasoning similar to that advanced here.

hold formation and the associated rise in fertility, and second, for the more recent slowdown and gradual reversal of these demographic movements.

This conclusion, however, must be tempered by explicit recognition of the various shortcomings of the present analysis. While I have been able in this study—thanks to the new and growing fund of survey data since World War II—to probe perhaps more deeply into relevant economic circumstances than has typically been done in the past, no attempt has been made to assess the extent to which the quantitative magnitude of the fertility decline might be explained by economic factors. Further, separate examination would be desirable of various component groups in the population, for example, farm, nonwhite, and, as data become available, different socioeconomic classes. Study is needed also of the older groups in childbearing ages, even though their quantitative importance in the over-all period rates has not been great. Finally, an effort should be made at a cohort approach, though this is currently handicapped by the varying ways in which age detail is presented in the source materials.

## IMPLICATIONS FOR FERTILITY PROJECTIONS

### *Period Rates*

In view of the limited scope of the present analysis and manifest needs for further research, one may doubt the advisability of raising the question of prospective fertility changes. The justification for doing so arises from recognition that the use of economic factors in fertility projections is itself a pressing research problem. The current consensus is aptly stated by two of the authors of the recent census projections: "It is sometimes suggested that a considerable improvement in our projections of births could be achieved if account were taken of the relation between changes in fertility and economic changes. Our tentative view is that this approach is hardly feasible and that it may not achieve the end desired" [143].

Chapter 4 indicated that the postwar baby boom could be reconciled with longer-term historical experience; this chapter suggests that the recent shift from baby boom to fertility decline is consistent with the earlier interpretation. In both papers, economic factors were considered fundamental to fertility changes. Clearly, the implications of

this viewpoint for the use of studies of economic factors in projections would be of interest, even though the discussion must necessarily be exploratory. Moreover, such a discussion might serve further to illustrate the framework and highlight research needs. What follows therefore is frankly speculative and is offered not as a prediction but for whatever value it may have in furthering research in this area.

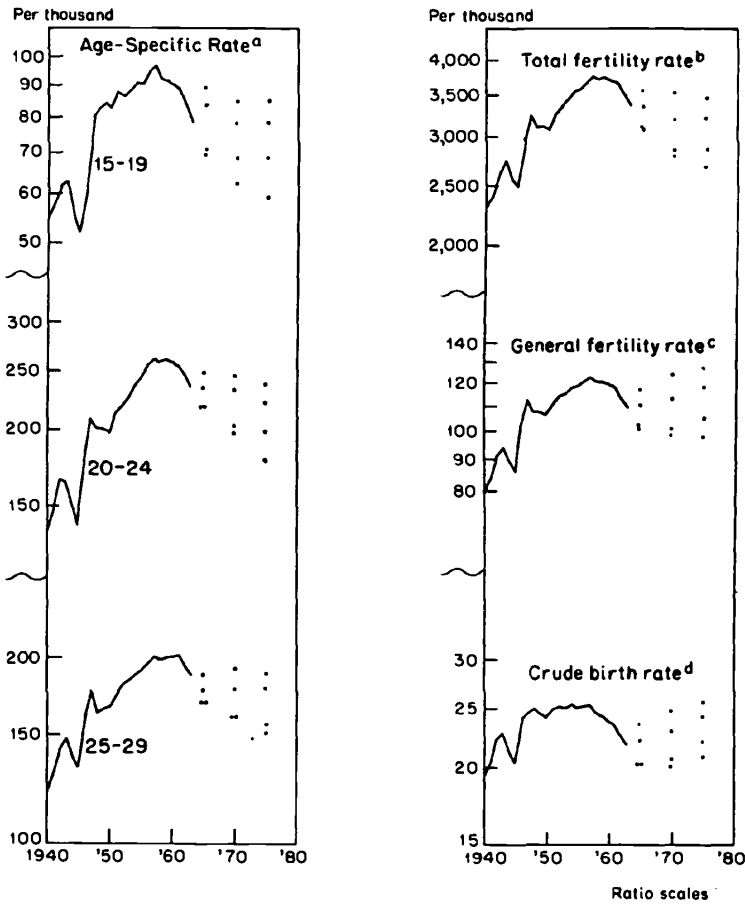
The admirably detailed population projections recently released by the Bureau of the Census provide the point of departure [144]. These present not forecasts but the implications of alternative assumptions regarding the future course of the components of population change, particularly fertility. The framework thus provided for reflection about prospective developments is extremely valuable. For the foreseeable future, the potential contribution of the present approach would seem to lie not in supplanting such a framework, but in appraising the relative plausibility of the various assumptions and perhaps suggesting new possibilities. Thus, with reference to Figure 41, which shows the four series of projected fertility rates through 1975,<sup>9</sup> the pertinent question would be: Which, if any, of the projected paths is more consistent with the present analysis?

At the heart of the present explanation of postwar fertility movements are differences in income growth by age. Ideally, in looking to the future one would want projections of income by age based on a tested theory of the determinants of this distribution. Although there is no such theory available, the framework of Chapter 4 embodies a view, speculative though it may be, regarding these determinants; and we may perhaps utilize this to form some crude notion of prospective income trends for young adults compared to others. In this conception, the swing in the relative income position of young adults since 1940 has been chiefly due to corresponding swings from relatively favorable to unfavorable positions in three factors—aggregate demand, and the relative quantity and quality of younger persons. The first part of the period was characterized by high growth of aggregate demand associated with the war and early postwar boom, a relative shortage of young workers, and an unusual educational advantage of young over old; the second part, by slackened growth in aggregate demand, sub-

<sup>9</sup> For each date from 1965 on the points plotted refer, from top to bottom, to projections A, B, C, and D, respectively.

FIGURE 41

BIRTH RATE, BY AGE OF MOTHER AGED 15-19 THROUGH 25-29, AND SUMMARY FERTILITY MEASURES: ANNUALLY, 1940-63, AND PROJECTED, QUINQUENNALLY, 1965-75



SOURCE: Table D-15.

<sup>a</sup> Per 1,000 female population in specified age group.

<sup>b</sup> Computed by summing age-specific rates for each five-year age group through 40-44 and multiplying the result by 5. The result is the completed fertility rate that would arise if a hypothetical cohort experienced the age-specific rates of the given date in the course of its reproductive history.

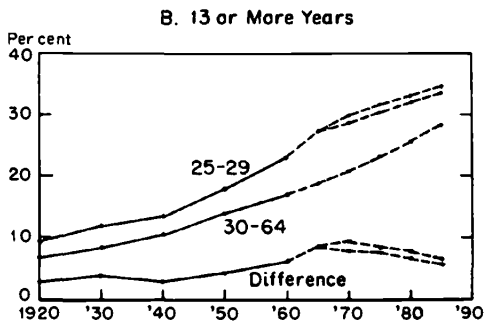
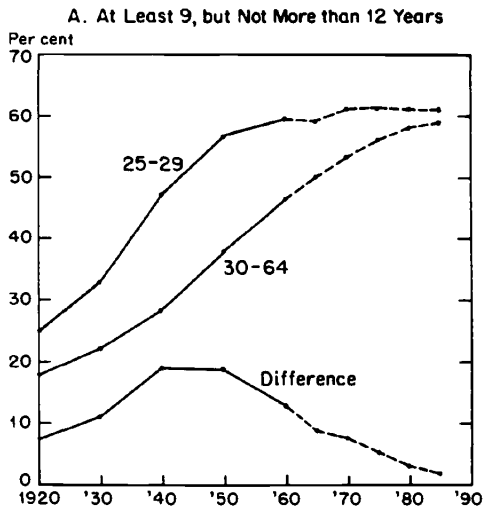
<sup>c</sup> Total live births divided by female population aged 15 to 44.

<sup>d</sup> Total live births divided by total population of all ages.

stantial growth in the relative number of younger persons, and deterioration in their educational advantage. Regarding the outlook over the next decade, the projections of educational attainment imply some additional decline in the relative advantage of younger persons in high school, though not college education (Figure 42). As for relative

FIGURE 42

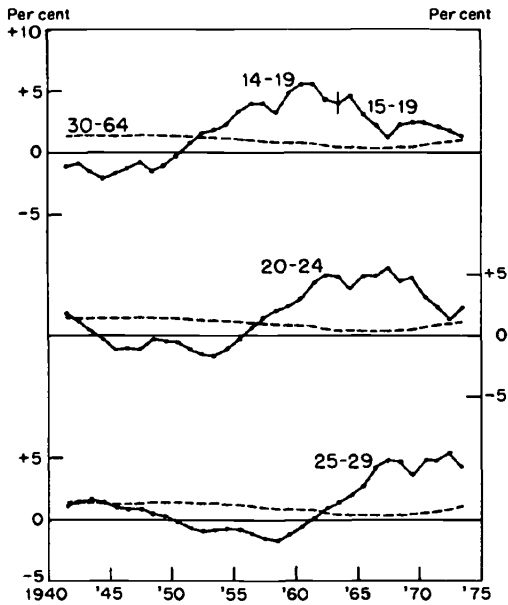
PERCENTAGE OF THOSE AGED 25-29 AND 30-64 WITH SPECIFIED YEARS OF SCHOOL COMPLETED: ACTUAL, DECENNIALLY, 1920-60; PROJECTED, QUINQUENNIALLY, 1965-85



SOURCE: Table D-16.

FIGURE 43

ANNUAL RATE OF CHANGE OF MALE POPULATION AGED 14-19,<sup>a</sup> 20-24, AND 25-29 COMPARED WITH THAT AGED 30-64: ACTUAL, 1940-64; PROJECTED, 1964-75<sup>b</sup>



SOURCE: Table D-17.

<sup>a</sup> After 1964, aged 15-19.

<sup>b</sup> Three-year moving average.

quantity, the growth rate of those aged 15-19, which has been rising for over a decade, will start to taper off in the next ten-year period, but that for the two succeeding age groups will be cresting (Figure 43). These considerations tend, if anything, to suggest some possible further deterioration in the relative income position of younger persons. On the other hand, it is possible (though by no means certain) that aggregate demand growth will be higher than in the recent past and the relative income position of younger persons will be consequently helped through an improvement in their relative employment situation. As shown in Table 7, however, the decline in relative income position of young adults in the recent past has noticeably ex-

TABLE 7. INCOME AND EMPLOYMENT OF THOSE AGED 14-24  
RELATIVE TO THOSE 35-44: AVERAGE FOR PEAK TO PEAK CYCLES,  
1948-63  
(per cent)

Cycle	Total Money Income (Ratio of Median for Families with Head 14-24 to That for Head 35-44) (1)	Civilian Employment as Percentage of Labor Force (Ratio of Rate for Males 14-24 Not Enrolled in School to That for Males 35-44) (2)
1948-53	72.4	96.5
1953-57	68.8	96.0
1957-60	65.2	93.3
1960-63 <sup>a</sup>	62.3	93.9

SOURCE: Col. 1, same as for Table D-4; col. 2, [202, March 1965, p. 205, Table A-12, and p. 222, Table B-8].

<sup>a</sup> Incomplete cycle.

ceeded what might have been expected as a result of the greater growth in unemployment among this group. Hence, under prospective supply conditions, even restoration of the earlier more favorable employment situation would probably only moderate the adverse relative income condition that has developed for young adults.

Altogether, the outlook for the next decade suggested by these considerations is that the relative income position of younger persons may show some further decline and then a leveling off, perhaps followed by a slight rise. As among the several age groups, those aged 15-19, which are furthest along with regard to the adverse impact of numbers on the labor market, might be expected to lead in this movement, with those aged 25-29 lagging behind. With regard to fertility rates for these age groups, one might correspondingly infer some further decline followed by a leveling off. Of the projections shown in Figure 41, this would suggest that series C and D are more consistent with the present analysis. As between the two, there is little to choose through 1975, but the tendency of series C to level off seems somewhat more in line with the suggested income movements. Since, as we have indicated, the movements in the age-specific rates for those under 30 typically dominate the movement in the summary measures

for all ages, one might further infer that the total fertility rate would continue to decline between 1965 and 1970 and then level off (Figure 41). The substantial positive effect on fertility of prospective age composition shifts over this period is shown by the movements in the general fertility rate and crude birth rate. The latter would actually "bottom out" in 1965-70 and show a noticeable rise in 1970-75.

### *Completed Fertility*

To this point the discussion has been concerned entirely with "period rates" of fertility, that is, measures of reproductive performance during a given chronological period. Important research by P. K. Whelpton and his colleagues in the postwar period has brought to the forefront a new set of fertility measures, namely, "cohort rates," in which the basic unit of study is not a chronological period but a population cohort, typically a group of women born in a given year(s). Thus a cohort fertility measure describes the reproductive history of the group up to a specified age. The "completed fertility rate" is a cohort measure showing the total number of live births per woman (or per thousand women), on the average, over the entire reproductive period of the cohort. For cohorts currently completing childbearing this is in the neighborhood of 3.0 births per woman.

It has been stressed that variations in period rates do not necessarily imply variations in completed fertility rates, since the former are also influenced by changes in the spacing of childbearing. For example, during much of the period of the baby boom (a period rate phenomenon at the time) it was often pointed out that the boom did not necessarily imply a rise in completed fertility (though this has in fact subsequently proved to be the case). Correspondingly, it might be asked whether the recent and prospective decline in period rates portends a decline in completed size of family?

A satisfactory answer to this calls for explaining the age-specific rates for the groups aged 30 and over, which is not attempted here.<sup>10</sup> However, just as the rates for ages under 30 dominate the summary period rates, so cumulative births for a cohort through age 29 com-

<sup>10</sup> A recent paper by Arthur A. Campbell provides a concise review of the postwar fertility experience from the cohort viewpoint [28]. Campbell suggests that the recent fertility decline at older ages is due to a change in spacing.

prise a large share of the cohort's completed fertility. For example, if the cohort of 1945-50, which will be aged 15-19 in 1965, were to show the relevant age-specific rates of the Census C projections as it aged to 25-29 in 1975, it would have had an average of 2.1 live births per woman by that age. Clearly, the present speculation regarding the outlook through 1975 for age-specific rates up to ages 25-29 carries this cohort through the main part of its reproductive period. If this cohort were to maintain the spacing pattern used in all the Census projections (which is to say if it were to continue on the C track through the remainder of its reproductive career), its completed fertility would be 2.8 births, well below the roughly 3.3 peak now anticipated for the cohort of 1930-35 (Table 8, column 4).

Is a movement like this toward lower completed fertility likely to occur, or is a major change in child-spacing toward later age in prospect? While significant shifts in child-spacing have occurred in past experience, most notably toward earlier childbearing in the past two decades, there is nevertheless a high positive correlation between cumulative fertility through age 29 and completed fertility. Presumably this is but one indication that by age 30 the life cycle pattern of most individuals has been well established. While some shift toward later childbearing seems possible, one may speculate that with the continued growth in the educational level of females and in opportunities for them in productive employment a major reversal toward later childbearing is unlikely to occur. On these (admittedly tenuous) grounds, I venture the guess that the current movements in period fertility do imply a reduction in completed fertility.

Recent surveys show that expectations regarding completed family size for cohorts currently entering the childbearing period do not differ significantly from those of cohorts further along [68]. These results appear to contradict the suggestion made here of an incipient decline in completed fertility, and to imply that the recent decline in fertility among younger persons involves merely postponement of births which will be made up at later ages. However, a suggestion is put forward by the authors of the survey report, and some supporting evidence noted, that postponement of births may be a first step toward revising expectations downward. If correct, this would reconcile the expectations results with my speculation.

However, it is not entirely clear that the survey results are in

TABLE 8. PROJECTED AND EXPECTED NUMBER OF BIRTHS PER WOMAN FOR FIVE-YEAR BIRTH COHORTS OF WOMEN, BIRTH YEARS, 1920-25 TO 1955-60

Birth Cohort	Age in 1965 (1)	Projected				Expected				
		Series				Birth Cohort (6)	Survey Year			
		A (2)	B (3)	C (4)	D (5)		'60 (7)	'62 (8)	'63 (9)	'64 (10)
1920-25	40-44	2.9			2.9	1921-25	3.0	n.a.	n.a.	n.a.
1925-30	35-39	3.2	3.1		3.1	1926-30	3.3	3.1	3.2	3.2
1930-35	30-34	3.5	3.4		3.3	1931-35	3.4	3.3	3.3	3.5
.....										
1935-40	25-29	3.5	3.4		3.2	1936-42	3.1	3.2	3.2	3.2
1940-45	20-24	3.5	3.3		3.0	1939-45	n.a.	n.a.	3.1	3.0 <sup>a</sup>
1945-50	15-19	3.4	3.2	2.8						
1950-55	10-14	3.4	3.1	2.8	2.7					
1955-60	5-9	3.4	3.1	2.8	2.5					
					2.4					

NOTE: (1) Cohorts below dotted line are those affected by projections for 1965 through 1975 of age specific rates for 15-19, 20-24, and 25-29. (2) Except for the youngest cohort, the expectation data refer only to those members of each cohort who would have been eligible for the 1960 GAF study. There is, therefore, an upward selection with respect to duration of marriage as these cohorts age.

SOURCE: Cols. 1-5, [144, Table A-1]; cols. 7-10, [68, Tables 3 and 7]. Unpublished 1964 survey data were provided by Ronald Freedman.

<sup>a</sup> Birth cohort of 1940-46.

n.a. = not available.

conflict with my view. In Table 8 the expectations of various cohorts reported in the survey have been matched with the census projections. If one reads columns 7 through 10 vertically, one finds a consistent picture of a rise in completed family size through the cohort of 1931-35, followed by a gradual decline for the two subsequent cohorts.<sup>11</sup> The close correspondence of the Census C and D projections with this pattern, not only in movement but in magnitude as well, is not exactly surprising since the projections utilized the surveys through 1962. The point is, however, that my analysis based on economic considerations, which relates to the cohorts below the break in the series, independently suggested the Census C series as the most plausible, and this is the one consistent with the expectations results.

<sup>11</sup> The original draft of the chapter was based on the 1960, 1962, and 1963 surveys. Subsequently, Ronald Freedman kindly supplied comparable 1964 data, which proved to show the same pattern of intercohort differences as the three previous surveys.

The apparent contradiction between the survey results and my suggestion of a prospective decline in completed fertility thus stems from the fact that the size of the sample does not permit attributing *statistical* significance to the decline indicated by the survey results, rather than the absence of such a decline. Some reassurance about the reliability of the differences in expectations for adjacent cohorts might perhaps be drawn from the fact that all four surveys indicate a larger completed rate for the 1931-35 cohort than for the 1926-30 cohort, and a smaller rate for the 1936-42 cohort than for the 1931-35 cohort, though the magnitude of the differences vary. Clearly what is needed, however, is an increase in sample size to permit finer judgments about statistically significant differences. In this connection, it would seem desirable to strive in addition for separate observations for the 15-19 group. The cohort of 1945-50 will reach this age in 1965 and the Census C series implies a further noticeable decline in the completed rate for this group. The current survey procedures, however, would not provide a reading on this group until it is 20-24.

#### *Conclusions on Projections*

The application of the cohort approach has resulted in significantly improved population projections in recent years. Surveys of fertility expectations are of value both in the development of new projections and in appraising existing ones, as well as in analyzing ongoing fertility changes. The present discussion of economic factors suggests that such an analysis may play a role in projections work similar to that performed by the expectations surveys. If my analysis is correct, each projection series implies a pattern of income change by age. To the extent this pattern can be made more explicit (perhaps tying in, for example, with recent work on income by age at HEW [22]) the more feasible it becomes to appraise the "realism" of individual projections, in much the same way as knowledge of the completed fertility rate implied by different projections helps in evaluating them. It hardly needs to be stressed that this is a goal, and that much more basic research is needed, including of course attention to differences among population components. The complementary use of expectations surveys and studies of economic factors, illustrated in this discussion, is an attractive possibility for the longer run.

